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Psychology Applications & Developments IX

Edited by Clara Pracana & Michael Wang

Advances in Psychology and Psychological Trends Series

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Edited by:

Prof. Dr. Clara Pracana
Portuguese Association of Psychoanalysis and Psychoanalytic Psychotherapy
Portugal

Prof. Dr. Michael Wang
Emeritus Professor of Clinical Psychology, University of Leicester
United Kingdom

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FOREWORD

inScience Press is pleased to publish the book entitled *Psychology Applications & Developments IX* as part of the Advances in Psychology and Psychological Trends series. These series of books comprise authors' and editors' work to address generalized research, focused on specific sections in the Psychology area.

In this ninth volume, a committed set of authors explore the Psychology field, therefore contributing to reach the frontiers of knowledge. Success depends on the participation of those who wish to find creative solutions and believe in their potential to change the world, altogether, to increase public engagement and cooperation from communities. Part of our mission is to serve society with these initiatives and promote knowledge. Therefore, it is necessary the strengthening of research efforts in all fields and cooperation between the most assorted studies and backgrounds.

In particular, this book explores 4 major areas (divided into 4 sections) within the broad context of Psychology: Clinical Psychology, Educational Psychology, Social Psychology and Cognitive and Experimental Psychology. Each section comprises chapters that have emerged from extended and peer reviewed selected papers originally published in the proceedings of the International Psychological Applications Conference and Trends (InPACT 2023) conference series (http://www.inpact-psychologyconference.org/). This conference occurs annually with successful outcomes, for that reason original papers have been selected and its authors were invited to extend them significantly to once again undergo an evaluation process. Subsequently, the authors of the accepted chapters were requested to make corrections and improve the final submitted chapters. This process has resulted in the final publication of 20 high quality chapters.

The following present a small description of each section and the chapters' abstracts to provide an overall information on the contents of this book.

Section 1, entitled "Clinical Psychology", provides reviews and studies within various fields concerning relationship processes in clinical practice. Each chapter is diversified, mainly addressing topics related to individuals' well-being and improvement of quality of life.

Chapter 1: *Translation, Reliability, and Construct Validity of the Japanese Version of the Attitudes Toward Forgiveness Scale*; by Katsunori Sumi. Although numerous forgiveness measures have been developed, only a few are useful for assessing the value of forgiveness. This study examined the reliability and construct validity of the Japanese translation (ATF-J) of the six-item Attitudes Toward Forgiveness Scale to assess individuals' value of forgiveness. The

participants were 234 Japanese college students (39.3% women; mean age = 20.85 years, SD = 1.27) who completed the questionnaire on two occasions separated by four weeks. The one-factor structure of the ATF-J was confirmed through exploratory and confirmatory factor analysis. Internal consistency reliability (Cronbach's αs = .71 and .73) and test–retest reliability over a 4-week period (r = .61) were acceptable. Construct validity was supported by the expected correlations with scores for dispositional forgiveness of others, hedonic and eudaimonic well-being, psychological stress, trait empathy, and trait anger. However, contrary to expectations, no significant correlations were found between ATF-J scores and depression and anxiety symptom scores. Overall, these findings provide preliminary support for the reliability and construct validity of the ATF-J. Therefore, the ATF-J is a useful tool for assessing the value of forgiveness in the Japanese population.

Chapter 2: *Surviving Strangulation: A Critical Literature Review of the Consequences from a Psychological Perspective*; by Emma de Lautour, Richard Fletcher, Darrin Hodgetts, & Robyn Vertongen. This critical review examines the literature on strangulation in the context of intimate partner violence, discussing in particular the neuropsychological and psychological consequences that have been associated with strangulation. Neuropsychological outcomes of strangulation have been predominantly derived from medical or forensic data and detail loss of consciousness, headaches, dizziness and memory loss as common consequences. Yet to be explored is the compounding effect of multiple instances of strangulation may have neuropsychologically, despite this being thought as a common experience to victim-survivors who have disclosed being strangled. PTSD and depression have been noted by researchers as a likely consequence of strangulation, however, the psychological consequences beyond diagnostic criteria are an area for further exploration. While informative, existing research has not yet examined how these consequences impact victim-survivors of strangulation within intimate partner violence. Having a more nuanced understanding of how strangulation impacts victim-survivors is imperative to tailoring support services to best meet their needs and this critical review concludes by highlighting key areas for future research.

Chapter 3: *Mindfulness and Eating Disorders: The Mediation Role of Dysmorphic Concerns*; by Nadia Barberis, Danilo Calaresi, Marco Cannavò, & Teresa Iona. Previous research suggests that mindfulness can improve body satisfaction and reduce problematic behaviors like body comparison, which is linked to dysmorphic concerns and eating disorders. This study aimed to explore whether mindfulness's impact on eating disorders is mediated by dysmorphic concerns. 288 individuals aged between 18 and 35 years old were recruited on social media and filled an online survey measuring mindfulness, dysmorphic concerns, and eating attitudes. Structural equation modeling was used to analyze the data. The hypothesized model showed good fit indices: $\chi 2(24) = 49.45$, $p = .002$; CFI = .99,

RMSEA = .06 (90% CI = .04 – .09), SRMR = .03. Significant paths were found from mindfulness to dysmorphic concerns (β = -.37) and from dysmorphic concerns to eating disorders (β = .51), but a non-significant path was found from mindfulness to eating disorders (β = -.04). However, the indirect relation of mindfulness with eating disorders through dysmorphic concerns was statistically significant (β = -.19). The findings suggest that lower mindfulness may increase susceptibility to dysmorphic concerns, highlighting the potential of mindfulness-based interventions to reduce dysmorphic concerns in eating-related psychopathologies.

Chapter 4: *The Relation Between Mood Disorder and Mental Health Consultations: The Role of Family and Friend Satisfaction*; by Madison Herrington, David Speed, & Lilly E. Both. The purpose of this study was to examine the role of social support from family and friends in seeking mental health consultations in people with and without a mood disorder. Data from the 2017/2018 Canadian Community Health Survey were analyzed from individuals aged 12 to 80+ years (N = 26,448). The results indicated that stress predicted the presence of a mood disorder, but this relation was not moderated by family or friend support. Moreover, having a mood disorder significantly increased the likelihood of mental health consultations. Interaction terms between mood disorder and family satisfaction and mood disorder and friend satisfaction were examined. The linear effect of family satisfaction and friend satisfaction on mental health consultations for individuals with a mood disorder was positive, albeit non-significant. In contrast, the linear effect of family satisfaction and friend satisfaction on mental health consultations for individuals without a mood disorder was negative. Thus, in the absence of a mood disorder, higher satisfaction with family and with friends is associated with lower mental health consultations. Further research should continue to investigate the influence of friend and family support on seeking mental health consultation in people with mood disorders.

Chapter 5: *Personality and Motivations of Maltese Clinical and Counselling Psychologists: The Darker Side*; by Greta Darmanin Kissaun & Gottfried Catania. The aim of the current study is to explore the personality traits and motivations of Maltese clinical and counselling psychologists, from the perspectives of their colleagues. Five clinical and five counselling psychologists were interviewed by means of the Repertory Grid Technique and data was analysed according to Repertory Grid procedures. Findings suggest that besides altruistic motives to pursue the profession, psychologists are also driven by "darker" motivators which have been under-researched so far. These include power, financial gain and the need for self-affirmation. Additionally, results underscore the existence of traits which could potentially interfere with the outcome of psychotherapy, such as unethical attitudes and behaviours, an inflated sense of self, and difficulties with empathy. These findings have pragmatic value in that they can inform reflective practice and render clinical and counselling psychologists aware of their less desirable personality traits and motivations for practicing the profession. This

could prove useful both when prospective psychologists are considering entry into the profession, and to inform the personal psychotherapy and supervision of existing psychologists. The results therefore have implications for the selection, training and supervision of clinical and counselling psychologists.

Chapter 6: *Defensive Styles of Coping and Attitudes Toward Eating in Women with Anorexia Nervosa, Bulimia Nervosa, Binge Eating, and in Women Without Eating Disorders Diagnosis*; Angelika Kleszczewska-Albińska. Eating disorders are tied with disturbed emotion regulation. Anorexia nervosa is connected with a tendency for emotion suppression, there is no homogeneous pattern of emotion regulation specific for bulimia nervosa, and no data on binge eating disorders. It is interesting to check whether patients suffering with various eating disorders differ in their tendency toward repression or sensitization. In the study 127 women, aged 18-69 participated. There were 61 persons without clinical diagnosis, 21 women with anorexia nervosa, 23 with bulimia nervosa, and 22 with binge eating disorder (all diagnosed by psychiatrists). Respondents filled in the Eating Disorder Inventory and Eating Attitudes Test. Results showed that for women without diagnosis low anxiety and repression were most popular, for anorexia nervosa repression was most frequent, for bulimia nervosa the most popular was high anxiety, for binge eating disorder low anxiety was the most frequent. The relations between type of disorder and defensive coping style were statistically significant. It was also proved that there were statistically significant differences between groups identified according to the coping style in their mean attitudes towards eating. It might be stated that repressors, high anxious, and sensitizers are more prone to having eating problems than low anxious persons.

Chapter 7: *The Aesthetic Experience of Dance in People Living with Psychotic Illness*; by Maja S. Vukadinović & Jelena Berklović. The chapter aims at exploring the structure of the aesthetic experience of dance performances by focusing on the differences between people with psychotic illness and control group. A pilot study included the individuals without a clinical diagnosis of mental illness, people diagnosed with schizophrenia spectrum disorder (clinically stable outpatients at the time of the research) and people with bipolar disorder currently in a manic episode and subjected to hospital treatment. As stimuli, Spanish dance (Sevillana) was presented in the form of a short live performance. Twelve unipolar seven-point scales covering three dimensions (Dynamism, Exceptionality and Affective Evaluation) were used to measure aesthetic experience. The results showed that there are no significant differences between these groups of participants in assessing the aesthetic experience of dance. However, within the subgroups of participants, different “aesthetic profiles” singled out. The “aesthetic profiles” of clinically stable participants with schizophrenia and the control group are not significantly different, unlike that of the participants diagnosed with bipolar disorder who were hospitalized due to a current manic episode. These results are discussed in the context of the stage of the participants’ mental illness. The methodological limitations of the study as well as perspectives for future research are elaborated.

Chapter 8: *The Fear of Coronavirus-19, Emigration Intentions and Adolescent Alcohol Consumption*; by Oľga Orosová, Beáta Gajdošová, Jozef Benka, & Viera Čurová. The aims of this study were to investigate (i) the relationship between pre-departure alcohol consumption and post-pandemic emigration intentions to study abroad among Slovak adolescents, (ii) the internal mechanism of the associations between the fear of Coronavirus-19 and the pre-departure health indicators related to the Coronavirus-19 pandemic measures in adolescents (emigration intentions and alcohol consumption). A cross-sectional survey design was used. A paper and pencil and online survey were carried out between October and November 2021 on a total sample of 296 adolescents from the eastern part of Slovakia (50.7% girls, M= 17.7 years). A higher level of post-pandemic study abroad intention was found among girls and adolescents who reported alcohol consumption. The data supported a long-way serial mediation (fear of Coronavirus-19 → self-efficacy → negative affect → emigration intentions → alcohol consumption). A direct negative effect of the fear of Coronavirus-19 on alcohol consumption was confirmed. This study contributes to the understanding of the pre-departure migration – health indicators relationship. Innovative school-based prevention programs would benefit from such knowledge and should incorporate supporting general self-efficacy, health-related behaviour and a healthy openness to new experience among adolescents before they leave their home countries.

Chapter 9: *The Effects of Cognitive Training Intervention on Quality of Sleep in Older Adults with Insomnia: A Systematic Review*; by Iris Haimov. The risk of both — reduction in sleep quality and cognitive decline — increases with advanced age, raising the question of whether cognitive training intervention could improve sleep quality in older adults with insomnia. The current study aims to characterize existing literature on the possible effects of cognitive training intervention on sleep quality in older adults with insomnia. Evidence suggests that among older adults with insomnia cognitive training intervention (either personalized or in a group) improved sleep quality. The possibility of improving the sleep quality of these patients with a non-pharmacological treatment is an encouraging new concept that requires in-depth testing.

Section 2, entitled "Educational Psychology", offers a range of research about teachers and students and the learning process, as well as the behavior from a psycho-educational standpoint.

Chapter 10: *Selected Internal Assets, Perceived External Resources of Resilience and Life Satisfaction*; by Lenka Abrinková, Oľga Orosová, & Viera Čurová. Perceived external resources (PER) of resilience along with internal assets (IA) are key factors in life satisfaction especially when facing adversity. The aim of this study is to investigate the mediating role of IA (self-control and self-esteem) and PER (support and meaningful participation within home, school, community, and

peers) between individual home adversity factors (conflict, antagonism and punishment with parents) and life satisfaction. 132 (53% female) early adolescents (mean age = 13.45; SD = 0.52) participated in the research. A parallel mediation model with multiple X-variables was used to analyze the data. The result regarding IA shows that the relationship between antagonism with parents and life satisfaction is mediated by self-control and self-esteem and the relationship between conflict with parents and life satisfaction is mediated by self-control. Regarding PER the mediation analysis showed an indirect effect of antagonism with parents on life satisfaction through home meaningful participation and school connectedness. In conclusion, antagonism and conflict with parents undermined IA and PER which led to a lower level of life satisfaction. Thus, home adversity effects broader social environment than expected and not only intervention in the home environment is recommended but also the promotion of other resilience factors.

Chapter 11: *The Impact of a Nature-Based Retreat on the Self-Care and Peer Support Intentions of Students Enrolled on Post Graduate Training in Educational and Child Psychology in Ireland: A Pilot Study*; by Therese Brophy. Time spent in nature is purported to impact positively on nature connection and psychological restoration. This paper reports on the impact of a nature-based retreat on the peer support and self-care intentions of a cohort of educational psychologists in training in Ireland. The nature-based retreat facilitated re-engagement of the group in a socially -distanced manner following Covid restrictions. The retreat took place at a location in the Mid-West of Ireland in early Autumn. The habitat included flora and fauna, a river, a pond, a woodland area and natural buildings. The retreat was comprised of individual, pair and group tasks, including nature connection activities. Following the retreat, participants (n=10) were invited to complete a survey on the impact of the retreat on their intentions with regard to self-care and peer support. Findings from the survey indicated that participants were positive about the experience of the group, nature-based retreat in terms of self-care and peer support prioritization and intentions. A conceptual framework for understanding nature-based self-care is proposed. Directions for future research are considered, particularly in the domains of professional training in educational psychology, self-care and peer support practices, and the potential of nature-based settings in other areas of EP practice.

Chapter 12: *Comparing Online and Virtual Reality Moral Dilemma Discussions: Focusing on Morality, Perspective-Taking, and Communication Skills*; by Aya Fujisawa. This study explored the educational effects of online and virtual reality moral dilemma discussions (OMDD and VRMDD, respectively) among university students. In Study 1, participants were randomly assigned to an OMDD or VRMDD condition, participating in both conditions in acquainted pairs. The acquainted pairs discussed Heinz's dilemmas (1) and (2). The Standards for Public Space (SPS) and Communication Skill (CS) scales were measured separately

before and after the experiment. Results revealed significant differences in the main effect of both conditions for the SPS subscales. Participants scored higher on the SPS egocentric and peer standards subscales in the pre-test than in the post-test, which had significant main effects at the time of the survey. OMDD and VRMDD practice showed decreased SPS subscale scores with a narrow social perspective (egocentric and peer standards) and were not related to the subscales with a wider social perspective (regional standards, care for others, and public values) and the CS scale. Similar to Study 1, VRMDD was conducted in the same manner in Study 2. SPS and the Interpersonal Reactivity Index scales were measured before and after the experiment. The results of Study 1 were replicated, and VR perspective-taking was confirmed.

Chapter 13: *What is the Relationship Between Creativity and Boredom?*; by Yusuke Yamazaki. The connection between creativity and boredom has received attention from researchers but with contradictory findings on whether boredom has a positive or negative influence on creative outcomes. To examine this issue, this study investigated how the state of boredom affects creative performance, assessing four dimensions of creativity: fluency, flexibility, originality, and elaboration. There were 25 participants, half of whom completed a boredom task before completing a creativity task. The results suggested that the influence of boredom on creativity varied depending on the dimension of creativity. The study highlights the importance of specifying dimensions of creativity and suggests that taking on tedious tasks may help individuals achieve more creative performance.

Chapter 14: *Development of Environmental Moral Judgment with Specific Teaching on Sustainable Development*; by Amélie Lesenecal & Annamaria Lammel. Research on the development of environmental moral judgment in children has been conducted in recent years (Hansla, Gamble, Juliusson, & Gärling, 2008; Persson, Sahlin, & Wallin, 2015). Kahn and colleagues (Kahn & Lourenço, 2002; Kahn & Peter, 2003; Kahn, Saunders, Severson., Myers & Gill, 2008) made an important contribution by identifying three types of environmental moral reasoning: homocentric, biocentric and isomorphic. Our study studies the influence of sustainable development education on the environmental moral reasoning of 1st and 2nd grade students. Our main hypothesis suggests that students exposed to specific education will have a bio-centered moral reasoning in relation to their peers. In this study, 116 participants were divided into two groups: one receiving a specific education on sustainable development (n = 60) and the other without teaching (n = 56). To assess the moral reasoning of children, we designed scenarios incorporating environmental elements. The student's T-tests revealed a predominant tendency to bio-centered reasoning among all participants. Children who did not receive targeted education found it very difficult to formulate moral judgments and reasoned responses to scenarios. These results highlight the crucial role of environmental education in providing additional cognitive tools essential to the development of their reasoning abilities.

Section 3, entitled "Social Psychology", gives a glance on projects from a psycho-social perspective.

Chapter 15: *Pink is for Girls, Blue is for Boys: Attitudes Towards Masculinity and Effeminacy in Men*; by Andrea Catania, Gottfried Catania, & Mary Anne Lauri. The idea that "boys will be boys" has been used an excuse for many behaviours, both by men and towards them. With the recent burst in attempts to bring back "masculine men" and the rise of the hegemonic norms most may wish were left in the 1920s, this study attempted to explore the attitudes towards masculine and effeminate men held by a sample of Maltese participants. Specifically, any associations between one's attitudes and their age, gender, and self-perception of their own gender were sought. The goal of the study was to determine which stereotypes about men are the most believed. Questions from the BSRI-12, the MRNI-SF, and the AFNS were used to construct an anonymous questionnaire. Hypotheses were tested using data obtained from 410 participants aged 18-78. It was found that older age groups endorse traditional attitudes more strongly than younger ones, and use more dated adjectives to describe masculinity. Additionally, men were found to have more traditional views than women. Participants who perceived themselves as having low femininity endorsed traditional attitudes more than those high in femininity. These findings highlight which groups need to be targeted to encourage changes in the way that men are perceived and consequently judged.

Chapter 16: *A Sustainable Model to Evaluate Training Impact in Healthcare*; by Sara Cervai & Gabriele Blasutig. The aim of this chapter is to introduce a sustainable model to evaluate the impact of training in the healthcare sector. Existing approaches in the literature tend to focus on quantitative methods. However, many of these tools and models are often deemed too complex and time-consuming, leading to their underutilization or improper use.To address these challenges, the TIE-H model (Training Impact Evaluation - Healthcare Model) offers a sustainable approach to evaluate training impact. The model is designed to be implemented within the organizational processes and standard procedures without external consultants. The model has been developed through a 4-year Action Research intervention in a large Italian healthcare organization. It was tested on over 350 training courses. One key feature of the model is that the process of evaluating training impact begins during the planning phase. This involves classifying each training based on three impact criteria, setting goals, identifying indicators, and determining the evaluation timeline. The TIE-H model not only provides a new process for evaluating training impact but has also demonstrated effectiveness by aligning the planning phase with the training objectives. This facilitates the identification of training result expectations and serves as a guiding framework for training planning.

Chapter 17: *The Role of Psychological Job Demands and Supervisor Support in Predicting Exhaustion - A Study Among Italian Funeral Directing During the Covid-19 Pandemic*; by Annalisa Grandi, Marco Rizzo, & Lara Colombo. During COVID-19, the exponential increase in the mortality made critical the working conditions of funeral directing services (FDS) workers as a greater number of funerals had to be handled. Few studies to date have examined the psychosocial conditions of FDS during the pandemic. The present study aimed to increase the knowledge about this phenomenon in Italy, investigating whether psychological job demands, and supervisor support could predict work-related exhaustion in a sample of Italian FDS workers during the pandemic. The sample consists of 142 FDS workers, 82.4% men, mean age 41.77 years (SD = 20.73), mean seniority 13.14 years (SD = 11.97). The hierarchical regression results showed that psychological job demands were positively related to exhaustion, whereas supervisor support was negatively related to exhaustion. Regarding differences between groups, older workers, women, senior workers, and on-call workers had higher scores on psychological job demands; regarding supervisor support, women reported higher scores; no significant differences were found regarding exhaustion. This study offers new insights into the factors related to the wellbeing of death care workers, one of the professions most concerned with coping with the impact of the COVID-19. It also confirms the importance of supervisor support during difficult times in the workplace.

Chapter 18: *Kidstime and Mindful Schools: Social Interventions for Children and Adolescents from Families Affected by Parental Mental Problems*; by Henner Spierling & Miguel Cárdenas. About one in five children lives with a parent with a mental illness. These children usually face many obstacles like stigma, social isolation and feelings of guilt. Many of them take a role as a young carer, thus taking over more responsibilities within and outside the family than they can really bear. The workshop will introduce children of parents with mental illness (COPMI) as a group and explain the impact of parental mental illness on children. We will provide examples of approaches that can help children in this situation, using the Kidstime Workshop model as a case study. We will describe the approaches of the Kidstime practice model and explain how a combination of family therapy and systemic therapy influences, together with drama, can create an effective multi-family therapy intervention. It will describe the impact of the Kidstime model and highlight the evidence in support of preventive approaches, as well as the barriers to securing investment for these interventions. The workshop also shows a concept of how to better address mental health in school context. In this way it supplies a generic approach to raise resilience within a whole school project. The workshop will conclude with recommendations for practice.

Section 4, entitled “Cognitive Experimental Psychology”, delivers chapters concerning, as the title indicates, studies and research in the area of behavior regarding cognitive aspects.

Chapter 19: *Visuospatial Processing in the Resolution of the Corsi Block-Tapping in Bilingual and Monolingual Children*; by Samira Bouayed, Annamaria Lammel, & Louise Goyet. Several studies (Grosjean, 2019) have shown that bilingualism provides an advantage in executive functions. Visuospatial Working Memory (vs WM) is a component of "working memory" responsible for the temporary storage and manipulation of visual and spatial information. The aim of this study is to identify and compare vs WM information processing strategies and to highlight different cognitive profiles between monolingual and bilingual children. The methodology of this research is situated within an experimental framework using the Corsi Block-Tapping Test (Corsi, 1972), which specifically assesses Visuospatial Working Memory. The test comprises two conditions: direct spatial memory and indirect spatial memory. In these tasks, the participant needs to tap the blocks shown by the experimenter in direct or indirect order. To gain a better understanding of the characteristics of the presumed cognitive functioning in Corsi Block-Tapping Test success, this study focused on analysing the nature of errors in the "direct" and "indirect" conditions of the Corsi Block-Tapping Test. This comprehensive error analysis allowed for a deeper exploration of how individuals approached Visuospatial Working Memory tasks and provided insights into their cognitive decision-making processes during the test.

Chapter 20: *States of Consciousness: Their Nature and Function*; by Shulamith Kreitler. The objective of the chapter is to clarify the nature and role of states of consciousness. The major tools are the constructs of consciousness, cognition and meaning and their interrelations. After clarifying the relations of consciousness with awareness and cognition, meaning is presented as the understructure of cognition. The next section deals with meaning – its definition, the meaning variables, its properties, its assessment, and the manifestations of meaning in the domains of cognition, personality and emotions. The following part is devoted to states of consciousness: their description, definition, properties, causes, their dependence on meaning-based relations, and their evocation as a function of enhancing the role of specific meaning variables. The potential contribution of states of consciousness for deepening an extending the control of action and experiencing of human beings are described.

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Prof. Dr. Clara Pracana
Portuguese Association of Psychoanalysis and Psychoanalytic Psychotherapy
Portugal

Prof. Dr. Michael Wang
Emeritus Professor of Clinical Psychology, University of Leicester
United Kingdom

CONTRIBUTORS

Editorial Advisory Board

Reviewers

Section 1
Clinical Psychology

Chapter #1

TRANSLATION, RELIABILITY, AND CONSTRUCT VALIDITY OF THE JAPANESE VERSION OF THE ATTITUDES TOWARD FORGIVENESS SCALE

Katsunori Sumi
Nagoya Institute of Technology, Japan

ABSTRACT
Although numerous forgiveness measures have been developed, only a few are useful for assessing the value of forgiveness. This study examined the reliability and construct validity of the Japanese translation (ATF-J) of the six-item Attitudes Toward Forgiveness Scale to assess individuals' value of forgiveness. The participants were 234 Japanese college students (39.3% women; mean age = 20.85 years, *SD* = 1.27) who completed the questionnaire on two occasions separated by four weeks. The one-factor structure of the ATF-J was confirmed through exploratory and confirmatory factor analysis. Internal consistency reliability (Cronbach's αs = .71 and .73) and test–retest reliability over a 4-week period (*r* = .61) were acceptable. Construct validity was supported by the expected correlations with scores for dispositional forgiveness of others, hedonic and eudaimonic well-being, psychological stress, trait empathy, and trait anger. However, contrary to expectations, no significant correlations were found between ATF-J scores and depression and anxiety symptom scores. Overall, these findings provide preliminary support for the reliability and construct validity of the ATF-J. Therefore, the ATF-J is a useful tool for assessing the value of forgiveness in the Japanese population.

Keywords: value of forgiveness, pro-forgiveness attitudes, measure, Japanese version, reliability, construct validity.

1. INTRODUCTION

1.1. Definitions of Forgiveness

Forgiveness has attracted considerable attention from researchers as an unquestionably important socially functional process (Thompson & Snyder, 2019; Tsang & Martin, 2021). Research on forgiveness has progressed over the past few decades. A substantial body of literature supports the relationship between forgiveness, health, and well-being (Gao, Li, & Bai, 2022; Lee & Enright, 2019; Webb & Toussaint, 2020). Although previous studies on forgiveness have yielded many interesting and beneficial results, they have proposed different definitions of forgiveness (McCullough & Root, 2005; Thompson & Snyder, 2019; Worthington, 2020). Moreover, issues with the definition of forgiveness were identified. For instance, is forgiveness primarily intrapersonal or interpersonal, and what changes when a person forgives? (Worthington, 2020) Within this context, most scholars admit that forgiveness refers to intrapersonal and prosocial changes in thoughts, emotions, motivations, or behaviors (McCullough & Root, 2005; Tsang & Martin, 2021; Worthington, 2020). Forgiveness is commonly recognized as being distinct from pardoning, condoning, excusing, denying, forgetting, reconciling, and justifying (Thompson & Snyder, 2019; Tsang & Martin, 2021; Worthington, 2020).

A possible contributor to problems with this definition is the complex and multifaceted nature of forgiveness, as an intrapersonal experience occurring in an interpersonal context (Worthington, 2020). Forgiveness has been understood and researched from various perspectives (Thompson & Snyder, 2019; Tsang & Martin, 2021; Webb & Toussaint, 2020; Worthington, 2020), including stability (i.e., trait or disposition, and state or situation), targets (e.g., self, others, out-group, situation, and the sacred), and methods (e.g., offering, seeking, feeling, and valuing).

1.2. Measures of Forgiveness

Researchers have developed various measures corresponding to different definitions and perspectives of forgiveness. Forgiveness measures have increased in recent years (Fernández-Capo, Fernández, Sanfeliu, Benito, & Worthington, 2017; McElroy-Heltzel, Davis, Ordaz, Griffin, & Hook, 2020; Thompson & Snyder, 2019). Various instruments of forgiveness include non-self-report measures intended to assess behavioral, physiological, and chemical aspects (Thompson & Snyder, 2019; Worthington et al., 2015). Implicit measures have also been developed and are widely used (Thompson & Snyder, 2019). Compared to these types of measures, considerable forgiveness research has used self-report measures (Thompson & Snyder, 2019; Tsang & Martin, 2021). Among the various aspects and perspectives of forgiveness, forgiveness of others has been studied most frequently (Webb & Toussaint, 2020). Most self-report measures are designed to assess an individual's tendency to forgive others (Thompson et al., 2005). Therefore, self-report measures for the dispositional forgiveness of others have been used more frequently in forgiveness research. This type of measure includes the most widely used instrument, the Heartland Forgiveness Scale (Thompson et al., 2005), which has three subscales for assessing dispositional forgivingness toward the self, situation, and others. The Tendency to Forgive Scale (Brown, 2003) is another well-known self-report measure of the dispositional forgiveness of others.

1.3. Attitudes Toward Forgiveness Scale

Among the measures of various aspects of forgiveness, the Attitudes Toward Forgiveness Scale (ATF; Brown, 2003) is used to assess individuals' values of forgiveness, such as pro-forgiveness attitudes (Brown & Phillips, 2005). The ATF is a brief six-item self-report measure designed to assess the extent to which individuals value forgiveness, independent of whether they practice forgiveness (Brown, 2003). Items composing the ATF measure the attitudinal aspect of forgiveness, not the experiential or behavioral aspects (e.g., "I believe forgiveness is a moral virtue"), and are rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*), including three reverse-scored items. Total ATF scores range from 7 to 42, with higher scores reflecting a greater value of forgiveness. There have been several translations of the ATF into various languages, including Polish (Zarzycka, 2019), Chinese (Zheng et al., 2021), Urdu (Javed, Kausar, & Khan, 2014), and Russian (Kononova & Pugovkina, 2018).

The psychometric properties of the ATF were also supported (Brown, 2003; Brown & Phillips, 2005). The internal consistency reliability (Cronbach's αs = .61 to .71: Barnes, Carvallo, Brown, & Osterman, 2010; Brown, 2003; Brown & Phillips, 2005) was not high, but acceptable (DeVellis & Thorpe, 2021; Nunnally & Bernstein, 1994; Streiner, Norman, & Cairney, 2015). Convergent validity was confirmed by significant correlations with scores for dispositional forgiveness of others measured using Brown's (2003) Tendency to Forgive Scale and Berry, Worthington, Parrott, O'Connor, and Wade's (2001) Transgression Narrative Test of Forgivingness, scores for state forgiveness of the offense measured using Brown and Phillips' (2005) State Forgiveness Scale, and scores for vengeance attitudes and

behaviors measured using Stuckless and Goranson's (1992) Vengeance Scale (Brown, 2003; Brown & Phillips, 2005). These correlations also indicate a distinction between the constructs measured by the ATF and others (Brown, 2003). The construct validity was also supported by significant correlations with life satisfaction, self-esteem, depression, and trait anger (Barnes et al., 2010; Brown, 2003; Brown & Phillips, 2005).

1.4. Purpose of the Study

The purpose of this study was to evaluate the preliminary reliability and construct validity of the ATF translated into Japanese (ATF-J) to create a Japanese version of the ATF. The empirical knowledge of forgiveness among Japanese people is currently insufficient. There is a need for a Japanese version of the ATF as a brief and efficient measure of the value of forgiveness, which would contribute to clarifying cross-cultural differences in forgiveness (Hanke & Vauclair, 2016; Ho & Worthington Jr., 2020; Karremans et al., 2011).

The generated ATF-J used a back-translation process, and was examined for dimensionality, internal consistency reliability, and test–retest reliability. A one-factor structure of the ATF was expected because the ATF scores were calculated by summing all items, including the three reverse-scored items (Brown, 2003). The time interval for test–retest reliability was set at four weeks, which was the same as the time interval for test–retest reliability of the Japanese version of the Tendency to Forgive Scale (Sumi, 2022). A higher test–retest reliability over shorter retest intervals was hypothesized because the ATF assesses individuals' valuable attitudes toward forgiving others.

Construct validity was assessed by examining the correlations between scores on the measures of related constructs. The related constructs were selected based on previous results from American samples, because in a Japanese sample, similar to American samples, scores on the Tendency to Forgive Scale (Brown, 2003) were correlated with scores on the related construct measures, including life satisfaction and trait empathy scales (Sumi, 2022). Based on previous findings (Barnes et al., 2010; Brown, 2003; Brown & Phillips, 2005), ATF-J scores would be significantly, but not highly, correlated with scores for dispositional forgiveness of others as a related but distinguishable construct from valuing forgiveness. A related construct is well-being, for which a close relationship with forgiveness has been supported (Tsang & Martin, 2021; Webb & Toussaint, 2020). According to the theoretical traditions (Deci & Ryan 2008; Ryan & Deci 2001), well-being can be divided into two dimensions: hedonic and eudaimonic. Hedonic well-being comprises three components: life satisfaction, positive affect, and negative affect. These dimensions and components of well-being were expected to be weakly but significantly correlated with the value of forgiveness. Furthermore, based on previous studies on the ATF (Barnes et al., 2010; Brown, 2003; Brown & Phillips, 2005), trait forgiveness (Fernández-Capo et al., 2017), and general forgiveness (Riek & Mania, 2012; Tsang & Martin, 2021), ATF-J scores should be weakly and negatively correlated with scores for psychological stress, depression and anxiety symptoms, and trait anger, and weakly and positively correlated with scores for trait empathy. The hypothesized correlations for construct validity indicated the convergence of the ATF-J and other measures. Moreover, the correlations would support discrimination between the ATF-J and other measures because they would not be high enough to show construct redundancy between them.

2. METHOD

2.1. Participants

The study participants were 234 students from two colleges in Japan, comprising 92 women and 142 men, with a mean age of 20.75 years (*SD* = 1.27, range = 19 to 28 years). A total of 243 students were initially invited to participate. No data were missing. After clarifying the purpose of this study, anonymity and confidentiality were explained, and all participants agreed to voluntarily participate in two test sessions with a 4-week interval between the sessions (Times 1 and 2) and complete the measures. Participants responded to all questionnaires at Time 1 and completed only the ATF-J at Time 2. Ethical approval for this study was obtained from the relevant ethics committee.

2.2. Measures

(1) Japanese translation of the ATF

The original English version of the ATF was translated into Japanese after obtaining permission from Dr. Ryan P. Brown (personal communication, March 30, 2022) who developed the ATF. The translation process was in accordance with the translation and back-translation procedures based on several guidelines (e.g., Beaton, Bombardier, Guillemin, & Ferraz, 2000; Brislin, 1986; Sousa & Rojjanasrirat, 2011). The original ATF was translated into Japanese by a bilingual professor, and back-translated into English by another bilingual professor. Subsequently, two researchers compared the translation with the back-translation in detail. This procedure was repeated until acceptable consistency was achieved between the translation and back-translation. The translation was slightly modified and confirmed by the two professors based on comments on the final translation of this procedure from five graduate and undergraduate students. The items of the Japanese translation were rated using the same 7-point scale as the original ATF.

(2) Dispositional forgiveness of others

Dispositional forgiveness of others was measured using the Japanese version of the Tendency to Forgive Scale (Brown, 2003; Sumi, 2022). The scale consists of four items (e.g., “I tend to get over it quickly when someone hurts my feelings”) that tap into the tendency to forgive others’ offenses. While the ATF is composed of items that refer to pro-forgiveness attitudes, the Tendency to Forgive Scale assesses the experiential or behavioral aspects of forgiveness. The response scale is a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Higher scores indicate greater dispositional forgiveness of others. The Japanese version exhibited adequate internal consistency reliability (Cronbach’s αs = .73 and .75), test–retest reliability over a 4-week period (r = .76), factorial validity of the single-factor structure, and construct validity evidenced by correlations with scores on measures of well-being, self-esteem, depression and anxiety symptoms, trait empathy, and trait anger (Sumi, 2022).

(3) Life satisfaction

Life satisfaction, a component of hedonic well-being, was assessed using the Japanese version of the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Sumi, 2020). This scale consists of five items (e.g., “I am satisfied with my life”) rated on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores indicate greater life satisfaction. The Japanese version showed good internal consistency reliability (Cronbach’s αs = .78 and .82), test–retest reliability over a 4-week interval (r = .73), factorial validity of the single factor structure, and construct validity through expected correlations with scores on positive affect, negative affect, and eudaimonic well-being measures (Sumi, 2020).

(4) Positive affect and negative affect

The Japanese version of the Scale of Positive and Negative Experience (Diener et al., 2010; Sumi, 2013, 2014) was used to measure recent experiences of positive and negative affect. This scale contains 2 six-item subscales, the positive and negative affect scales, which are formed by a list of six adjectives (e.g., happy and sad, respectively). Responses to the items were given on a 5-point Likert scale ranging from 1 (*very rarely or never*) to 5 (*very often or always*). Higher scores on the subscales reflect more frequent experiences of positive and negative affect. The Japanese versions of the subscales had good internal consistency reliability (Cronbach's αs = .86 to .93), test–retest reliability over a 1-month interval (*r*s = .60 and .57), factorial validity of the separate factor structure, and construct validity supported by correlations with scores for positive and negative feelings, life satisfaction, subjective happiness, dispositional optimism and pessimism, perceived stress, and depression and anxiety symptoms (Sumi, 2013, 2014).

(5) Eudaimonic well-being

Eudaimonic well-being was assessed using the Japanese version of the Flourishing Scale (Diener et al., 2010; Sumi, 2013, 2014). This scale consists of eight items about broad and important aspects of psychological functioning (e.g., "I am a good person and live a good life"). A 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) was used to rate each item. Higher scores indicate greater eudaimonic well-being. The Japanese version had good internal consistency reliability (Cronbach's αs = .94 to .95) and test–retest reliability over a 1-month interval (*r* = .87), unidimensionality, and construct validity based on correlations with scores on measures of positive and negative feelings, life satisfaction, subjective happiness, dispositional optimism and pessimism, perceived stress, and depression and anxiety symptoms (Sumi, 2013, 2014).

(6) Psychological stress

To assess psychological stress, the present study was used the Japanese version of the 10-item form of the Perceived Stress Scale (Cohen, Kamarack, & Mermelstein, 1983; Cohen & Williamson, 1988; Sumi, 2007). This scale consists of items that measure the perception of psychological stress over the past month (e.g., "In the last month, how often have you felt that you were on top of things?"). Four negatively worded items are reverse scored, while the remaining items are positively worded. All items are rated on a 5-point Likert scale ranging from 0 (*never*) to 4 (*very often*). Higher scores indicate greater psychological stress. Similar the original measure, the Japanese version showed a two-factor solution in which positively worded items loaded on one factor and negatively worded items loaded on the other factor (Sumi, 2007). In addition, this version had acceptable internal consistency reliability (Cronbach's α = .71) and test–retest reliability over a 3-week interval (*r* = .72). The discriminant and predictive validity of this version was supported through expected correlations with scores on measures of daily hassles, depression, anxiety, and psychosomatic symptoms using longitudinal data over a 3-week period (Sumi, 2007).

(7) Depression and anxiety symptoms

Depression and anxiety symptoms were assessed using the Japanese versions of the two subscales of the Hopkins Symptom Checklist (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974; Sumi, 1997). The depression and anxiety subscales comprise 11 items (e.g., "Feeling no interest in things") and seven items (e.g., "Feeling tense or keyed up"), respectively. Both subscales assess the frequency of symptoms during the past seven days on a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). Higher scores indicate more severe symptoms. The Japanese version of the depression and anxiety subscales showed adequate internal consistency reliability (Cronbach's α = .84 for both), test–retest reliability over a 4-week interval (*r*s = .83 and .75, respectively), factorial validity of the separate factor

structure, and positive and moderate correlations with scores for perceived stress supporting construct validity (Sumi, 1997, 2007, 2022).

(8) Trait empathy

Because personality disposition is closely related to forgiveness, trait empathy was measured using a Japanese scale to assess dispositional affective empathy (Hatanaka, 2003). This scale comprises 10 items (e.g., "I sympathize easily with others" in Japanese) that were scored on a 5-point Likert scale ranging from 1 (*disagree*) to 5 (*agree*), with eight reverse-scored items. Higher scores indicated greater trait empathy. Good internal consistency reliability (Cronbach's $\alpha = .83$) and unidimensionality were observed (Hatanaka, 2003).

(9) Trait anger

Trait anger was measured using the Japanese version of the Trait Anger Scale (Spielberger, 1996; Suzuki & Haruki, 1994). This 10-item scale assesses the dispositional tendency to experience anger (e.g., "I am a hotheaded person"). The items in the Japanese version are scored on a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Higher scores indicate greater trait anger. The Japanese version showed good internal consistency reliability (Cronbach's $\alpha = .84$) and unidimensionality for construct validity (Suzuki & Haruki, 1994).

2.3. Data Analysis

First, the unidimensionality of the ATF-J was examined using a factor analysis of the data at Times 1 and 2. For the analysis, participants were randomly and equally divided into two subsamples. After an exploratory factor analysis using principal axis factoring was conducted on the data from one sample, a confirmatory factor analysis was performed on the data from the other sample. Second, to evaluate reliability, Cronbach's α and test–retest correlations were calculated. Finally, construct validity was assessed by examining the correlations between scores on the ATF-J and other measures.

3. RESULTS

3.1. Factor Structure

To perform factor analysis of the ATF-J, participants were randomly and equally divided into two groups (*n*s = 117): Samples A and B. There was no significant difference between the groups with respect to sex, $\chi^2(1, N = 234) = 1.05$, *ns*, and age, $t(232) = .15$, *ns*. Exploratory factor analysis using principal component analysis was conducted on Sample A at Times 1 and 2. Bartlett's tests of sphericity were 180.74 and 318.42 (*p*s < .001), and the Kaiser-Meyer-Olkin measures of sampling adequacy were .68 and .77 for Times 1 and 2, respectively. These findings indicated that the collected data were appropriate for factor analysis.

As expected, exploratory factor analysis extracted one factor with an eigenvalue greater than 1.00 at both Times 1 and 2. The eigenvalues of the first two factors were 2.78 and 0.89 at Time 1, and 2.98 and 0.91 at Time 2. The one-factor solution accounted for 46.83% and 49.60% of the total variance at Times 1 and 2, respectively. The absolute values of the factor loadings were more than .41 for all items (Table 1).

To confirm the one-factor solution of the ATF-J, confirmatory factor analyses were performed on Sample 2 at Times 1 and 2. The goodness-of-fit indices indicated a satisfactory fit between the one-factor model and the data (Table 2). Table 1 shows the standardized factor loadings from the confirmatory factor analysis. Absolute values of the factor loadings were all significant (*p*s < .01) and greater than .32.

3.2. Reliability

The means, standard deviations, range of scores, Cronbach's αs, and test–retest correlations for the ATF-J at Times 1 and 2 are presented in Table 3. A small statistical difference was observed between Times 1 and 2. There was acceptable Cronbach's αs (.71 and .73) and a high test–retest correlation (r = .61).

Table 1.
Factor Loadings for Exploratory and Confirmatory Factor Analysis.

Item	Exploratory Factor Analysis of Sample A		Confirmatory Factor Analysis of Sample B	
	Time 1	Time 2	Time 1	Time 2
1	.77	.80	.84	.52
2	-.44	-.65	-.32	-.86
3	.80	.73	.87	.61
4	-.41	-.69	-.32	-.54
5	-.48	-.49	-.40	-.72
6	.54	.69	.48	.54

Note. Items 2, 4, and 5 are reverse-scored items. Standardized factor loadings are shown for confirmatory factor analyses. All standardized factor loadings are significant at $p < .001$.

Table 2.
Goodness-of-Fit Indices for Sample 2 at Times 1 and 2.

	χ^2	df	GFI	AGFI	NFI	CFI	RMSEA	SRMR
Time 1	7.42	9	.98	.93	.96	.99	.05	.03
Time 2	8.64	9	.98	.93	.96	.99	.05	.04

Table 3.
Means, Standard Deviations, Ranges, Cronbach's αs, and Test–Retest Correlations.

	M	*SD*	Range	Cronbach's α	Test-retest *r*	95% CI
Time 1	27.51	4.91	9–41	.71	.61**	[.52, .68]
Time 2	28.05	5.37	8–42	.73		

** $p < .01$.

3.3. Construct Validity

Table 4 shows the correlations between scores on the ATF-J and other measures at Time 1. Most correlations were in the expected direction and magnitude, supporting construct validity. The ATF-J scores showed a weak but significant correlation with scores on the Tendency to Forgive Scale (r = .24). There were also weak correlations between scores on the ATF-J and measures of hedonic and eudaimonic well-being: the Satisfaction with Life Scale (r = .23), Positive Affect Scale (r = .25), Negative Affect Scale (r = -.17), and Flourishing Scale (r = .28). Although scores on the Perceived Stress Scale were significantly correlated with ATF-J scores, scores on the Depression and Anxiety Scales did not show significant correlations with ATF-J scores. In addition, ATF-J scores were moderately correlated with scores on the Trait Empathy Scale (r = .41) and weakly correlated with scores on the Trait Anger Scale (r = -.22). Therefore, the scores on the Depression and Anxiety Scales did not show the expected correlations.

Table 4.
Correlations between Scores on the TTF-J and Other Measures at Time 1.

Measure	*r*	95% CI	*M*	*SD*	Cronbach's α
Tendency to Forgive Scale	.24**	[.11, .36]	14.44	4.25	.72
Satisfaction with Life Scale	.23**	[.10, .34]	18.99	5.94	.81
Positive Affect Scale	.25**	[.13, .37]	21.12	4.06	.93
Negative Affect Scale	-.17**	[-.29, -.04]	17.64	4.84	.83
Flourishing Scale	.28*	[.16, .40]	35.67	5.82	.80
Perceived Stress Scale	-.16*	[-.26, -.01]	22.13	5.13	.74
Depression Scale	-.10	[-.22, .03]	26.19	8.19	.89
Anxiety Scale	-.13	[-.27, -.02]	13.98	4.94	.82
Trait Empathy Scale	.41**	[.30, .51]	33.96	6.52	.81
Trait Anger Scale	-.22**	[-.34, -.09]	22.14	5.42	.85

* $p < .05$. ** $p < .01$.

4. DISCUSSION

This study aimed to develop a Japanese version of the ATF, a self-report measure for assessing individuals' value of forgiveness. Accordingly, in this study, the original ATF was translated into Japanese, and the translation was tested for reliability and construct validity using data from Japanese college students. The results support the preliminary reliability and construct validity of the ATF-J.

The data supported the hypothesized one-factor structure. Exploratory factor analysis revealed that all items loaded on one factor accounted for a substantial portion of the total variance. A confirmatory factor analysis confirmed this one-factor solution. Moreover, the one-factor structure of the ATF-J was maintained even after four weeks. These results led to the conclusion that the ATF-J is a single-factor measure.

Internal consistency reliability of the ATF-J was acceptable based on Cronbach's αs (DeVellis & Thorpe, 2021; Nunnally & Bernstein, 1994). The Cronbach's αs of the ATF-J seem to be slightly better than those of the original ATF (Barnes et al., 2010; Brown, 2003; Brown & Phillips, 2005). The test–retest correlation between the ATF-J scores at Times 1 and 2 was high. This correlation was lower ($p < .01$) than the test–retest correlation during the 4-week period ($r = .76$; Sumi, 2022) of the Japanese version of the Tendency to Forgive Scale (Brown, 2003; Sumi, 2022), which measures dispositional forgiveness. The measure of the value of forgiveness may have weaker temporal stability than the dispositional forgiveness measure.

The weak correlation with scores on the Tendency to Forgive Scale confirmed the hypothesis that pro-forgiveness attitudes are related to but distinct from the dispositional forgiveness of others. Furthermore, correlations with scores for hedonic well-being, eudaimonic well-being, psychological stress, and trait anger supported the construct validity of the ATF-J.

However, no significant correlations were found between scores on the ATF-J, Depression Scale, and Anxiety Scale, contrary to the hypotheses based on previous studies. A previous study reported no significant correlation between scores on the ATF and depression symptoms measure (Brown, 2003). It was also reported that scores for depression symptoms were more weakly correlated with the ATF scores ($r = -.15$) than scores for dispositional forgiveness (Brown & Phillips, 2005). Considering these findings, compared with the experiential or behavioral aspects of forgiveness, pro-forgiveness attitudes might only be weakly related to mental symptoms. Moreover, the correlation between scores on the

ATF-J and the Trait Empathy Scale seems to be slightly greater than the correlation hypothesized based on the results of previous studies on the forgiveness of others (Riek & Mania, 2012). The value of forgiveness might be more strongly related to trait empathy than the forgiveness of others. Moreover, the relationships between valuing forgiveness, depression symptoms, anxiety symptoms, and trait empathy might characterize Japanese people. However, this hypothesis needs to be tested in future studies.

Although this study provided a new Japanese version of a useful instrument for assessing pro-forgiveness attitudes, several limitations should be noted. The first limitation is the use of a college sample. Therefore, caution should be exercised when generalizing the present findings to other populations. Future studies should use other populations such as workers and older adults. Second, the time interval to assess test–retest reliability was only four weeks. Therefore, it is necessary to confirm the temporal stability of the ATF-J at longer intervals. The third limitation is the assessment of construct validity through the expected relationships with other constructs. Future studies should examine other types of validity, including predictive and concurrent validity. Despite these limitations, this study provides a useful measure for assessing the value of forgiveness with adequate reliability and construct validity for Japanese speakers. The ATF-J is expected to contribute to future research on forgiveness in the Japanese population.

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AUTHOR INFORMATION

Full name: Katsunori Sumi
Institutional affiliation: Nagoya Institute of Technology
Institutional address: Gokiso, Showa, Nagoya, Aichi, Japan
Email address: sumi@nitech.ac.jp
Short biographical sketch: Katsunori Sumi is a Professor of the Graduate School of Engineering at Nagoya Institute of Technology (Japan) from 2007. He received his Ph.D. from Nagoya Institute of Technology. He teaches behavioral science, applied psychology, and organizational behavior. He is currently engaged in the research on well-being, character strengths, academic motivation, and interest. ORCID iD: 0000-0002-6395-1650. ResearchGate: https://www.researchgate.net/profile/Katsunori-Sumi.

Chapter #2

SURVIVING STRANGULATION: A CRITICAL LITERATURE REVIEW OF THE CONSEQUENCES FROM A PSYCHOLOGICAL PERSPECTIVE

Emma de Lautour, Richard Fletcher[1], Darrin Hodgetts[2], & Robyn Vertongen
Massey University, New Zealand
[1]Associate Professor
[2]Professor

ABSTRACT
This critical review examines the literature on strangulation in the context of intimate partner violence, discussing in particular the neuropsychological and psychological consequences that have been associated with strangulation. Neuropsychological outcomes of strangulation have been predominantly derived from medical or forensic data and detail loss of consciousness, headaches, dizziness and memory loss as common consequences. Yet to be explored is the compounding effect of multiple instances of strangulation may have neuropsychologically, despite this being thought as a common experience to victim-survivors who have disclosed being strangled. PTSD and depression have been noted by researchers as a likely consequence of strangulation, however, the psychological consequences beyond diagnostic criteria are an area for further exploration. While informative, existing research has not yet examined how these consequences impact victim-survivors of strangulation within intimate partner violence. Having a more nuanced understanding of how strangulation impacts victim-survivors is imperative to tailoring support services to best meet their needs and this critical review concludes by highlighting key areas for future research.

Keywords: strangulation, intimate partner violence.

1. INTRODUCTION

Strangulation is an extreme form of violence that causes serious injury and, sometimes, death. Strangulation, as conceptualised by Pritchard, Reckdenwald, & Nordham (2017), "is the external compression of a person's neck and/or upper torso in a manner that inhibits that person's airway or the flow of blood into or out of the head" (p. 410). Not all incidents of strangulation are fatal, with the focus of this chapter being on instances of non-fatal strangulation specifically within intimate partner violence (IPV).

Strangulation in the context of IPV is thought to occur within a pattern of escalating violence, as opposed to an isolated incident (Brady, Fansher, & Zedaker , 2022; Shields, Corey, Weakley-Jones, & Stewart , 2010; Strack, McClane, & Hawley, 2001; Wilbur et al., 2001). This stance is supported by studies using police data commonly identifying a history of IPV occurring before the reported strangulation (Shields et al., 2010) and descriptive statistics suggesting the average duration of relationships prior to strangulation occurring being approximately 3 - 4 years (Strack et al., 2001; Wilbur et al., 2001). Locating strangulation within IPV as part of an escalating pattern of violence is consistent with IPV in general, in which typically the frequency and severity of violence increases as the relationship continues (Brady et al., 2022).

Before the seminal study of 300 cases of strangulation in San Diego conducted by Strack, McClane and Hawley (Strack et al., 2001; McClane, Strack, & Hawley, 2001; Hawley, McClane, & Strack, 2001), there was little academic attention in this area, with existing research predominantly including strangulation within more general studies of traumatic brain injury (Monahan et al., 2022; Patch, Anderson, & Campbell, 2018; Pritchard, Reckdenwald, Nordham, & Holton, 2018). Pritchard et al. (2017) argue that as a result, knowledge embedded within specialist family violence services about the impacts of strangulation on victim-survivors has so far outpaced academic research on this topic. Pritchard et al. (2017), among others, have called for the need for further research on this topic, particularly in light of the unique interaction of physical, neuropsychological and psychological harm produced through traumatic experiences that strangulation can cause.

This chapter provides a critical review of the existing literature on strangulation within the context of IPV, examining from a psychological perspective the impact strangulation may have on a victim survivor. Due to the nature of the topic having both medical and forensic repercussions, transdisciplinary literature was sought using various databases including; Google Scholar, PubMed, PsychINFO, ScienceDirect, Proquest and Connected Papers. Keywords to describe strangulation within IPV – "strangulation", "non-fatal strangulation", "choking", "throttling", "domestic violence", "family violence" and "intimate partner violence" – were used in the search. Consistent with systematic reviews on this topic (Bichard, Byrne, Saville, & Coetzer , 2022; Monahan et al., 2022; Pritchard et al., 2017), 30 studies were identified and the resulting literature was read, summarised using an Excel table. Literature was then manually annotated in NVivo to synthesize key findings and patterns, which reflect the key sections of this chapter. Literature which examined strangulation in the context of IPV was included, however as a critical literature review, wider literature was included and explicitly discussed as a result of gaps in current research.

This critical review of literature aims to present a balanced view of what is currently understood to be the consequences of strangulation within IPV, extending beyond current literature by considering how the neuropsychological and psychological consequences may impact individual victim survivors within their contexts. The next section offers further background details for the chapter such as descriptive statistics, followed by an exploration of the mechanisims of strangulation and why this is distinct from other IPV-related injuries. This is followed by an exploration of previous studies exploring the neuropsychological consequences of strangulation. Following is a focus on research into the psychological consequences of strangulation, highlighting, in particular, the need for research that extends beyond diagnostic criteria. The chapter is complete with consideration of future research directions and concludes that while existing research evidences the harm that can be caused by strangulation, there is a gap in understanding how this may potentially impact victim-survivors.

2. BACKGROUND

Intimate partner violence, as defined by the World Health Organization (WHO; 2005), is physical and non-physical acts of violence used by a current or former intimate partner, irrespective of relationship duration or marital status. Operationalising this definition, the WHO (2021) undertook the immense task of estimating the prevalence of IPV experienced by women globally. Systematic analysis of prevalence data across 161 countries over 18 years suggest the global lifetime prevalence of ever-partnered women experiencing physical or sexual IPV is 27%. However, "the iceberg-like nature of family violence"

(Gabbe et al., 2018, p. 3) means the vast amount of violence remains unreported or unseen, making prevalence estimates remarkably difficult.

Similar challenges are faced when attempting to estimate the prevalence of strangulation within IPV. Wilbur et al. (2001) found that 42 of the 62 victim-survivors surveyed in a family violence shelter reported having experienced strangulation. Further attempts at estimating the prevalence of strangulation have since occurred using vastly different sample sizes, populations and methods – therefore producing varying results (McQuown et al., 2016; Messing, Patch, Wilson, Kelen, & Campbell, 2018; White, Martin, Schofield, & Majeed-Ariss, 2021). Sorenson, Joshi, and Sivitz's (2014) systematic review of the epidemiology of strangulation attempts to make sense of these varying results, estimating the lifetime prevalence as between 3% - 9.7%. However, Sorenson and colleagues highlight (2014) that these results are derived from 11 studies representing 9 countries that are predominantly located in North America or Europe, thus lacking low to middle-income regions of the world that historically report higher rates of IPV as a whole. Furthermore, this estimate of prevalence also faces the same challenges of prevalence estimates as wider family violence, suggesting that the reported numbers are conservative at best.

Recent studies using police data provide demographic information on strangulation within IPV. Wilson, Spike, Karystianis, and Butler (2021) analysed 6,955 Australian-based police records of IPV-related strangulation finding 91.7% of reports noting the perpetrator as male and the victim-survivor as the female, female perpetrator and male victim-survivor in 4.7% of reports, male same-sex couples in 2.5% and female same-sex in 1.1% of cases. Analysing American-based police reports of IPV-related strangulation Messing, Thomas, Ward-Lasher, and Brewer (2021) report similar demographic distribution across different-sex couples, female same-sex and male same-sex couples. However Messing et al. (2021) do not distinguish between male and female perpetrators in the different sex statistics – an area for future research. These findings echo earlier work by Strack et al. (2001) who found 99% of victims were female, with one case of female-to-male and one case of female-to-female recorded out of 300. These findings suggest that strangulation occurs predominantly in heterosexual relationships, where women are predominantly the victims and men are the perpetrators.

Other researchers have reported on the diverse range of precipitating events to strangulation, including; emotionally charged arguments, underlying relationship stressors, jealousy, accusations of infidelity, the victim-survivor attempting to end the relationship, substance and alcohol misuse, and the victim-survivor's perceived non-compliance (Bendlin & Sheridan, 2019; Brady et al., 2022; Nemeth, Bonomi, Lee, & Ludwin, 2012; Reckdenwald, Fernandez & Mandes, 2019; Thomas, Joshi, & Sorenson, 2014; Wilbur et al., 2001; Wilson et al., 2021). Notably, as described by Thomas et al. (2014), 'mundane demands', such as dinner not being ready or buying the wrong brand of cigarettes, were also described as catalysts for the perpetrator to strangle the research participants. It is unsettling to see seemingly mundane demands described as catalysts for the perpetrators to inflict such serious violence, particularly given the significant impact strangulation can have on a victim survivor. While these studies begin to describe the occurrence of strangulation within IPV, the larger part of the academic focus has been on the consequences strangulation may have.

3. THE CONSEQUENCES OF STRANGULATION

Table 1.
Reported impairments and injuries following strangulation.

Physical			
abrasions (Joshi et al. 2018; Strack et al. 2001)	contusions (Strack et al. 2001)	coughing up blood (Wilkes 2023)	bradykinesia (Miao et al. 2009)
nausea (De Boos 2019; Ralston et al. 2019; Strack et al. 2001; Wilkes 2023)	dysarthria (Joshi et al. 2018; Malek et al. 2000; Miao et al. 2009; Pritchard et al. 2018; Ralston et al. 2019; Shields et al., 2010)	hyperreflexia (Milligan & Anderson 1980)	Horner's syndrome (Milligan & Anderson 1980)
pain (Funk & Schuppel 2003; Joshi et al. 2012; Ralston et al. 2019; Smith et al. 2001; Strack et al. 2001; Thomas et al. 2014; Wilbur et al. 2001; Wilkes 2023; Zilkens et al. 2016)	dysphagia (De Boos 2019; Funk & Schuppel 2003; Joshi et al. 2012; Malek et al. 2000; McQuown et al. 2016; Milligan & Anderson 1980; Pritchard et al. 2018; Shields et al. 2010; Strack et al. 2001; Wilbur et al. 2001; Zilkens et al. 2016)	resting tremor (Miao et al. 2009)	Parkinsonism (Miao et al. 2009)
throat pain (Ralston et al. 2019)	dysphonia (De Boos 2019; Jordan et al. 2020; Joshi et al. 2018; McQuown et al. 2016; Pritchard et al. 2018; Strack et al. 2001; Wilbur et al. 2001; Zilkens et al. 2016)	rigidity of extremities (Miao et al. 2009)	tracheal perforation (De Boos 2019)
vomiting (Joshi et al. 2018; Ralston et al. 2019; Strack et al. 2001; Wilkes 2023)	dyspnoea (Funk & Schuppel 2003; Joshi et al. 2018; McQuown et al. 2016; Plattner et al. 2015; Pritchard et al. 2018; Ralston et al. 2019; Shields et al., 2010; Strack et al. 2001; Wilbur et al. 2001; Wilkes 2023)	ptosis (Funk & Schuppel 2003; Milligan & Anderson 1980; Smith et al. 2001; Wilbur et al. 2001)	miscarriage /premature birth (Douglas & Fitzgerald 2020; Messing et al. 2018; Shields et al. 2010; Strack et al. 2001; Wilbur et al. 2001)
loss of bowel/bladder function (Jordan et al. 2020; Joshi et al. 2012; McQuown et al. 2016; Plattner et al. 2015; Ralston et al. 2019; Shields et al. 2010; Strack et al. 2001; Wilbur et al. 2001; Zilkens et al. 2016)	petechiae (Plattner et al. 2015; Pritchard et al. 2018; Shields et al. 2010; Strack et al. 2001; Zilkens et al. 2016)	paresis / unilateral weakness (Joshi et al. 2012; Malek et al. 2000; Milligan & Anderson 1980; Smith et al. 2001; Wilbur et al. 2001)	carotid artery dissection (Clarot et al. 2005; Milligan & Anderson 1980; Shields et al. 2010)
neck swelling (Joshi et al. 2018)	hemiplegia (Le Blanc Louvry et al. 2013; Milligan & Anderson 1980)	facial paralysis / droop (Le Blanc Louvry et al. 2013; Smith et al. 2001; Wilbur et al. 2001)	paralysis (Malek et al. 2000; Smith et al. 2001; Wilbur et al. 2001)
Neuropsychological			
sleepiness (Ralston et al. 2019)	loss of sensation / sensory deficit (Milligan & Anderson 1980; Smith et al. 2001; Wilbur et al. 2001)	subconjunctival haemorrhage (Strack et al. 2001; Vella et al. 2017; Zilkens et al. 2016)	seizures (Le Blanc Louvry et al. 2013)
dizziness/light headedness (Campbell et al. 2018; Douglas & Fitzgerald 2020; Funk & Schuppel 2003; Joshi et al. 2018; Ralston et al. 2019; Shields et al., 2010; Smith et al. 2001; Strack et al. 2001; Vella et al. 2017; Wilbur et al. 2001; Wilkes 2023; Zilkens et al. 2016)	dysesthesia (Le Blanc Louvry et al. 2013)	vision problems (Campbell et al. 2018; Jordan et al. 2020; Joshi et al. 2014; Le Blanc Louvry et al. 2013; Ralston et al. 2019; Smith et al. 2001; Strack et al. 2001; Wilbur et al. 2001; Zilkens et al. 2016)	stroke (Joshi et al. 2018; Malek et al. 2000; Milligan & Anderson 1980; Shields et al., 2010)
headaches (Campbell et al. 2018; Clarot et al. 2005; Funk & Schuppel 2003; Jordan et al. 2020; Joshi et al. 2014; Le Blanc Louvry et al. 2013; Milligan & Anderson 1980; Ralston et al. 2019; Smith et al. 2001; Strack et al. 2001; Wilkes 2023)	confusion (De Boos 2019, Milligan & Anderson 1980; Ralston et al. 2019; Wilkes 2023)	memory loss / amnesia (Campbell et al. 2018; De Boos 2019; Douglas & Fitzgerald 2020; Pritchard et al. 2018; Shields et al., 2010; Smith et al. 2001; Strack et al. 2001; Wilbur et al. 2001; Valera et al. 2022)	coma (Malek et al. 2000; Shields et al., 2010)
loss of hearing / tinnitus (Joshi et al. 2018; Joshi et al. 2014; Joshi et al. 2012; Ralston et al. 2019; Smith et al. 2001; Wilbur et al. 2001)	Broca-like aphasia (Le Blanc Louvry et al. 2013)	loss of consciouness / post-concussion syndrome (Campbell et al. 2018; De Boos 2019; Douglas & Fitzgerald 2020; Funk & Schuppel 2003; Jordan et al. 2020; Joshi et al. 2014; Joshi et al. 2018; McQuown et al. 2016; Messing et al. 2018; Shields et al. 2010; Plattner et al. 2015; Ralston et al. 2019; Strack et al. 2001; Thomas et al. 2014; Vella et al. 2017; Wilbur et al. 2001; Zilkens et al. 2016)	
Psychological			
shock (Thomas et al. 2014)	dissociation (Joshi et al. 2014)	hypervigilance (Joshi et al. 2014)	depression (Campbell et al. 2018; Joshi et al. 2014; Mittal et al. 2018; Smith et al. 2001; Valera et al. 2022; Wilbur et al. 2001)
mood disturbance (unspecified) (Joshi et al. 2018)	feelings of worthlessness & helplessness (Joshi et al. 2014)	traumatic immobility (Farr 2002)	PTSD (Campbell et al. 2018; Smith et al. 2001; Valera et al. 2022; Vella et al. 2017; Wilbur et al. 2001)
nightmares (Joshi et al. 2018; Joshi et al. 2012; Smith et al. 2001; Wilbur et al. 2001)	insomnia (Joshi et al. 2018; Joshi et al. 2014; Joshi et al. 2012; Smith et al. 2001; Wilbur et al. 2001)	panic attacks (Joshi et al. 2018)	suicidal ideation (Joshi et al. 2014; Joshi et al. 2012; Smith et al. 2001; Wilbur et al. 2001)
personality changes (Smith et al. 2001)	heightened & persistent fear (Joshi et al. 2012)	anxiety (Joshi et al. 2012; Smith et al. 2001; Wilbur et al. 2001)	

Strangulation can cause a wide array of consequences, with numerous signs, symptoms, injuries and impairments following strangulation have been documented by investigators. As illustrated in Table 1, there are many consequences reported by victim-survivors that can be categorised as physical, neuropsychological and psychological. Consequences within each category can range from mild (e.g., headaches) to severe (e.g., stroke). It is important to note here that large variations in the severity of symptoms following strangulation is thought to be the result of the method, location, force and duration of the strangulation event (Funk & Schuppel, 2003). The frequency of consequences being reported in the literature is also of note. In regards to physical outcomes of strangulation within IPV, Table 1 demonstrates difficulties with speech, breathing and swallowing (dysarthria, dysphagia, dysphonia and dyspnoea) are cited most frequently by researchers. Neuropsychologically, commonly recorded consequences include dizziness, headaches, memory loss and loss of consciousness. With regard to psychological outcomes, researchers have most frequently reported on depression, post-traumatic stress disorder (PTSD) and suicidal ideation. As our current interest is in understanding strangulation from a psychological standpoint, the neuropsychological and psychological consequences will be further discussed.

3.1. The Pathophysiology of Strangulation

The pathophysiological processes of strangulation – that is, how strangulation causes harm - provide the basis for understanding the neuropsychological consequences of strangulation. Anatomically, the neck is structurally vulnerable to injuries due to the neck containing the vital pathways for blood and oxygen flow to the brain and body, its relatively small size and lack of skeletal protection (Strack et al., 2001). There are multiple ways that strangulation can cause significant injury and death, however, most medical and forensic attention has been on hypoxia and anoxia - where the brain is starved of oxygen (Schoenberg & Scott, 2011). Without oxygen cell death within the brain occurs in minutes and can result in transient symptoms and permanent damage as noted in Table 1, to brain death and death (Anderson & Arciniegas, 2010; Schoenberg & Scott, 2011).

The amount of pressure required to cause injury through strangulation has been compared to the amount of pressure required to open a can of soda or a male's handshake (De Boos, 2019; Strack et al., 2001). Moreover, as detailed by Smith, Clayton, and Robertson (2011), loss of consciousness can occur within 6.8 seconds of strangulation starting and can progress to death within one to six minutes. Even after the strangulation has stopped there is still the risk of brain damage or death with delayed death as a result of carotid artery dissection - tears in the carotid artery – which have been reported in case studies in the weeks following a reported strangulation (see Table 1). Strangulation can not only become a lethal act with relative ease, but due to the susceptibility of the neck area to injury and the vulnerability of the brain, even minimal force applied through strangulation can have significant non-lethal consequences for victim-survivors (Bichard et al., 2022; Clarot, Vaz, Papin, & Proust, 2005; McClane et al., 2001; Pritchard et al., 2017; Shields et al., 2010).

The pathophysiological process in which strangulation causes injury is primarily a result of the brain being deprived of oxygen or blood. This is distinct from traumatic brain injuries (TBI), which are a result of blunt force trauma (Schoenberg & Scott, 2011). However, the distinction between injuries as a result of strangulation and TBI has not always been observed in the literature. Some researchers include strangulation in their definitions of TBI or more 'brain injuries' (Banks, 2007; Campbell et al., 2018; Esopenko et al., 2019; Hunnicutt, Lundgren, Murray, & Olson, 2017; Kwako et al., 2011; Prasad Adhikari et al., 2023), while others do not clearly distinguish between the two (Iverson, Dardis, & Pogoda, 2017; Maldonado-Rodriguez et al., 2021). This may be due to some defining TBI

as any injury to the head which results in loss of consciousness (e.g., Hunnicutt et al., 2017), or in a similar vein including strangulation in their data due to having injuries comparable to TBI (Haag et al., 2019). A key issue with this inconsistency in distinction is that the rates of those who are impacted as a result of blunt force trauma or strangulation become indistinguishable. For example, while Raskin and colleagues (2023) compared the cognitive performance of participants in their study who had experienced strangulation and those who had not, only one of the participants had experienced strangulation and no head trauma. Thus, echoing Pritchard et al.'s (2017) argument, to produce useful data regarding brain injury in IPV because of the pathophysiological differences, standardized, transdisciplinary definitions of strangulation and TBI would be beneficial. This inconsistency in definitions across existing literature remains problematic to understanding the relationship between strangulation and neuropsychological consequences. Arguably, however, this flaw may reflect how victim-survivors of IPV rarely experience physical violence limited to just blunt force trauma or strangulation (Ralston, Rable, Larson, Handmaker, & Lifshitz, 2019; Shields et al., 2010; Wilbur et al., 2001).

Due to the pathophysiological differences, recent research appears to be moving towards separating strangulation from TBI. For example, Valera and colleagues have reanalysed data collected from a previous study which included strangulation in its definition of TBI, to examine the effects of strangulation independent of (Valera, Daugherty, Scott, & Berenbaum, 2022; Valera & Berenbaum, 2003). In a similar vein, Daugherty, Verdejo-Román, Pérez-García, & Hidalgo-Ruzzante.'s (2022) examined different structural changes observed in the brain from trauma, TBI and strangulation.

3.2. Neuropsychological Consequences of Strangulation

Key areas of neuropsychological impairment as a result of hypoxic or anoxic injuries are thought to include executive function – especially attention and processing speed - and memory impairment (Anderson & Arciniegas, 2010; Monahan, Purushotham, & Biegon , 2019). This is thought to be a result of different brain regions varying in susceptibility to damage from hypoxic and anoxic injury, as demonstrated in post-mortem studies (Monahan et al., 2019). In particular, Anderson and Arciniegas (2010) highlight the hippocampus - a key brain structure involved with memory formation, learning, spatial navigation and regulation of emotions - appears to show greater vulnerability to short periods of hypoxia compared to other regions of the brain. Anderson and Arciniegas (2010) provide an in-depth account of the neurocognitive consequences of what they term hypoxic-ischemic brain injury. However, the article's reviewed by Anderson and Arciniegas' (2010) focus primarily on hypoxic-ischemic brain injury following cardiac arrest, respiratory failure or carbon monoxide poisoning – with no mention of strangulation in their article. This is of particular relevance because the cause of hypoxic-ischemic injury plays an important role in the pathophysiology and by extension the cognitive impacts. Therefore, while Anderson and Arciniegas' (2010) research may inform hypothesises on the brain regions impacted by strangulation, further research is required to explore strangulation-specific hypoxic-ischemic brain injury.

In an attempt to examine potential causal mechanisms for structural brain alterations in victim-survivors of IPV in an exploratory study, Daugherty and colleagues (2022) used structural magnetic resonance imaging and a variety of psychometric measures. A relationship between observed structural changes in the horizontal ramus of the anterior segment of the lateral sulcus and participants who had experienced strangulation (Daugherty et al., 2022). As Daugherty et al. (2022) recognise, this is not indicative of causation.

However, their studies offer support for the notion that IPV may lead to structural brain alterations.

Focusing specifically on strangulation, Bichard et al. (2022) found that 23 of the 30 studies included in their systematic review on the neuropsychological consequences suggested participants had potentially serious neuropsychological outcomes. Bichard et al. (2022) also commented on the lack of data on the long-term impact of strangulation, with existing research inconsistent in the timeframes of consequences examined, with the bulk of quantitative data reporting on initial outcomes of strangulation and qualitative studies overly reliant on participants memory and therefore prone to both recall bias.

Supporting the idea that strangulation may have neuropsychological consequences, Valera et al. (2022) found participants who had experienced what researchers termed 'alterations in consciousness' following strangulation, performed more poorly compared to the control sample on long-term and working memory, as measured by The California Verbal Learning Test (Delis, Kramer, Kaplan, & Ober, 1987) and Digit span, of the Wechsler Adult Intelligence Scale–Revised (Wechsler, 1981). Other measures of neuropsychological functioning, including learning, visuomotor speed, cognitive flexibility and nonverbal cognitive fluency, were included but no statistically significant differences between groups were observed. To support the methodological rigour of this study, Valera et al. (2022) attempted to control for what they termed "complex histories" victim-survivors may have through employing strict inclusion criteria, such as excluding participants who had recent histories of substance dependence. However, attempting to control for confounds and using retrospective data from a previous study, resulted in a small sample size of participants (52), meaning the study delivered only preliminary evidence of a relationship between strangulation and memory impairment. Despite this, findings are supported by other studies on the relationship between strangulation and memory loss (see Table 1). Valera et al. (2022) hypothesize larger sample sizes in replication studies may find further common neuropsychological impairments in victim-survivors of strangulation.

One approach to understanding the potential neuropsychological impact of strangulation that is prominent within the medical and forensic literature is through single cases. Such cases offer in-depth details regarding victim-survivor presentation, initial and progression of symptoms that have been useful in extending knowledge of the potential consequences of strangulation (Clarot et al., 2005; Funk & Schuppel, 2003; Jordan, Murphy,, Romine, & Varela-Gonzalez, 2020; Le Blanc-Louvry, Papin, Vaz, & Proust, 2013; Malek et al., 2000; Miao et al., 2009; Milligan & Anderson, 1980). For example, Le Blanc-Louvry et al. (2013) provide detail of a victim survivor of strangulation who on presentation to medical services experienced dysesthesia, headache and facial paralysis. These initial symptoms later developed into ongoing hemiplegia, aphasia, apraxia, lateral homonymous hemianopsia, and epileptic seizures. Case studies like this are useful in providing idiosyncratic conceptualisations of the outcomes of strangulation within IPV and are reflective of the heterogeneous nature of the consequences of strangulation.

Alternatively, other researchers have documented the accounts of victim-survivors of IPV and strangulation which detail impairment experienced as a result (Douglas & Fitzgerald, 2021, 2022; Farr, 2002; Joshi, Thomas, & Sorenson, 2012; Vella, Miller, Lambert, & Morgan, 2017). These primarily qualitative studies offer unique first-person descriptions of neuropsychological changes they have experienced following being a victim of strangulation. Vella and colleagues (2017) summarise one participant's experience:

Jennifer was strangled to unconsciousness and when she was conscious, she could not concentrate, felt dizzy, and had no appetite. Jennifer suffered severe trauma and had subconjunctival haemorrhages in both eyes (eyes filled up with blood). Memory loss was also severe as she had to re-learn how to read. (p. 180).

Such accounts are useful in contextualising experiences of the neuropsychological consequences and how those conditions listed in Table 1 can manifest for different individuals. As highlighted by Sorenson and colleagues (2014), a challenge unique to data generated through self-reports from victim-survivors of strangulation is that typical questions around the accuracy of recall are further compounded by the potential of impaired memory as a result of the strangulation. Similarly, Douglas and Fitzgerald (2022) and Joshi et al. (2012) observe that victim-survivors may also not connect the injuries and symptoms they are experiencing to strangulation specifically as a result of the multiple forms of violence experienced. As highlighted in Patch et al.'s (2018) systematic review, another challenge facing experiential accounts is that a causational relationship cannot be established.

Another method used to generate knowledge of the neuropsychological consequences of strangulation has been using either existing medical or forensic data (Hawley et al., 2001; McClane et al., 2001; Mittal et al., 2018; Plattner, Bolliger, & Zollinger, 2005; Pritchard et al., 2018; Ralston et al., 2019; Shields et al., 2010; Strack et al., 2001; Wilkes, 2023; Zilkens et al., 2016). This research has been useful in identifying commonalities of presenting symptoms of strangulation victim-survivors as detailed in Table 1, such as loss of consciousness, headaches, dizziness/light-headedness and memory loss. Reliance on medical and forensic data has been critiqued, however, because not all victim-survivors access medical or forensic services following strangulation and forensic or medical identification of symptoms – such as slurred speech - being misidentified as being due to distress or substance use (Monahan et al., 2022; Pritchard et al., 2018; Vella et al., 2017; Wilson et al., 2021). As a result of the range of methods used to document the neuropsychological impacts of strangulation, it is difficult to conclude what neuropsychological changes are most likely to be associated with strangulation.

Adding further complication, strangulation can be experienced by victim-survivors multiple times and in multiple instances (Joshi et al., 2012; Messing, Campbell, AbiNader, M. & Bolyard , 2022; Nemeth, Mengo, Kulow, Brown, & Ramirez, 2019; Vella et al., 2017; White et al., 2021; Wilbur et al., 2001). Qualitative interviews provide striking descriptions of these histories, such as one of Joshi et al.'s (2012) participants recalling that if the perpetrator "could not black me out, he'd let me go for a little bit, then turn around and do the same shit all over again" (p.804). In what Messing et al. (2018) name a 'dosage effect', it is hypothesised that there may be a relationship between the number of strangulation events experienced by a victim survivor and reported neuropsychological symptoms; finding that victim-survivors who had experienced multiple strangulations were more likely to have experienced a loss of consciousness. At a neurological level, Monahan et al. (2019) outline how multiple strangulation events may result in compounding damage, hypothesizing that epigenetic (non-genetic influences on gene expression) changes may occur as a result of damage to DNA causing irregular protein production. Monahan and colleagues hypothesize that the brain attempts to repair functional neuronal circuitry through inflammatory mechanisms. If repetitive injury occurs, chronic inflammation hinders cellular repair – especially if the brain does not have sufficient time to repair. This may prevent the brain's neuroplastic processes and lead to further structural damage and decreased brain function. This is an area that requires further investigation.

Although focused on medical causes of cognitive impairment than strangulation, Anderson and Arciniegas (2010) argue that the consequences of hypoxic-ischemic brain injury can result in significant functional disability or reduction in quality of life for those affected. What is lacking in the literature on strangulation is how these "….sometimes persistent, and occasionally permanent, disorders with complex medical, social, and legal considerations… " (Anderson & Arciniegas, 2010, p. 59) affect the victim-survivors and how people address the challenges they face. For example, there needs to be further academic inquiry on how neuropsychological consequences of strangulation – such as loss of consciousness, headaches and memory loss - impact victim-survivors with regard to their safety, risk, and ability to function. Furthermore, understanding how neuropsychological impacts might interact with the psychological impacts of strangulation offers an important area for future research.

3.3. Reported Psychological Consequences of Strangulation

Research on psychological injury and impairment from strangulation within IPV is in its relative infancy. Both Smith, Mills, and Taliaferro's (2001) and Wilbur et al.'s (2001) formative studies detail participants reporting experiencing personality changes, depression, nightmares, insomnia, suicidal ideation, anxiety and PTSD following experiencing strangulation. Smith et al. (2001) also note that 50% of participants reported developing one or more symptoms related to their psychological health within two weeks following experiencing strangulation. Sharing similar results to these, Joshi et al. (2012) highlighted the exacerbation of existing mental health concerns post strangulation - particularly depression, anxiety, and suicidal ideation. This is of notable concern as IPV victim-survivors tend to report higher levels of mental distress than general populations (Esopenko et al., 2019; Krug, Mercy, Dahlberg, Zwi, & The World Health Organisation, 2002). These studies are useful in connecting the issues of strangulation and psychological consequences. However, Joshi et al.'s (2012), Smith et al.'s (2001) and Wilbur et al.'s (2001) reliance on data generated through self-reports means diagnostic claims about specific types of psychological disorders are limited and alternative explanations for their experiences of mental distress have not been explored. Such contextual information is often what is collected in psychological research. Therefore, the findings of these studies do offer some indication of the occurrence of mental distress being perceived by victim-survivors as resulting from their experiences of strangulation.

Valera et al. (2022) and Mittal et al. (2018) employed psychometric measures to examine specific psychological disorders as a consequence of strangulation. Mittal et al. (2018) proposed that there could be a multitude of ways that experiencing strangulation could act as a risk factor for depression, such as ongoing feelings of helplessness and anticipatory anxiety. Performing a secondary analysis of data derived from an HIV-IPV prevention intervention clinical trial and using The Center for Epidemiologic Studies Depression Scale (Radloff, 1977), Mittal et al. (2018) did find high numbers of both strangulation and depressive symptoms in the sample of victim-survivors. The bivariate analysis performed by Mittal et al. (2018) found experiencing strangulation correlated with the participant's likelihood of depressive symptoms by 2.4 times. The multivariate logistic regression conducted by Mittal et al. (2018) with sociodemographic variables (age, race, education and income) and mitigating factors (social support and self-esteem) found social support as a significant protective factor for depression. While Mittal et al. (2018) acknowledge the small sample size may have impacted the ability to detect significance in this study, they have established a relationship between strangulation and subsequently increased likelihood of depression, whilst highlighting the importance of social support as a protective factor.

Also conducting a secondary analysis, Valera and colleagues (2022) examined the relationship between participants who had experienced 'alterations in consciousness' following strangulation and psychological functioning. Psychological functioning was defined in this study as anhedonic depression, anxious arousal, general distress, PTSD symptoms and worry, measured by The Penn State Worry Questionnaire (Meyer, Miller, Metzger, & Borkovec, 1990), The Mood and Anxiety Symptom Questionnaire— Short Form (Casillas & Clark, 2000) and The Clinician-Administered Posttraumatic Stress Disorder Scale for Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition) (DSM-IV) - One Week Symptom Status Version (Weathers, Ruscio, & Keanne, 1999). Valera et al. (2022) reported higher levels of anhedonic depression and PTSD symptoms in participants that had experienced alterations in consciousness following strangulation in comparison to the control sample. Valera et al. (2022) hypothesize that the small sample size may have resulted in no relationship being established between strangulation and anxiety, general distress, or worry. As highlighted in Table 1, only a handful of other researchers have identified anxiety as a reported consequence following strangulation, while general distress and worry have not been identified at all. This could suggest that anxiety, general distress, and worry may not be a common outcome of strangulation within IPV, however, it would be beneficial to conduct more research in this space.

Vella et al.'s (2017) qualitative interviews with victim-survivors of strangulation in a community-based family justice centre found that participants described experiencing symptoms, such as flashbacks, hypervigilance and avoidance, which were consistent with the Diagnostic and Statistical Manual of Mental Disorders (Fifth Edition) (DSM-5 American Psychiatric Association, 2013) diagnostic criteria for PTSD. It is important to note that the purpose of the interviews conducted by Vella and colleagues (2017) was not diagnostic in nature and participant histories of IPV were not accounted for as potential explanations for symptoms experienced. Despite these limitations, qualitative studies, such as Vella et al.'s (2017) extend our understanding of the possible psychological impacts of strangulation beyond diagnostic criteria. For example, a participant in Thomas et al. (2014) is quoted speaking to the emotional pain of such experiences ''On top of all of it, it is painful to watch the man who so-called loves you try to kill you.'' (p.38). Little additional evidence exists in the literature regarding the emotional impacts of strangulation from a current or former intimate partner (Carlson, 2014).

What Vella et al. (2017) argue is most salient across their interviews with 13 victim-survivors was the result that victim-survivors of strangulation experienced ongoing, persistent fear that caused them to be vigilant in everyday life or altered their cognitions, including how they perceived themselves, others, and the world. Although not the focus of their study, Joshi et al.'s (2012) identified persistent fear as a psychological consequence of strangulation for the 17 victim survivor interviewees. Another reported consequence of strangulation is the disempowerment of victim-survivors. Messing et al. (2018) found that victim-survivors of strangulation were more likely to feel powerless than other victim-survivors of IPV. Similarly, following strangulation the majority of Thomas et al. (2014) participants reported feeling an intense sense of vulnerability and powerlessness and altered their behaviour as a survival strategy, for example, by increasing their compliant and submissive actions, self-isolating, and not leaving the house. Thomas and colleagues' (2014) observation that participants employed these strategies signals further psychological consequences for the victim-survivors. Collectively, the research outlined here suggests that the psychological impacts of strangulation extend beyond specific disorders, with further research needed to explore this topic.

4. FUTURE RESEARCH DIRECTIONS

Researchers who have taken a systematic approach to reviewing the literature on strangulation within IPV have critiqued existing research on the overall reliance on self-reports, convenience sampling and small sample sizes (Bichard et al., 2022; Monahan et al., 2022; Pritchard et al., 2017; Sorenson et al., 2014). It can be argued, however, that the subject matter at hand does not lend itself to traditional research methods that mitigate these criticisms. Unlike other subjects, the variables of interest regarding strangulation and IPV cannot be stripped back and manipulated to produce clear causal results. Instead, strangulation is a relational, sensitive and complex topic. Therefore, investigating the impact of strangulation on victim-survivors requires researchers to work within considerable practical restraints when designing such studies. For example, whilst convenience sampling is not the preferred method in other realms of research, participant safety concerns are paramount and convenience sampling from specialist family violence services gives researchers access to participants within a safe space. Further, when conducting research with victim-survivors, researchers ask participants to disclose highly sensitive and personal information about traumatic experiences (Sullivan & Cain, 2004). It can be argued that the resulting small, convenience samples are the most ethically appropriate in terms of minimising the risk of re-traumatisation. Sharing Patch et al.'s (2018) sentiments, although existing literature on strangulation within IPV has flaws, one can be optimistic in that existing research provides a foundation to further knowledge development and efforts to support victim-survivors. As this is a much-needed area to be researched, creative methods need to be employed to meet the needs of a complex topic.

Beyond critiques of methods employed by researchers, some scholars have identified a general lack of research addressing the psychological complexities of victim survivors' lived experiences of strangulation and its detrimental impacts (Daugherty et al., 2022; Vella et al., 2017). Patch et al. (2018) also note that little research into victim survivor understandings of the impacts strangulation may pose on their health, particularly long-term. However, when drawing from wider brain injury-focused literature, it is thought even mild brain injuries can impact employment, financial stress, parenting, relationships, housing, mental health, physical health, and day-to-day living (Gabbe et al., 2018; Haag, Toccalino, Estrella, Moore, & Colantonio, 2022). As well as initial injury from the act of IPV itself, the detrimental impacts of IPV on victim's well-being is a well-documented phenomenon internationally; including higher rates of self-reported poor health, depressive symptom, substance misuse and exacerbation of existing medical problems (Campbell et al., 2002; Coker et al., 2002; Ellsberg et al., 2008; World Health Organization, 2005).

It can be argued, therefore, that existing literature offers a somewhat one-dimensional view of the impact strangulation may have on victim-survivors, offering lists of injuries, symptoms and impairments (see Table 1). Given the multitude of consequences strangulation can have, the wider context of the victim survivor's lives need to be considered to understand the true impact of strangulation beyond what is currently known. Using the lists of injuries, symptoms and impairments outlined in Table 1 can be used as a base to then explore how strangulation impacts victim-survivors in their day-to-day lives, relationships and functioning. Generating a more holistic understanding of how strangulation impacts victim-survivors and those around them can then inform service supports to better address and meet victim survivor's needs.

5. CONCLUSION

Strangulation is a severe form of IPV. Growing evidence from analyses of medical and forensic data, convenience surveys and case-studies suggest that strangulation is highly traumatic and likely results in serious physical, neuropsychological and psychological consequences for surviving victims. Accumulated evidence also suggests the consequences of strangulation can vary from mild (e.g., headaches) to serve (e.g., stroke).

Common neuropsychological consequences include loss of consciousness, headaches, dizziness/light-headedness and memory loss. However, just how the brain is impacted by strangulation-specific hypoxia or anoxia is yet to move beyond hypothesis. It is also hypothesized that the multiple strangulations may have a compounding effect on the neuropsychological harm, however, this remains important for further investigation.

In regards to psychological consequences, PTSD and depression are forms of mental distress most strongly evidenced as outcomes of strangulation, followed by insomnia, anxiety and suicidal ideation. Qualitative investigations have begun to consider what the psychological consequences of strangulation may be beyond diagnoseable disorders. For example, are there particular psychological consequences from an intimate partner enacting such extreme life-threating violence on you, in heightening feelings of powerlessness, vulnerability and fear? The psychological outcomes unique to having an intimate partner inflict such a traumatic level of violence on a victim survivor are yet to be explored.

Existing literature on the consequences of strangulation within the context of IPV has been critiqued on orthodox methodological grounds. In response, it can be conceded that previous research has been limited methodologically, but that given the complexities of researching strangulation in this context, methodological compromises are necessary. In terms of further criticisms, while existing literature has detailed the harms associated with strangulation, the consequences of strangulation are often reduced to a one-dimensional list of signs, symptoms and impairments, devoid of the impacts of these items on survivor victims. When considering wider literature on mental health and brain injury, the ripple effect on an individual's well-being and functioning is well established. Therefore, this critical review concludes that there is a need for more holistically orientated future research to explore how the potential life and dynamic consequences of strangulation impact and are experienced by victim-survivors.

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KEY TERMS & DEFINITIONS

Existing literature predominately makes a distinction between 'strangulation' and 'non-fatal strangulation' on the basis of whether death has occurred as a result. When discussing this chapter with a specialist family violence service practitioner, she queried this distinction suggesting that this waters down the impact of non-fatal strangulation. Upon reflection, the authors of this chapter have decided to use strangulation as a blanket term to encompass both fatal and non-fatal strangulation.

AUTHORS' INFORMATION

Full name: Emma de Lautour
Institutional affiliation: Massey University
Institutional address: School of Psychology, Massey University, Private Bag 102-904 North Shore City 0745, Auckland, New Zealand
Short biographical sketch: Emma de Lautour is a Doctor of Clinical Psychology student at Massey University. Prior to her doctoral studies Emma's professional experience included delivering intake and assessment services, crisis support and long-term case management support to vulnerable individuals and families, specifically within family violence, unemployment and school settings. Working with individuals and families with complex presentations, such as mental distress, complex trauma, drug and alcohol misuse, traumatic brain injury, and learning disorders has led to a passion in the area of mental health and wellbeing. Areas of interest include strangualtion, gender based violence and the psychological consequences of these.

Full name: Richard B Fletcher, Associate Professor
Institutional affiliation: Massey University
Institutional address: School of Psychology, Massey University, Private Bag 102-904 North Shore City 0745, Auckland, New Zealand
Short biographical sketch: Richard has worked in higher education for over 24 years and specialises in research method both quantitatively and qualitatively.

Full name: Darrin Hodgetts, Professor
Institutional affiliation: Massey University
Institutional address: School of Psychology, Massey University, Private Bag 102-904 North Shore City 0745, Auckland, New Zealand
Short biographical sketch: Darrin Hodgetts is a Professor of Societal Psychology at Massey University where he researches issues of human [in]security, including urban poverty and health inequalities. Darrin has held various academic positions in Canada, the United Kingdom and New Zealand, and his work is increasingly focused on the Asia Pacific region.

Full name: Robyn Vertongen
Institutional affiliation: School of Psychology, Massey University
Institutional address: School of Psychology, Massey University, Private Bag 102-904 North Shore City 0745, Auckland, New Zealand
Short biographical sketch: Robyn Vertongen is an academic clinical psychologist who has over 25 years clinical experience. Robyn is the Albany Campus Clinical Psychology Programme Coordinator at Massey University and has served on the Aotearoa New Zealand Association of Cognitive Behaviour Therapy executive committee board for several years. Areas of interest include mental health and wellbeing, sexuality and diversity, neurodevelopment disorders, and cognitive behaviour therapy.

Chapter #3

MINDFULNESS AND EATING DISORDERS: THE MEDIATION ROLE OF DYSMORPHIC CONCERNS

Nadia Barberis[1], Danilo Calaresi[1], Marco Cannavò[1], & Teresa Iona[2]
[1]Department of Health Sciences, University "Magna Graecia" of Catanzaro, Italy
[2]Department of Medical and Surgical Sciences, University "Magna Graecia" of Catanzaro, Italy

ABSTRACT
Previous research suggests that mindfulness can improve body satisfaction and reduce problematic behaviors like body comparison, which is linked to dysmorphic concerns and eating disorders. This study aimed to explore whether mindfulness's impact on eating disorders is mediated by dysmorphic concerns. 288 individuals aged between 18 and 35 years old were recruited on social media and filled an online survey measuring mindfulness, dysmorphic concerns, and eating attitudes. Structural equation modeling was used to analyze the data. The hypothesized model showed good fit indices: $\chi 2(24) = 49.45$, $p = .002$; CFI = .99, RMSEA = .06 (90% CI = .04 – .09), SRMR = .03. Significant paths were found from mindfulness to dysmorphic concerns ($\beta = -.37$) and from dysmorphic concerns to eating disorders ($\beta = .51$), but a non-significant path was found from mindfulness to eating disorders ($\beta = -.04$). However, the indirect relation of mindfulness with eating disorders through dysmorphic concerns was statistically significant ($\beta = -.19$). The findings suggest that lower mindfulness may increase susceptibility to dysmorphic concerns, highlighting the potential of mindfulness-based interventions to reduce dysmorphic concerns in eating-related psychopathologies.

Keywords: mindfulness, dysmorphic concerns, eating disorders.

1. INTRODUCTION

Dysmorphic concerns are a concept that includes both the presence of maladaptive behaviors aimed at changing one's appearance as well as behavioral, emotional, and cognitive components connected with a negative body image. (Luca, Giannini, Gori, & Littleton, 2011). Such concerns of perceived flaws in appearance may cause individuals to severely alter their food intake and employ compensatory techniques to manage their body size and form (Tang, Cooper, Wang, Song, & He, 2020), and may contribute to a greater probability of developing disordered eating issues (Gori, Topino, & Griffiths, 2021). Eating disorders are a group of pathologies characterized by inappropriate food intake and weight obsession that can impair a person's functionality (American Psychiatric Association, 2013). According to research, mindfulness may increase body satisfaction (Lavender, Gratz, & Anderson, 2012) and lessen harmful behaviors like body comparison, which has been linked to dysmorphic concerns (Dijkstra & Barelds, 2011) and eating disorders (Hamel, Zaitsoff, Taylor, Menna, & Le Grange, 2012). Mindfulness does not focus on any thought, feeling, or happening above others, since it entails being open to all experiences as they arise, and fosters intentional, nonjudgmental attention to one's current feelings (Kiken & Shook, 2012). Research has demonstrated that both state and trait mindfulness can enhance basic and higher-order cognitive functions (Li, Yang, Zhang, Xu, & Cai, 2021; Nien et al., 2020), as well as contribute to improved mental health

(Dillard & Meier, 2021; Enkema, McClain, Bird, Halvorson, & Larimer, 2020). Indeed, several mindfulness-based programs have proven effective in mitigating mental health issues, including anxiety, depression, and stress (Witarto et al., 2022; Bäuerle et al., 2021).

2. BACKGROUND

Based on the above considerations, it is reasonable to think that the reduction of negative, distorted cognitions and beliefs related to dysmorphic concerns may be one potential mechanism driving the beneficial effects of mindfulness for managing eating disorder symptomatology (Tsai, Hughes, Fuller-Tyszkiewicz, Buck, & Krug, 2017). Nonetheless, there are not many studies examining the connection between mindfulness and dysmorphic concerns and, even though some studies have found that mindfulness can help in preventing eating disorders and in lowering their symptomatology, further research is still required (Beccia, Dunlap, Hanes, Courneene, & Zwickey, 2018; Sala, Shankar Ram, Vanzhula, & Levinson, 2020).

3. METHODS

3.1. Participants

This study was comprised of 288 participants ranging in age between 18 and 35 years (M = 26.36; SD = 4.49). Regarding the educational level, 1% of the participants had an elementary school certification, 7% obtained a middle school certification, 52% achieved a high school diploma, and 40% had a master's degree. Concerning occupational status, 45% of the participants were students, 8% were unemployed, 5% were homemakers, 33% were employed, 8% were self-employed, while 1% were pensioners. With regard to marital status, 40% of the participants were single, 35% were engaged, 12% were living with a partner, 11% were married, 1% were divorced, and 1% were widowed.

3.2. Measures

3.2.1. Mindfulness

The Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) is a self-report questionnaire consisting of 39 items which analyze aspects regarding mindfulness, and is composed of five subscales: observing, describing, acting with awareness, nonjudging of inner experience, nonreactivity to inner experience. Participants are required to rate, on a 5-point Likert scale, their level of agreement with each item (e.g.: "When I'm walking, I deliberately notice the sensations of my body moving"). Higher scores represent higher mindfulness. In the present study, Cronbach's alpha was .83.

3.2.2. Dysmorphic Concerns

The Italian Body Image Concern Inventory (I-BICI; Luca et al., 2011) is a self-report questionnaire which assesses dysmorphic concerns. The test comprises 19 items and 2 subscales: dysmorphic symptoms and symptom interference. Participants are required to rate, on a 5-point Likert scale, their level of agreement with each item (e.g.: "I spend a significant amount of time checking my appearance in the mirror"). Higher scores represent higher dysmorphic concerns. In the present study, Cronbach's alpha was .95.

3.2.3. Eating Disorders

The Eating Attitudes Test (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982) is a self-report questionnaire consisting of 26 items which analyze features concerning eating disorders symptoms, and 3 subscales: dieting, bulimia and food preoccupation, and oral control. Participants are required to rate, on a 6-point Likert scale, their level of agreement with each item (e.g.: "I am terrified about being overweight"). Higher scores represent higher abnormal eating behaviors. In the present study, Cronbach's alpha was .89.

3.3. Procedure

This study acquired a convenience sample through online social networks. The protocol was administered online. The inclusion criteria consisted of being between 18 and 35 years old and speaking Italian with ease. The researchers received approval, in accordance with the international standards of the Helsinki Declaration and the Italian Association of Psychology (AIP), from the regional ethics committee for psychological research of CERIP (Centre for Research and Psychological Intervention - University of Messina, Italy). Participants could only be able to participate in the research by signing the informed consent form. It took about 10 minutes to complete the protocol. There were no missing answers because all questions were set as required. The data were then analyzed using IBM SPSS and RStudio.

3.4. Statistical Analysis

Correlations and descriptive analyses were performed for all the observed variables. Using structural equation modeling (SEM) with latent variables, a model with mindfulness as a predictor variable, dysmorphic concerns as a mediator, and eating disorders as an outcome, was examined. We parceled the data to identify the latent variables' indicators. The parceling approach groups randomly chosen items from a questionnaire in three indicators of each latent variable (Little, Cunningham, Shahar, & Widaman, 2002). Parcels are less prone to method effects and more likely to adhere to presumptions of normality (Little et al., 2002; Marsh, Hau, Balla, & Grayson, 1998). RStudio with the integration of the lavaan Package for R was used to analyze the covariance matrices, and solutions were generated using maximum-likelihood estimation. The significance of the indirect effects, which consist of a drop from the overall effect to the direct effect, was investigated using a bootstrap-generated bias-corrected confidence interval approach (Preacher & Hayes, 2004; Shrout & Bolger, 2002).

4. RESULTS

4.1. Descriptive Statistics and Correlations

The descriptive statistics and correlational analyses for all the research variables are presented in Table 1. To investigate the distribution of the data, the values of skewness and kurtosis were measured, and no issues concerning the violation of the normal distribution were found (Kline, 2005). Analyses revealed that mindfulness was negatively correlated with dysmorphic concerns and positively associated with eating disorders. Furthermore, dysmorphic concerns were positively related to eating disorders.

Table 1.
Descriptive Analysis and Correlations.

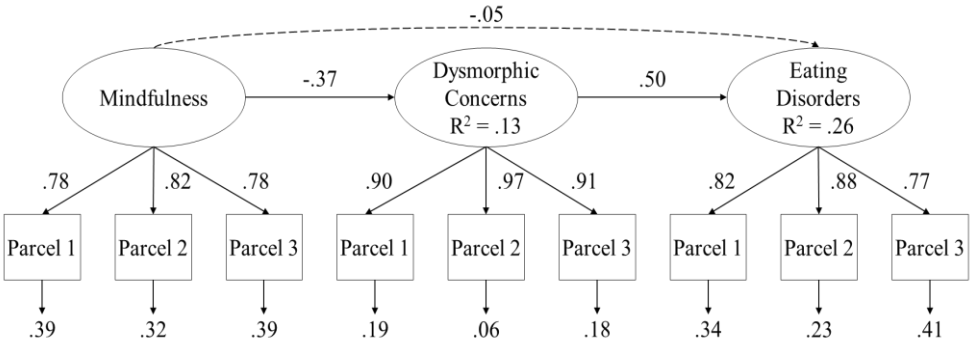
	Min	Max	M	SD	Skew	Kurt	α	1	2
1. Mindfulness	1.72	4.49	3.21	.43	.01	.09	.83	-	-
2. Dysmorphic Concerns	1.00	5.00	2.87	.99	.15	-.74	.95	-.33*	-
3. Eating Disorders	.00	2.27	.48	.45	1.41	1.90	.89	-.20*	.49*

*Note: N = 288; * p < .01.*

4.2. Mediation Model

The model solution (Figure 1) highlighted a good fit: $\chi2(24) = 69.46$; $p < .001$, CFI = 0.97, RMSEA = 0.08, 90% CI (0.06, 0.10), SRMR = 0.04.

Figure 1.
Structural model of associations between Mindfulness, Dysmorphic Concerns, and Eating Disorders.



Note: The model represents the relationships between study variables. Circles represent the latent variables; boxes represent the observed variables. The numerical values on the arrows between latent variables are standardized multiple regression coefficients. The dotted lines represent non-significant associations.

The results of direct effects (Table 2) showed that mindfulness was negatively correlated with dysmorphic concerns ($\beta = -.37$; $p < .001$), though there was not a statistically significant association with eating disorders ($\beta = -.05$; $p < .50$). Furthermore, dysmorphic concerns were positively related with eating disorders ($\beta = .50$; $p < .001$). Examination of the indirect effects (Table 2) underlined an indirect effect of mindfulness to eating disorders through dysmorphic concerns ($\beta = -.18$; $p < .001$).

Table 2.
Path Estimates, SEs and 95% CIs.

	β	p	SE	CI LL	CI UL
Direct Effect					
Mindfulness → Dysmorphic Concerns	-.37	<.001	.15	-1.11	-.52
Mindfulness → Eating Disorders	-.05	<.50	.09	-.22	.11
Dysmorphic Concerns → Eating Disorders	.50	<.001	.04	.20	.36
Indirect Effect via Dysmorphic Concerns					
Mindfulness → Eating Disorders	-.18	<.001	.05	-.33	-.13

Note: p = level of significance; SE = Standards Errors; CI = confidence interval; LL = lower limit; UL = upper limit.

5. FUTURE RESEARCH DIRECTIONS

The results of our research may have important clinical and scientific implications. This study advances existing knowledge by highlighting the relationship between mindfulness, dysmorphic concerns, and eating disorders. Future research should further evaluate the relationships between the analyzed constructs, possibly considering different populations, instruments, and study design. From a clinical perspective, the results suggest that mindfulness might be a useful tool for dealing with dysmorphic concerns and could also be implemented in preventative and therapeutic programs treating eating disorders, specifically when such disorders are interlinked with unhealthy preoccupations intended to change one's appearance.

6. CONCLUSION/DISCUSSION

The findings suggest that individuals with lower levels of mindfulness may be more likely to experience dysmorphic concerns, which may act as risk factors for eating disorders. Dysmorphic concerns include both the presence of maladaptive habits intended to change one's physique, as well as behavioral, emotional, and cognitive aspects associated with a poor body image (Luca et al., 2011). Indeed, the inclusion of potentially dangerous activities whose purpose is to transform the body, such as fasting, is one of the key elements of dysmorphic concerns (Monks, Costello, Dare, & Reid Boyd, 2021). Individuals who struggle with dysmorphic concerns may identify themselves with a body type they consider undesirable, which might encourage unhealthy dietary habits and create the basis for the development of eating disorders (Pedersen, Hicks, & Rosenrauch, 2018). Dysmorphic concerns, characterized by unhelpful body-related sensations and consequent preoccupations with one's body (Bahreini, Kahrazei, & Nikmanesh, 2022; Lavell, Webb, Zimmer-Gembeck, & Farrell, 2018), might also be prevented by mindfulness-related behaviors, characterized by an intentional and nonjudgmental attention to one's current feelings. Indeed, mindfulness does not focus on any thought, feeling, or happening above others, since it entails being open to all experiences as they arise (Kiken & Shook, 2012). Based on the above considerations, it would be reasonable to think that an empowerment of mindfulness capabilities, focused on a minimization of distorted cognitions related to body image issues and a promotion of non-reactivity to thoughts and emotions (Baer, Fischer,

& Huss, 2005), might help in the management of concerns related to one's appearance, and in turn reduce the need to engage in disordered eating habits, behaviors which might have been implemented to combat thoughts and feelings concerning one's appearance (Tsai et al., 2017). The present study has some limitations. First, it only uses self-reported instruments. Furthermore, the study is cross-sectional in nature. Moreover, given that the research was only open to those with Internet access, there might be issues with generalization. Finally, we did not control for participants' familiarity with mindfulness sensitization or training, so their prior experience with mindfulness practices may have varied.

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AUTHORS' INFORMATION

Full name: Nadia Barberis
Institutional affiliation: Department of Health Sciences, University "Magna Graecia" of Catanzaro, Italy
Institutional address: Viale Europa, Catanzaro, Italy, 88100
Short biographical sketch: Nadia Barberis is a dedicated researcher whose work primarily focuses on health sciences, and she has made significant contributions to the field through her research and academic endeavors. Nadia holds expertise in various aspects of health-related studies and has been an essential part of numerous research projects within the department. Her dedication and commitment to advancing health sciences make her a valuable member of the academic community.

Full name: Danilo Calaresi
Institutional affiliation: Department of Health Sciences, University "Magna Graecia" of Catanzaro, Italy
Institutional address: Viale Europa, Catanzaro, Italy, 88100
Short biographical sketch: Danilo Calaresi is a diligent Ph.D. candidate actively engaged in research within the department and is currently pursuing his doctoral studies with a focus on health-related topics. Danilo's academic journey reflects his passion for advancing knowledge in the field of health sciences, and he is committed to contributing to the academic community through his research efforts.

Full name: Marco Cannavò
Institutional affiliation: Department of Health Sciences, University "Magna Graecia" of Catanzaro, Italy
Institutional address: Viale Europa, Catanzaro, Italy, 88100
Short biographical sketch: Marco Cannavò is a promising Ph.D. candidate with a strong commitment to advancing knowledge in health sciences, Marco is actively involved in research activities within the department. His doctoral studies are dedicated to exploring various aspects of health-related topics, and he brings a fresh perspective to the academic community.

Full name: Teresa Iona
Institutional affiliation: Department of Medical and Surgical Sciences, University "Magna Graecia" of Catanzaro, Italy
Institutional address: Viale Europa, Catanzaro, Italy, 88100
Short biographical sketch: Teresa Iona is an accomplished researcher and her extensive experience and expertise in the field of medical and surgical sciences have made her a valuable asset to both her department and the broader academic community. Teresa has contributed significantly to various research projects, and her work reflects a deep commitment to advancing knowledge and improving healthcare practices. Her dedication and leadership in medical research make her a respected figure in the field.

Chapter #4

THE RELATION BETWEEN MOOD DISORDER AND MENTAL HEALTH CONSULTATIONS: THE ROLE OF FAMILY AND FRIEND SATISFACTION

Madison Herrington, David Speed, & Lilly E. Both
Department of Psychology, University of New Brunswick, Canada

ABSTRACT
The purpose of this study was to examine the role of social support from family and friends in seeking mental health consultations in people with and without a mood disorder. Data from the 2017/2018 Canadian Community Health Survey were analyzed from individuals aged 12 to 80+ years (N = 26,448). The results indicated that stress predicted the presence of a mood disorder, but this relation was not moderated by family or friend support. Moreover, having a mood disorder significantly increased the likelihood of mental health consultations. Interaction terms between mood disorder and family satisfaction and mood disorder and friend satisfaction were examined. The linear effect of family satisfaction and friend satisfaction on mental health consultations for individuals with a mood disorder was positive, albeit non-significant. In contrast, the linear effect of family satisfaction and friend satisfaction on mental health consultations for individuals without a mood disorder was negative. Thus, in the absence of a mood disorder, higher satisfaction with family and with friends is associated with lower mental health consultations. Further research should continue to investigate the influence of friend and family support on seeking mental health consultation in people with mood disorders.

Keywords: mood disorders, friend, family, support, mental health consultations.

1. INTRODUCTION AND BACKGROUND

Mental health and wellness are worldwide concerns (World Health Organization [WHO], 2022a). According to the WHO, mental health conditions exist in all countries, and it is estimated that nearly 1 billion people worldwide experience some form of mental health disorder. Specifically, one in eight people are estimated to be currently living with a mental health disorder. In addition, approximately 20% of children and adolescents globally have a mental health condition, with suicide being the second leading cause of death for individuals aged 15 to 29 years (WHO, 2022b). The prevalence of mental health concerns is increasing globally and in the last decade there has been a 13% increase in mental health conditions and substance use disorders. The WHO (2022a) reported that people living with severe mental health conditions die on average 10 to 20 years earlier than the general population, often of preventable physical diseases.

In Canada, mental illness is one of the leading public health problems (Canadian Mental Health Association [CMHA], 2022). According to CMHA, 1 in 4 Canadians will be affected by a mental illness in their lifetime and 1 in 8 Canadians will develop a mental illness serious enough to require professional care. In addition, the Mental Health Commission of Canada (MHCC, 2013) found that 1 in 5 Canadians will personally experience a mental health problem or illness in any given year, accounting for more than 6.7 million people. By 40 years of age, about 50% of the Canadian population will have or have had a mental illness (MHCC, 2013).

Throughout the world and in Canada, mood and anxiety disorders are the most common types of mental illnesses (Government of Canada, 2016). Mood disorders include disorders that elevate or lower a person's mood while anxiety disorders are characterized by having excessive and persistent feelings of worry, apprehension, and fear. In 2013, an estimated 3 million Canadian adults (aged 18 years or older) reported having a mood and/or anxiety disorder (Government of Canada, 2014). Individuals diagnosed with a mood and/or an anxiety disorder often have major impacts on their lives. According to the Government of Canada (2014), 27% of people who reported having a mood or anxiety disorder in 2013 also reported that their disorder(s) had affected their life "quite a bit" or "extremely" in the past 12 months. In addition, 50% of the working Canadians who reported having a mood and/or an anxiety disorder also reported requiring a job modification to continue working because of their disorder(s). Moreover, approximately 35% reported having to stop working all together because of their disorder(s).

Despite the widespread prevalence of mental illnesses in Canada, some Canadians report that their mental health needs are not being met (Government of Canada, 2019). Approximately 5.3 million Canadians reported needing mental health care in 2018; however, only half found that their needs were fully met and 1.1 million reported that their needs were fully unmet. Moreover, almost a quarter of Canadians with mood and/or anxiety disorders (23%) in 2013 reported that they did not consult any mental health professionals about their disorder(s) (Government of Canada, 2014). In addition, of the 62% of respondents who were advised by a professional to seek psychological counselling services for their mood and/or anxiety disorder(s), only 20% of them reported receiving services within the past year. Due to the prevalence of mental illness and mood and anxiety disorders, it is of upmost importance to identify predictors of mental illness and mental health service use in Canada.

1.1. Stress and Mental Illness

Researchers have found that stress levels are related to the prevalence of mood disorders, including both anxiety and depression (Fan, Blumenthal, Watkins, & Sherwood, 2015; Lathren, Bluth, & Park, 2019; Nguyen, Fournier, Bergeron, Roberge, & Barrette, 2005). Nguyen and colleagues (2005) found a higher prevalence of anxiety and depressive disorders in Canadian youth under extreme stress compared to youth who experienced average stress. Research by Lathren and colleagues (2019) found significant associations between high perceived stress, anxiety, and depression scores among adolescents. In adults, population-based studies and systematic reviews also show that work stress is associated with an increased risk of mental illness, including anxiety and depression (Fan et al., 2015; Hoven, Wahrendorf, Goldberg, Zins, & Siegrust 2021; Kim & von Dem Knesebeck, 2015; Rugulies, Aust, & Madsen, 2017). Employees reporting high effort-reward imbalance (Hoven et al., 2021; Rugulies et al., 2017), job insecurity (Fan et al., 2015; Hoven et al., 2021; Kim & von Dem Knesebeck, 2015), and strenuous physical working conditions (Hoven et al., 2021) have been found to have an increased risk of developing anxiety and depression. Fan and colleagues (2015) also found that employees who reported having high home stress, such as high perceived family demands and personal conflict, also reported higher levels of depression and anxiety suggesting evidence for the influence of interpersonal stress on mental illness. Overall, stress appears to be an important predictor of mental illness and should be further investigated in relation to mood disorders.

1.2. Social Support and Mental Health Service Use

Social support has been identified to be an important predictor of seeking mental health services among individuals with mental illness. Research by Hom, Stanley, and Joiner (2015) found that family and friends are key gatekeepers for individuals contemplating suicide to seek mental health consultation. Since individuals often prefer to disclose suicidal thoughts to family or friends over a mental health care professional (Arria et al., 2011), family and friends can play a role in ensuring that an at-risk individual connects with care (Hom et al., 2015). Similarly, Marko, Linder, Tullar, Reynolds, and Estes (2015) found that individuals with serious psychological distress had a reduced likelihood of using mental health services if they reported lacking emotional support. Moreover, social support has been identified as an important predictor of mental health help-seeking in young adults (Gulliver, Griffiths, & Christensen, 2010; Lian, Wallace, Fullilove, 2020; Vogel, Wade, Wester, Larsen, & Hackler, 2007). Lian and colleagues (2020) found that intimate partners, friends, and parents, were reported to be important sources for mental health help-seeking by adolescents when encountering a mental-health related problem. On the contrary, other researchers have suggested that social support increases seeking general medical services but not for those with psychiatric conditions (Maulik, Eaton, & Bradshaw, 2009). LeCloux, Maramaldi, Thomas, and Wharff (2016) found that higher levels of parental support were associated with a lower likelihood of mental health service use among adolescents contemplating suicide. Overall, the literature regarding social support in relation to mental illness and seeking mental health consultations has been mixed and mostly limited to younger adults. Moreover, there is a lack of literature investigating the specific roles of friend support and family support on seeking mental health services in individuals with mental health concerns. Overall, research should investigate the influence of friend and family support on mental illness and seeking mental health consultations.

2. OBJECTIVE

The objective of the current study was to investigate mental health service use (i.e., consultation) in individuals with and without a mood disorder, and to examine whether this relation was moderated by family and friend support. The present study utilized population data to assess the influence of these predictors across ages.

3. METHOD

3.1. Data Source and Participants

The data source for the current study came from the 2017/2018 Canadian Community Health Survey (CCHS) conducted by Statistics Canada (the national statistical and census office). The CCHS is a cross-sectional survey that collects data on the health of Canadians, their determinants of health, and their healthcare utilization. The target population of the CCHS covers all 10 provinces and three territories for individuals 12 years of age and older.

We were able to access the public use microfile data for the 2017/2018 CCHS through our university. The CCHS contains both core content (questions asked of all participants) and optional content (select questions that provinces or territories can choose to include). Consequently, if researchers use optional content, the generalizability of a given study is no longer national. The current study used several questions from optional

modules in the CCHS and as such, only the provinces of Nova Scotia and Quebec were represented in all findings, with Alberta being represented in some findings as well. To be included in the current study, participants had to respond to all covariates of interest, all predictors of interest, and at least one outcome variable (see Table 1).

Based on these parameters, the total sample size was 26,448; 14,138 were women (53.5%) and 12,310 were men (46.5%). Ages ranged from 12 – 80+ years.

Table 1.
Descriptive Statistics as Percentages or Means/Standard Deviations for Demographic Variables of Interest.

	Female	Male
N =	14,138	12,310
Not an Ethnic Minority	87.8%	87.1%
Less than secondary school	18.4%	19.8%
Secondary school graduate	19.7%	18.7%
Post-secondary graduate	61.9%	61.4%
Married	34.0%	36.2%
Common-Law	22.9%	23.7%
Widowed/Separated/Divorced	15.7%	8.1%
Single	27.4%	32.0%
Income Decile	5.36/2.89	5.78/2.83
Self-Rated Health	2.76/0.98	2.79/0.97
Satisfaction with Family Support	4.36/0.77	4.37/0.73
Satisfaction with Friend Support	4.38/0.67	4.34/0.68
Presence of a Mood Disorder	8.2%	4.8%
Mental Health Consultation	18.1%	9.7%

3.2. Measures

3.2.1. Covariates

We controlled for sex (female = base; male), age (12-14 years = base; in blocks of 5-years), education (< high school = base; high school graduate, post-secondary graduate), marital status (married = base; common-law, widowed/separated/divorced, single), province (Nova Scotia = base, Quebec), subjective physical health (1 = *Poor*, 2 = *Fair*, 3 = *Good*, 4 = *Very good*, 5 = *Excellent*), and subjective mental health (1 = *Poor*, 2 = *Fair*, 3 = *Good*, 4 = *Very good*, 5 = *Excellent*).

3.2.2. Predictors

To measure stress, we used the question, “Thinking about the amount of stress in your life, would you say that most of your days are...” with responses ranging from 1 (*Not at all stressful*) to 5 (*Extremely stressful*). We measured family satisfaction with the question, “How satisfied are you with your relationships with family members?” with responses ranging from 1 (*Very dissatisfied*) to 5 (*Very satisfied*). We assessed friend satisfaction with the question, “How satisfied are you with your relationships with friends?” with available responses ranging from 1 (*Very dissatisfied*) to 5 (*Very satisfied*).

3.2.3. Outcomes

The CCHS had a question asking respondents to indicate whether they had a mood disorder including depression, bipolar disorder, mania, or dysthymia, to which respondents could respond either 0 (*No*) or 1 (*Yes*). We also used mood disorder as a predictor for mental health consultations. We were particularly interested in the comparison between people with or without mood disorders.

Finally, we looked at mental healthcare access using the question, "In the past 12 months, have you seen or talked to a health professional about your emotional or mental health?" Respondents could either answer in the negative (0 = *No*) or in the affirmative (1 = *Yes*).

3.3. Procedure

Telephone interviews and personal interviews were conducted by trained interviewers who obtained consent. The CCHS questionnaire can be completed in approximately 45 minutes.

4. RESULTS

4.1. Data Analysis

All data analysis was performed with Stata 15. The 2017/2018 CCHS contained both person-level weights for point estimates and bootstrap weights for variance estimation. Unfortunately, due to the research questions under consideration, the bootstrap weights could not be employed; we could not compare the coefficients of interest for Family Satisfaction and Friend Satisfaction when variance estimation employed bootstrap weighting. However, the omission of the bootstrap weights did not substantively change the results we reported. We used binary logistic regression for predicting Mood Disorder and Mental Health Consultations. Because of correlated error terms in all models (Statistics Canada used complex random sampling and not simple random sampling), we used HC1 error corrections to estimate standard error.

4.1.1. Stress and Mood Disorder

We examined the relation between stress and mood disorder and were particularly interested in whether this relation was moderated by either Family Satisfaction or Friend Satisfaction. We regressed Mood Disorder onto covariates in Block 1, $F(27, 38432) = 69.51$, $p < .001$, which improved the overall model. Stress was added in Block 2, $F(1, 38432) = 11.99$, $p < .001$, and it positively predicted the presence of a Mood Disorder, OR = 1.14, 95% CI [1.06, 1.23]. Family Satisfaction and Friend Satisfaction were added in Block 3, $F(2, 38432) = 4.00$, $p = .018$, which significantly improved the prediction of Mood Disorder. However, neither Family Satisfaction, OR = 0.92, 95% CI [0.84, 1.02], nor Friend Satisfaction, OR = 0.93, 95% CI [0.84, 1.04], significantly predicted Mood Disorder in themselves.

We then explored the interaction term between Stress * Family Satisfaction in Block 4, $F(1, 38432) = 1.33$, $p = .249$, but the overall model was not significant. We removed the interaction term from Block 4, and replaced it with the interaction term between Stress * Friend Satisfaction, $F(1, 38432) = 0.02$, $p = .886$, which was also not significant. These two non-significant interaction terms would suggest that neither Family Satisfaction nor Friend Satisfaction buffered the relationship between Stress and Mood Disorder.

4.1.2. The Role of Family and Friend Satisfaction in Mood Disorder

We explored the *relative* importance of Family Satisfaction and Friend Satisfaction in the prediction of Mood Disorder across the lifespan. We were specifically interested in whether all age categories (12-17, 18-34, 35-49, 50-64, and 65-80+) would report equivalent estimates for Family Satisfaction and Friend Satisfaction. Given the large volume of output associated with these analyses, we will adopt a more narrative approach to this component of the results. Family Satisfaction and Friend Satisfaction did *not* predict Mood Disorder across the lifespan. The odds ratios for Family Satisfaction and Friend Satisfaction were similarly sized across the lifespan. When comparing the magnitude of effect for Family and Friend Satisfaction across the various age categories, we generally observed that their relative importance did not change.

4.1.3. Mood Disorder, Family and Friend Satisfaction, and Mental Health Consultations

We examined the relation between Mood Disorder and Mental Health Consultation, and whether this relation was moderated by either Family Satisfaction or Friend Satisfaction. We regressed Mental Health Consultations onto the covariates in Block 1, $F(25, 26447) = 35.39$, $p < .001$, which significantly improved the overall model. Mood Disorder was added in Block 2, $F(1, 26447) = 857.89$, $p < .001$, and we found that having a Mood Disorder significantly increased the likelihood of Mental Health Consultation, OR = 15.18, 95% CI [12.66, 18.22]. Both Family Satisfaction, OR = 0.76, 95% CI [0.70, 0.83], and Friend Satisfaction, OR = 0.90, 95% CI [0.81, 1.00], were added in Block 3, $F(2, 26444) = 33.03$, $p < .001$, and both were significant negative predictors of Mental Health Consultation.

We then explored the interaction term between Mood Disorder and Family Satisfaction in Block 4, $F(1, 26447) = 29.48$, $p < .001$, which further reduced the deviance of the model. The linear effect of Family Satisfaction on Mental Health Consultation for the 'Mood Disorder' group was positive, albeit non-significant, OR = 1.12, 95% CI [0.96, 1.31]. In contrast, the linear effect of Family Satisfaction on Mental Health Consultation for the 'No Mood Disorder' group was negative and significant, OR = 0.70, 95% CI [0.64, 0.76]. In other words, Mood Disorder worked in conjunction with Family Satisfaction to predict Mental Health Consultation. However, the 'gap' between the two Mood Disorder groups *increased* as Family Satisfaction increased. At the low end of Family Satisfaction, the difference between the 'No Mood Disorder' group and the 'Mood Disorder' group was, $M_{diff} = 0.27$, $t = 4.16$, $p < .001$; but at the *high* end of Family Satisfaction, the difference between the two groups was $M_{diff} = 0.55$, $t = 19.18$, $p < .001$.

We removed variables from Block 4 and added the interaction term between Mood Disorder and Friend Satisfaction, $F(1, 26447) = 8.87$, $p = .003$, which improved the overall model. Friend Satisfaction was associated with a significant *decreasing* likelihood of Mental Health Consultation in the 'No Mood Disorder' group, OR = 0.85, 95% CI [0.76, 0.95], and was associated with a positive, albeit non-significant trend in seeking Mental Health Consultation in the 'Mood Disorder' group, OR = 1.13, 95% CI [0.96, 1.34]. When comparing the 'No Mood Disorder' group and the 'Mood Disorder' group at the *lowest* level of Friend Satisfaction, the difference between the groups was significant, $M_{diff} = 0.34$, $t = 4.89$, $p < .001$. However, when comparing the same groups at the *highest* level of Friend Satisfaction the gap between the groups was noticeably larger, $M_{diff} = 0.53$, $t = 17.91$, $p < .001$.

5. DISCUSSION

The current study investigated predictors of mood disorders and mental health service use (i.e., mental health consultations). The influence of stress and social support (i.e., friend and family support) were examined in relation to the presence of a mood disorder. In addition, we explored interaction effects to determine whether the relation between mood disorder and mental health consultations was moderated by family support and friend support.

The current study found a significant positive correlation between stress and the presence of a mood disorder, which is consistent with previous studies. For example, Lathren and colleagues (2019) found significant positive relations between reports of perceived stress and anxiety and depression scores among adolescents. Moreover, Fan and colleagues (2015) found that individuals who reported either higher work or at-home stress had an increased risk of developing depression and anxiety. Nguyen and colleagues (2005) found a higher prevalence of anxiety and depressive disorders in youth under extreme stress compared to youth who experienced average stress. These results suggest that interventions targeting stress management may be beneficial to minimize the risk of developing a mood disorder. These interventions should include strategies to minimize or cope with work stressors (Hoven et al., 2021; Rugulies et al., 2017) and at-home stressors (Fan et al., 2015). Rugulies and colleagues (2017) suggested that interventions should target the psychosocial working environments and focus on establishing an effort-reward balance. In young adults, efforts should be made to develop coping strategies, such as exercising self-compassion in high stress situations. These strategies may help mitigate the daily stressors associated with the challenges individuals face during adolescence and the transition to adulthood (Lathren et al., 2019; Nguyen et al., 2005).

Results of the current study also indicate that having a mood disorder significantly increases the likelihood of seeking mental health consultations. Wang (2005) found that major depressive episodes are strongly associated with mental health service use. Research by Wang and colleagues (2005) found that clinical factors are more strongly associated with conventional mental health service use than demographic and socioeconomic factors. Researchers have also found that the likelihood of seeking help for mental health related concerns increases with problem severity (Chen et al., 2013; Urbanoski, Rush, Wild, Bassani, & Castel, 2007). Therefore, it seems that individuals with mood disorders would be more likely to seek mental health consultation compared to those who do not have mood disorders.

Researchers have also found that social support is a positive predictor of seeking mental health services in individuals with mood disorders (Gulliver et al., 2010; Marko et al., 2015; Vogel et al., 2007). Marko and colleagues (2015) found that individuals with serious psychological distress had a reduced likelihood of using mental health services if they reported lacking emotional support. However, the current study found that friend and family satisfaction (i.e., support) were significant negative predictors of mental health consultation. Similar to other contrasting findings in the literature (LeCloux et al., 2016; Maulik, et al., 2009), this negative relation may be explained by social networks acting as another means of support and care for the individual with a mood disorder. For instance, supportive social networks can improve the mental health status and decrease the need for services. In addition, social supports can act as substitutes for formal treatment by providing emotional and/or instrumental support. Due to the contradiction in the literature regarding the influence of social support, future research should continue to investigate the

role of family and friend support in individuals with mood disorders and seeking mental health consultations.

The current study also investigated interaction effects between friend and family satisfaction on mental health consultations in people with and without a mood disorder. Results of the present study showed a positive, albeit non-significant relation between friend and family satisfaction on mental health consultations for individuals with a mood disorder. Hom and colleagues (2015) propose that family and friends are key gatekeepers for individuals with mental illness to seek mental health consultations as social supports may help the individual identify their mental health problems and help them to locate services. Similarly, Lian and colleagues (2020) found that intimate partners, friends, and parents, were reported to be significant sources for help-seeking and coping by adolescents when facing a mental health concern. Therefore, individuals with mood disorders who have higher friend and family support may be more likely to seek out mental health consultations because of their social supports. Although the results in the current study were not statistically significant, our data followed a similar positive relation. On the contrary, a significant negative relation was found between family and friend satisfaction and mental health consultations for individuals without a mood disorder. Thus, in this group, family and friend satisfaction was associated with a decreasing likelihood of mental health consultation. These findings support that mood disorder works in conjunction with friend and family satisfaction to predict mental health consultations; in the absence of a mood disorder, higher satisfaction with family and friends predicted lower mental health consultations.

5.1. Limitations and Future Research Directions

A limitation in the current study included the use of cross-sectional population data. Although Statistics Canada notes that 98% of the desired population is contained within the sampling frame, individuals living on Indigenous lands and Crown Lands, those who are institutionalized, those living on Canadian Forces bases, those living in foster homes, and those living in certain remote areas are excluded from the sample. Moreover, the current study explored items from the optional modules in the CCHS and further limited the data to respondents residing in Nova Scotia and Quebec.

Since the current study used population data, our ability to design the study was limited to the data and variables already collected. The most recent population data set available to us was from the 2017-2018 collection cycle. As such, the data analyzed in this study would not have been impacted by the COVID-19 pandemic because data collection had preceded the onset of the pandemic. However, since worldwide lockdowns went into effect, the influence of COVID-19 may have greatly impacted stress, the prevalence of mood disorders, and mental health service use. For example, researchers have found that being quarantined for 14 days during the COVID-19 pandemic was a significant predictor of stress, anxiety, and depression in young adults (Al Omari et al., 2020). Moreover, researchers also found that nearly half of individuals with psychiatric conditions, including mood disorders, experienced a worsening of their symptoms during the COVID-19 pandemic (Gobbi et al., 2020). Zhen, Li, Li, and Zhou (2023) argued that lockdowns isolated adolescents from their friends, so they had to rely on their mobile devices to maintain social contact. The lockdowns also brought parents and their adolescent children into close confines for long periods of time; this close contact could either improve or exacerbate the lines of communication between them. In a large sample of 683 students, Zhen et al (2023). found a relation between social isolation and cell phone dependence in adolescents, and this relation was mediated by loneliness. Moreover, parental

communication style had a moderating effect on this relation in that more maladaptive communication patterns had stronger, positive correlations between social isolation and loneliness. These findings encourage the assessment of the influence of the pandemic on the interaction between stress, mood disorders, and mental health consultations. The results of our study can serve as a pre-pandemic "baseline" to which future waves of data collection can be compared regarding mood disorders, mental health consultations, and the role of family and friends. In addition, future studies could use a longitudinal design to explore the potential risk factors of mood disorders and the predictors of mental health service use.

6. CONCLUSION

In conclusion, mental health conditions remain a worldwide concern (WHO, 2022a). Mood and anxiety disorders are the most common types of mental illness throughout the world and in Canada (Government of Canada, 2019). Despite their prevalence, many Canadians with mood and/or anxiety disorders report that their mental health needs are not being met (Government of Canada, 2019) and many continue to avoid seeking mental health services (Government of Canada, 2014). The present study examined predictors of mood disorder and mental health consultations. Results of the current study found that stress positively predicted the presence of a mood disorder, which is in conjunction with the literature (Fan et al., 2015; Lathren et al., 2019). Moreover, individuals with a mood disorder were more likely to seek mental health consultations than individuals without a mood disorder corroborating previous research findings (Chen et al., 2013; Urbanoski et al., 2007; Wang, 2005; Wang et al., 2005). The present study also examined the influence of friend support and family support in relation to seeking mental health consultations. Independently, friend support and family support were found to be significant negative predictors of mental health consultations. However, when examined using interaction effects, non-significant positive correlations were found between friend support and family support on mental health consultations for individuals with a mood disorder. In turn, a negative relation was found between friend and family support on mental health consultations for individuals without a mood disorder. Overall, the current results add to the growing body of literature on social support and mental health service use as it provides insight to the potential importance of family and friend support to individuals without a mood disorder. However, the research pertaining to social supports in relation to mood disorders and mental health service use is mixed and remains unclear. Future research should continue to investigate this relationship to broaden the understanding of the importance of friend and family support in individuals with mood disorders.

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AUTHORS' INFORMATION

Full name: Madison Herrington
Institutional affiliation: Department of Psychology, University of New Brunswick
Institutional address: 100 Tucker Park Road, Saint John, NB E2L 4L5 Canada
Short biographical sketch: Madison is a doctor of medicine candidate at Dalhousie Medicine New Brunswick in Saint John, New Brunswick, Canada. She recently completed her Masters of Arts in Psychology at the University of New Brunswick in Saint John, New Brunswick, Canada. Madison was a SSHRC scholar who worked under the supervision of Dr. Lilly E. Both investigating predictors of ageist attitudes. She received her Bachelor of Science in Biology-Psychology from the University of New Brunswick. Madison has an interest in studying well-being across the lifespan.

Full name: David Speed
Institutional affiliation: Department of Psychology, University of New Brunswick
Institutional address: 100 Tucker Park Road, Saint John, NB E2L 4L5 Canada
Short biographical sketch: David is an Associate Professor at the University of New Brunswick in Saint John. He received his bachelor's at Brock University, his master's and doctorate at Memorial University of Newfoundland. David's primary research interests are in secularism and nonreligion, although he will research anything if it catches his eye.

Full name: Lilly E. Both
Institutional affiliation: Department of Psychology, University of New Brunswick
Institutional address: 100 Tucker Park Road, Saint John, NB E2L 4L5 Canada
Short biographical sketch: Lilly E. Both is a faculty member in the Department of Psychology at the University of New Brunswick in Saint John, New Brunswick, Canada. She received her PhD in psychology from the University of Waterloo. She teaches courses in developmental psychology. Her current research interests include peer relationships and social skills across the lifespan, the relation between personality and subjective well-being, and coping styles. She has served as Chair of the Psychology Department, Acting Associate Dean of Graduate Studies, and as an elected member of the University of New Brunswick Senate in Saint John.

Chapter #5

PERSONALITY AND MOTIVATIONS OF MALTESE CLINICAL AND COUNSELLING PSYCHOLOGISTS: THE DARKER SIDE

Greta Darmanin Kissaun & Gottfried Catania
Department of Psychology, University of Malta, Malta

ABSTRACT
The aim of the current study is to explore the personality traits and motivations of Maltese clinical and counselling psychologists, from the perspectives of their colleagues. Five clinical and five counselling psychologists were interviewed by means of the Repertory Grid Technique and data was analysed according to Repertory Grid procedures. Findings suggest that besides altruistic motives to pursue the profession, psychologists are also driven by "darker" motivators which have been under-researched so far. These include power, financial gain and the need for self-affirmation. Additionally, results underscore the existence of traits which could potentially interfere with the outcome of psychotherapy, such as unethical attitudes and behaviours, an inflated sense of self, and difficulties with empathy. These findings have pragmatic value in that they can inform reflective practice and render clinical and counselling psychologists aware of their less desirable personality traits and motivations for practicing the profession. This could prove useful both when prospective psychologists are considering entry into the profession, and to inform the personal psychotherapy and supervision of existing psychologists. The results therefore have implications for the selection, training and supervision of clinical and counselling psychologists.

Keywords: personality, motivations, clinical and counselling psychologists, repertory grid technique, reflective practice.

1. INTRODUCTION

Research on the personality and motivations of clinical and counselling psychologists has mostly focused on strengths and positive attitudes and motivations. Although theories regarding the negative traits and less desirable motivations of psychologists exist, few researchers have attempted to validate them empirically, especially in the Maltese context. The current study seeks to emphasise the importance of practitioners considering these traits in their reflective practice and addressing them in their own psychotherapy and supervision. This encourages practitioners to be self-critical and ethical in their clinical practice (Dallos & Stedmon, 2009), thus enhancing their personal growth and professional development, in line with the aims of this volume.

The present chapter builds on a previous study, presented at the conference entitled "Breaking Barriers", held at the University of Malta (Catania & Darmanin Kissaun, 2018). For the purpose of this preliminary study, the focus of which was the importance of interdisciplinary perspectives on the study of personality, five participants were interviewed and the data was not formally categorised. For the current study the number of participants was extended to ten, and the data was analysed in accordance with Repertory Grid procedures (Lemke, Clark, & Wilson, 2011).

2. BACKGROUND

Rogers (1951; 1961) laid down the ideal characteristics of psychotherapists (i.e. non-judgmental, genuine, and able to view their clients with unconditional positive regard) as being the necessary conditions of psychotherapy and the key movers of change within the client. Wampold and Carlson (2011) summarised qualities and actions of effective therapists as consisting of verbal fluency, interpersonal perception, affective modulation and expressiveness, warmth and acceptance, empathy, and focus on others. In a similar vein, the United States Bureau of Labor Statistics' Occupational Outlook Handbook outlined seven traits and skill sets which are considered necessary for an aspiring psychologist. These are analytical skills, communication skills, integrity, interpersonal skills, observational skills, patience, and problem-solving skills (Bureau of Labor Statistics, 2018). Other authors however have pointed out that this emphasis on the positive aspects of psychologists' personalities, which they often actually possess, has led to a neglect of less positive qualities. This has probably led to what Maroda (2005) referred to as the common perception of psychologists as intellectually, spiritually and morally superior. Although psychologists regularly claim that their primary motivation in choosing their profession is to help people, there is a body of knowledge that evidences that the choice of career as a helping professional is determined by multiple factors that are complex, intertwined, only partially conscious, and often not well-understood until late in the psychologist's career (Maroda, 2005; Norcross & Farber, 2005; Sussman, 2007). This indicates that perhaps psychologists might not be as aware of their "darker side" as they would like to think. Trivers (1991) stated that self-deception is also a personality trait which is deeply rooted in human nature that could, according to Sussman (2007), result in psychologists not being fully conscious of the motivations for their choice of profession. Norcross and Farber (2005) claimed that the motivation for choosing a career in mental health may arise from a need to resolve personal psychological issues and childhood struggles by means of practicing a caring profession. Sussman (2007) identified motives stemming from instinctual aims, motives related to narcissism and the development of the self, and motives involving object relations underlying psychologists' choice of profession. Norcross and Farber (2005) also asserted that the neurotic motive for healing the self is usually balanced by the less-neurotic motive of altruism, and that unconscious motives can be restrained and could even prove helpful to psychologists as long as they are aware of them. The personality of psychologists is considered to be fundamentally important since it influences the outcome of treatment. In a number of studies, the differences between types of treatment were found to be negligible when compared to the differences amongst therapists in determining the effectiveness of psychotherapy (Lutz, Leon, Martinovich, Lyons & Stiles, 2007; Wampold, 2006; Wampold & Brown, 2005). It appears, therefore, that psychologists, unlike other professionals, depend on their personhood to provide a good service to clients, rendering self-awareness of paramount importance. Increased self-awareness is one of the aims of reflective practice, that has become an essential component of training and best practice for many professionals (Dallos & Stedmon, 2009), including clinical and counselling psychologists.

Although theories regarding the negative traits of psychologists exist (e.g. Sussman, 2007), few researchers have attempted to validate them empirically. Moreover, the research in the area is relatively dated and mostly focused on strengths and values. Additionally, most of the studies we encountered have taken an etic perspective, that is they studied determinants of clinical and counselling psychologist's career choice from an outsider's perspective (Luna & Forquer Gupta, 2001). We propose that epic and emic perspectives can be considered two sides of the same coin, and both are important to obtain a more wholistic understanding of phenomena. We therefore deemed it necessary to provide a complementary emic perspective, which sheds light on the 'inside' perspectives of psychologists themselves.

3. METHOD

We deemed the repertory grid technique, with its idiographic emphasis, to be the ideal method for this study, as it is designed to help understand the nuanced differences in the manner in which psychologists view their colleagues. The repertory grid technique was developed by Kelly (1963) as a method of eliciting personal constructs, which he defined as frames of reference that are derived from individuals' upbringing and experiences. These constructs drive human beings' understanding of the world. Kelly (1955) posits that: "A construct is a way in which some things are construed as being alike and yet different from others" (p. 105). A distinctive feature of personal constructs is that they are dichotomous – e.g. an individual may perceive others as being good or bad, friendly or hostile, strong or weak, etc. (Kelly, 1955; 1963). Although essentially cognitive, constructs also have motivational and emotional qualities. This technique has also been shown to be useful in eliciting tacit knowledge (Polanyi, 1958), such as the knowledge professionals have about their own profession, which they are not necessarily conscious of. Clinical and counselling psychologists' perceptions of their colleagues could possibly shed light on what they consider to be ideal qualities that they aspire to. Traits which are perceived to be negative or undesirable to participants, and consequently repressed or denied in themselves, can also more easily be elicited by attributing them to others. Conscious thought is therefore bypassed by means of projection, a defence mechanism whereby the existence of unpleasant thoughts, impulses, and aspects of the self are attributed to others (Breuer & Freud, 1893). In sum, this research instrument allows participants to refer to their own unconscious traits and motivations whilst consciously referring to those they believe belong to their fellow professionals.

Ethical approval for the study was granted by the Research Ethics Committee of the University of Malta. Ten Maltese clinical/counselling psychologists who practice psychotherapy were recruited by means of convenience sampling. We therefore deploy the terms "psychologist" and "psychotherapist" interchangeably throughout this chapter Their informed consent and permission for the researchers to write down their responses in the grid were also obtained. Participants were fully aware of their rights to remain anonymous and to withdraw from the study without providing justification. Furthermore, participants were asked to assign pseudonyms to the psychologists they referred to during the interviews, in order to safeguard their identities. The duration of each interview was between 60 and 90 minutes. In order to elicit constructs, participants were asked to identify differences and similarities among the various exemplars (e.g. "the most empathic psychologist you are aware of", "the psychologist who has the best communication skills", etc.). Each exemplar was then rated on this construct using a seven-point scale, with the number one representing the person mostly resembling the emergent pole of the construct and the number seven denoting the person mostly resembling the opposite pole. Results were recorded in the first row of a repertory grid. This procedure was repeated using various combinations of exemplars until no new constructs were generated. Saturation was deemed to have been reached after the tenth interview, at the point when all the constructs which emerged had already been generated in previous interviews. Data was analysed following a procedure adapted from Lemke et al. (2011). The 50 unique constructs that emerged were recorded on cards. Both authors coded the constructs into categories individually, subsequently discussed them and finally generated an integrated classification. The constructs were classified into five main categories, with self-awareness (or the lack of it) being an underlying thread permeating all constructs. The final classification of categories is presented, together with their respective salient constructs in the table below.

4. FINDINGS AND DISCUSSION

Table 1.
Categories and sample constructs.

Categories	Sample Constructs	
Motivations	• Driven by financial gain • Egotistic motivation • Puts self before clients • Inflated sense of self • Power issues, manipulative • Self-absorbed • Violates boundaries • Breaches therapeutic frame	Driven by a wish to make the world a better place Altruistic motivation Puts clients' wellbeing first Insecure Aware of power issues, not manipulative Other-oriented Keeps adequate boundaries Adheres to therapeutic frame
Ethical attitudes and behaviour	• Not ethical, not mindful of professional boundaries • Unethically detached	Ethically responsible both in theory and in practice Ethically attached
Self-care and work-life balance	• Stagnant and unable to regenerate • Workaholic	Able to regenerate and care for themselves. Good work life balance – tends towards "life" rather than "work"
Congruence and authenticity	• Incongruent – personal and professional lives do not match • Shady and shifty	Congruent in their personal and professional lives Genuine and authentic

4.1. Motivations

In line with the research regarding the motivators for choice of profession (Hill et al., 2013; Wampold & Carlson, 2011), altruistic motives, such as a genuine interest in helping people, a wish to make the world a better place, and a generous disposition, were noted as possible motivators in some instances. However, participants also described "darker" motivators, such as a need for affirmation from others, that have been considered less frequently in the literature. This is in line with Sussman's (2007) proposal that psychologists possess unconscious motives for their choice of profession, those which lead them to satisfy narcissistic needs and the wish for affirmation from others. Other motivators included the quest for power, prestige and financial gain, consonant with Ng, Tam and Shue's (2011) study that found that persons with narcissistic tendencies possessed an attitude towards money characterised by the need for social power. Several authors have suggested a vast gamut of subtypes of narcissistic individuals, who do not necessarily fulfil the diagnostic criteria for Narcissistic Personality Disorder of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR, American Psychiatric Association, 2022). Authors have distinguished the grandiose/overt subtype characterised by a heightened sense of self-worth, from the vulnerable/covert type, that is recognised in the clinical literature by a lack of self-worth, feelings of helplessness, inadequacy and shame, anxiety-provoking threats to the

self, a hypersensitivity to rejection, and covert grandiose expectations for oneself and others (Caligor, Levy, & Yeomans, 2015; Gabbard, 1989; Luchner, Mirsalimi, Moser, & Jones, 2008). The DSM-5-TR classification, which coincides with the grandiose type (Caligor et al., 2015), describes narcissistic individuals as characterised by grandiosity, need for admiration, and a lack of empathy. On the other hand, it has also been postulated that, given that narcissistic individuals develop a heightened sensitivity to narcissistic injury and emotional disturbance in others, they tend to gravitate to caring professions as a choice of career (Luchner et al., 2008; Miller, 1981). Some psychotherapists possess personality characteristics associated mostly with the vulnerable/covert type that may contribute to high levels of empathy and a capacity for attunement (Glickauf-Hughes & Melhman, 1995). The main constructs elicited from our participants included psychologists' ability to be "genuinely empathic, versus self-absorbed/seen as making space for the other, but in the service of the self". However, empathy was also construed by participants as "…sometimes excessive, to the extent of enmeshment and loss of self in the psychologist". Those clinicians who have covert narcissistic reactions or tendencies might seek to fulfil needs for admiration and acceptance though their relationships with clients. Moreover, Ng et al., (2011) found that both covert and overt narcissism predicted the power-prestige dimension of money attitude, mediated by the need for social power. The relationship with covert narcissism was also mediated by the fear of negative social evaluation, confirming its socially vulnerable and hypersensitive features. In the absence of awareness, this might render the therapeutic process problematic. Luchner et al. (2008) list a number of consequences of this, among which are boundary violations and absence of the therapeutic frame, transgressions that are in line with the constructs elicited by the participants in the study. These difficulties increase the danger of ruptures in the therapeutic alliance, client drop-out, and burn-out in the therapist (Guy, Poelstra, & Stark, 1989).

4.2. Ethical Attitudes and Behaviour

Participants perceived some of their peers as not being respectful of boundaries and breaching confidentiality. Both these situations can be considered to be serious ethical breaches in their own right, according to most professional codes of ethics. However, they are possibly even more serious in the local context, given the small size of Malta and the closely-knit communities that characterise it (Abela & Sammut Scerri, 2010). This renders maintaining boundaries much more crucial, as dual relationships abound and psychologists are likely to come across clients or their relatives on a regular basis. Additionally, participants pointed out that some psychologists remain "unethically detached" from their clients during therapy in contrast to those who are "ethically, or healthily attached". This would also have implications for the conscious regulation of attachment patterns in accordance with the particular client's needs, a skill that Mallinckrodt (2010) considered to be essential. The relationship between the local culture, as measured by Hofstede's dimensions (Hofstede, 1980, 2001) and the propensity to engage in unethical behaviour has been noted in previous studies (Catania, 2014). It is therefore troubling that practitioners in the fields under consideration, where unethical behaviour can have such severe consequences on the lives of individuals, have identified ethical attitudes and behaviour as an area of concern in their colleagues.

4.3. Congruence and Authenticity

Participants mentioned genuineness, authenticity and congruence as factors affecting the therapeutic relationship. This is congruent with a number of studies that demonstrated that therapist characteristics are important determinants of effectiveness of short and

long-term psychotherapy (Ackerman & Hilsenroth, 2003; Heinonen, Lindfors, Laaksonen, & Knekt, 2012, Heinonen & Nissen-Lie, 2020). Contrarily, some clinical and counselling psychologists were described as shady, shifty, scheming and backstabbing, and participants noted discrepancies between their personal and their professional personas. Some psychologists were also seen as being keen to share their weaknesses, knowledge and expertise with their colleagues, whilst others were construed as being more guarded. Practitioners 'personal attributes such as honesty, respect, trustworthiness, warmth, and openness were found to contribute positively to their relationships with clients and colleagues (Ackerman & Hilsenroth 2003). Contrarily a lack of congruence and authenticity was considered by Rogers (1961), and more recently by Geller and Greenberg (2023), as an obstacle to building trust and openness in the therapeutic dyad.

4.4. Self-care and Work-Life Balance

Excessive stress has been found to have a variety of negative effects on workplace performance and is associated with impaired declarative memory (Kirschbaum, Wolf, May, Wippich, & Hellhammer, 1996), reduced attention and concentration (Skosnik, Chatterton, Swisher, & Park, 2000), and impaired decision-making skills (Klein, 1996). It has also been found to decrease practitioners 'ability to build strong relationships with clients (Enochs & Etzbach, 2004) which has implications for clinical and counselling psychologists' effectiveness. A growing body of evidence suggests that mental health professionals are particularly at risk for developing stress-related difficulties and burnout due to the inherently stressful nature of their role (Pakenham & Stafford-Brown, 2012). Graduate trainees in psychology also report high levels of stress and emotional distress (El-Ghoroury, Galper, Sawaqdeh, & Bufka, 2012; McKinzie, Burgoon, Altamura, & Bishop, 2006; Myers et al., 2012). These research findings suggest that elevated stress may have detrimental effects on both the personal and professional functioning of psychologists. In this regard, more than one third of the clinical psychologists in Guy et al.'s (1989) study reported that their personal distress decreased the quality of care they gave their patients. All these studies strongly point to the need for psychologists to recognise the importance of self-care, which can be defined as engaging in self-initiated practices that advance health and well-being (Posluns & Gall, 2020). Indeed, another category of constructs emerging from the participants 'statements referred to self-care and work-life balance. Participants emphasised a difference between the effectiveness of clinical and counselling psychologists who give importance to self-care, and those who do not. In fact, Posluns and Gall (2020) claim that the learning of self-care and stress-management skills is of paramount importance if psychologists are to counteract the adverse effects of stress and burnout that they are likely to experience throughout their career, and thus safeguard their clients.

5. IMPLICATIONS FOR THE TRAINING AND CLINICAL SUPERVISION OF PSYCHOLOGISTS

5.1. Reflective Practice as a Means of Promoting Self-Awareness and Self-Care

The tendency of appearing defensive, as opposed to being "free and open", was seen as a negative factor by one participant. Other participants distinguished between psychologists who were genuinely interpretative and those who were mainly "…acting out", possibly because of a lack of self-awareness. The degree of investment in the psychologists' own therapy and supervision was seen as important here, given that it increases the psychologists' reflective skills. A number of authors have emphasised the need for

psychologists to be aware of their own motivations for pursuing the profession. Without awareness of the particular historical and interpersonal dynamics that fuel motivation to become psychotherapists, clinicians may repeatedly attempt to resolve unconscious emotional and developmental conflicts by means of their profession. Grosch and Olsen (1994) exhort against the perils of unawareness of the need for admiration and affection from clients, and claim that these can lead to burnout, withdrawal, job dissatisfaction, and overworking. Other consequences of unawareness cited by these authors include ethical charges from clients and colleagues, malpractice suits, loss of licensure, an inability to practice psychotherapy, and criminal or civil litigation. Participants stated that the degree of investment in the psychologists' own therapy and supervision was important, since these increase psychologists' self-awareness and reflective skills.

Fouad et al. (2009) claimed that reflective practice implied professional self-awareness, awareness of competencies and appropriate self-care. Carmichael, Rushworth, and Fisher, (2020) further added that it involves the critical analysis of practitioners' own actions with the goal of improving their professional practice. Reflective practice is increasingly being recognised as an important aspect of numerous clinical and counselling psychology graduate programmes in various countries (Cooper & Wieckowski, 2017; Gates & Senediak, 2017; Knoetze & McCulloch, 2017). Reflective practice is recognised by the Health and Care Professions Council (HCPC, 2015) and the British Psychological Society (BPS, 2017) as a core clinical competency. The reflective practitioner model has in fact been integrated into the training programmes of clinical psychology (Carmichael et al., 2020).

In order to counter the inherent difficulties involved in practicing the profession, Jordaan, Spangenberg, Watson, and Fouche (2007) proposed coping programmes for psychologists and encouraged them to practice emotional self-care by means of psychotherapy and support groups. The Australian Psychological Society's Code of Ethics (APS, 2007) provides further support for the importance of psychologists recognising their need for self-care. This code stipulates that psychologists must ensure that "their emotional, mental, and physical state does not impair their ability to provide a competent psychological service" (p. 19). Barnett and Cooper (2009) claim that self-care should be emphasised at every stage of a psychologist's career, while Pakenham and Safford-Brown (2012) and Theriault and Gazzola (2006) recommend that self-care is specifically integrated into psychologists' training programmes from their inception. However, these authors and others (e.g. Vally, 2019) contend that self-care is usually presented to the trainee as an individual responsibility, rather than being taught directly in training programmes. Similarly, in Malta, although the necessity for self-care is recognised, courses addressing self-care are, to date, not integrated into the professional training programmes for psychologists offered by the University of Malta.

5.2. Promoting Ethical Awareness

This study has also raised concerns regarding the ethical attitudes and behaviour of psychologists in the light of the particular cultural context described above. These could be partially addressed by the creation of a Situational Judgement Test (Motowidlo, Dunnette, & Carter, 1990) that can be applied to the assessment of values and personality, and adopted in the recruitment process of psychology trainees.

6. CONCLUSION

This research sheds light on motivations and personality traits of clinical and counselling psychologists which so far have been neglected in the literature. These include the need for self-affirmation, power, and financial gain that, when compounded by a lack of awareness, could lead to unethical attitudes and behaviour. Additionally, results underscore the existence of traits such as an inflated sense of self and difficulties with empathy. Boundary violations, the breaching of the therapeutic frame, and an inability to exercise self-care could potentially interfere with the outcome of psychotherapy. Therefore, the results of this study underscore the relevance of reflective practice and the importance of promoting self-awareness in psychologists' own psychotherapy and supervision. This could shed light not only regarding their motivations to exercise the profession, but on the manner in which their own personal issues can negatively impact the outcome of psychotherapy. The findings also emphasise the importance of integrating the teaching of self-care into professional training programmes. The results also have implications for the selection, training and supervision of clinical and counselling psychologists and could prove useful when prospective psychologists are considering entry into the profession.

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AUTHORS' INFORMATION

Full name: Greta Darmanin Kissaun, PhD
Institutional affiliation: University of Malta
Institutional address: Department of Psychology, Room 244, Old Humanities Building, University Campus, tal-Qroqq, MSD 2080, Malta
Short biographical sketch: Greta Darmanin Kissaun PhD is a resident senior lecturer and former Head of Department of Psychology at the University of Malta. She trained in Clinical Psychology at the University of Padua, Italy, and earned her PhD from Regent's University, London. She is also a clinical psychologist and psychotherapist in private practice and has worked extensively with severe mental health difficulties. In her role of co-ordinator of the professional Masters programme offered by the Department of Psychology, she has been supervising trainee clinical psychologists since 2005. Her research interests include psychopathology, psychotherapy and clinical supervision and some of her research addressing these areas has been published in local and international peer reviewed journals and edited books.

Full name: Gottfried Catania, PhD
Institutional affiliation: University of Malta
Institutional address: Department of Psychology, Room 215, Old Humanities Building, University Campus, tal-Qroqq, MSD 2080, Malta
Short biographical sketch: Gottfried Catania PhD is an Academic and Organisational Psychologist, and currently the Deputy Dean of the Faculty for Social Wellbeing and Head of Department of the Department of Psychology. He has also designed, delivered and evaluated training programmes in various organisations, and is involved in consultancy in workplace settings. He is the author of a number of academic journal articles and book chapters, and has presented widely in local and foreign conferences. Dr Catania's research interests include workplace motivation, the influence of technology on workplace practices, and ethical behaviour at work.

Chapter #6

DEFENSIVE STYLES OF COPING AND ATTITUDES TOWARD EATING IN WOMEN WITH ANOREXIA NERVOSA, BULIMIA NERVOSA, BINGE EATING, AND IN WOMEN WITHOUT EATING DISORDERS DIAGNOSIS

Angelika Kleszczewska-Albińska
Management Academy of Applied Sciences, Poland

ABSTRACT
Eating disorders are tied with disturbed emotion regulation. Anorexia nervosa is connected with a tendency for emotion suppression, there is no homogeneous pattern of emotion regulation specific for bulimia nervosa, and no data on binge eating disorders. It is interesting to check whether patients suffering with various eating disorders differ in their tendency toward repression or sensitization. In the study 127 women, aged 18-69 participated. There were 61 persons without clinical diagnosis, 21 women with anorexia nervosa, 23 with bulimia nervosa, and 22 with binge eating disorder (all diagnosed by psychiatrists). Respondents filled in the Eating Disorder Inventory and Eating Attitudes Test. Results showed that for women without diagnosis low anxiety and repression were most popular, for anorexia nervosa repression was most frequent, for bulimia nervosa the most popular was high anxiety, for binge eating disorder low anxiety was the most frequent. The relations between type of disorder and defensive coping style were statistically significant. It was also proved that there were statistically significant differences between groups identified according to the coping style in their mean attitudes towards eating. It might be stated that repressors, high anxious, and sensitizers are more prone to having eating problems than low anxious persons.

Keywords: repression, sensitization, anorexia nervosa, bulimia nervosa, binge eating disorder.

1. INTRODUCTION

Eating disorders (EDs) are defined as mental disorders accompanied by abnormal eating behaviors resulting in weight changes and highly influencing quality of life and social functioning of an individual (Hay et al., 2017; Pohjolainen et al., 2016). It was proved that suicidal risks, and mortality rates are higher for people suffering eating disorders in comparison to non-clinical populations (Keski-Rahkonen & Mustelin, 2016; Smink, van Hoeken, & Hoek, 2012), with rates as high as 5%-20% (Qian et al., 2022).

Data published up to date proves that eating disorders and their related behaviors are prevalent amongst people from different groups (Calzo, Blashill, Brown, & Argenal, 2017; Hazzard, Loth, Hooper, & Becker, 2020; Murray et al., 2017; Pike & Dunne, 2015). They are chronic in their nature, with relatively early age of onset and high likelihood for relapses during a lifetime with the highest prevalence in children and adolescents but present in other age groups as well (Hay et al., 2023; Qian et al., 2022).

Among people suffering eating disorders there were discovered indicators of low parental care, insecure attachment style, and high parental control (Waller, Kennerley, & Ohanian, 2007; Ward, Ramsay, & Treasure, 2000), mediated by low self-efficacy, avoidant coping and early maladaptive schemas of defectiveness, abandonment, and

vulnerability to harm (Waller et al., 2007). According to the data published so far physical and emotional abuse were proved as predictors of eating disorders (Racine & Wildes, 2015), while emotional abuse and invalidation were perceived as predictors of severity of eating disorders (Kent, Waller, & Dagnan, 1999). Eating disorders co-occur with high levels of shame, rigid thinking patterns, perfectionism, and compulsive behaviors (Waller et al., 2007). People suffering EDs also experience high levels of negative emotions and negative affect (Blasczyk-Schiep, Adamczewska, & Funez Sokoła, 2019; Espeset, Gulliksen, Nordbø, Skårderud, & Holte, 2012; Sierra, Senín-Calderón, Roncero, & Perpiñá, 2021; Wonderlich et al., 2022).

1.1. Emotion Regulation in Eating Disorders

Emotion regulation is defined as a set of strategies used by an individual in order to recognize, initiate or modify emotions. The strategies of emotion regulation are divided into uncontrolled, automated or subjectively controlled sets of actions aimed at coping or modifying any external or internal aspect of unwanted emotional experience (Gross, 2002). Those strategies are perceived either as adaptive or maladaptive ways of coping with emotions (Gross, 2015). Adaptive emotion regulation strategies include effective and helpful techniques aimed at facing the problem and solving it, whereas maladaptive strategies usually concentrate on various avoidance-related methods (Aldao, Nolen-Hoeksema, & Schweizer, 2010). It has been proved that maladaptive emotion regulation strategies have long lasting negative effects on somatic and mental health of an individual (Leppanen, Brown, McLinden, Williams, & Tchanturia, 2022). It was also found they are connected with eating disorders (Dingemans, Danner, & Parks, 2017; Mason et al., 2021; Oldershaw, Lavender, Sallis, Stahl, & Schmidt, 2015; Patel & Schlundt, 2001).

It was proved that the tendency to overeating is correlated with experiencing high levels of negative emotions (Ogden, 2011), while restrictive eating is connected with high levels of cognitive control accompanied by low intensity of experienced emotions (Boon, Stroebe, Schut, & Jansen, 1998). Michael Macht (2008) underlined that when a person is experiencing intense emotions, they are able to either control food they'll eat, decide not to intake any food at all, experience problems with cognitive control over eaten food, decide to use food as a regulative mechanism for experienced emotions or eat because they're influenced by emotions. Affective processes can create needs of food intake or inhibit those desires. They could also be understood as an element of bilateral regulative relationship, where emotions regulate food intake, and food intake regulates emotions (e.g. Evers, Marijn Stok, & de Ridder, 2010).

Results of studies published so far emphasize that the maladaptive emotion regulation observed in people suffering from eating disorders is connected with socio-emotional factors (Prefit, Cândea, & Szentagotai-Tătar, 2019). It was discovered that patients with anorexia nervosa, in comparison to people with bulimia nervosa, had an increased tendency toward emotional suppression and cognitive reappraisal (Gross, & John, 2003). Persons diagnosed with anorexia nervosa also reported problems with acceptance of negative situations (Wolfsdorf Kamholz, Hayes, Carver, Bird Gulliver, & Perlman, 2006). Individuals with bulimia nervosa reported difficulties recognizing their emotional states. It was also proved that both anorexia nervosa and bulimia nervosa patients use very limited, inflexible strategies of emotion regulation (Gratz & Roemer, 2004). They also present low levels of emotional awareness, and acceptance of emotional responses. Interestingly, it was discovered that among patients suffering eating disorders the most effective emotional regulation, understood as general ability to exert control over unpleasant emotional states an individual experiences, was observed in patients with binge eating disorder (Brockmeyer et al., 2014).

1.2. The Concept of Defensive Styles of Coping

The term defensive styles of coping as presented in the article relates to the processes an individual employs in order to protect themselves from situations and stimuli perceived as subjectively demanding and/or threatening. This approach was proposed by Weinberger, Schwartz, & Davidson (1979), who believed that there are two different methods of defensive coping: repression and sensitization. Repression is defined as a coping strategy that aims to shield the organism from distressing stimuli by avoiding any unpleasant and/or threatening characteristics. Sensitization on the other hand includes coping strategies that aim to reduce uncertainty through approaching unpleasant and/or threatening stimuli (Myers, 2010; Myers & Derakshan, 2004). According to the presented approach repression-sensitization is often described and understood as a two-dimensional concept of dispositional coping observed in stressful, especially ego-related, situations (Krohne, 2001).

The relatively stable individual tendency to use repression or sensitization (Weinberger et al., 1979) is recognized based on subjectively assessed individual levels of anxiety (measured for example with MAS Scale or State Trait Anxiety Inventory) and social desirability (assessed for instance with Marlowe-Crowne Social Desirability Scale). In order to identify repressors and sensitizers (i.e. persons with a tendency for repression or sensitization) the median split of the results of the abovementioned scales are calculated and then combined, resulting in formation of four independent groups: repressors, truly low-anxious, truly high-anxious, and sensitizers.

It was proved that the median splits serves as an adequate method for identification of independent groups of people with varied tendencies toward defensive style of coping (see Kleszczewska-Albińska, 2011; Myers, 2010). It should be emphasized that the presented classification does not include clinical criteria of high or low anxiety levels. This categorization helps only to differentiate persons who describe themselves as individuals with certain levels of trait anxiety and social desirability that can be used for identification of a tendency for defensive coping style. According to Weinberger and colleagues (1979) repressors report experiencing low levels of anxiety with accompanying high levels of social desirability. Truly low-anxious individuals present low indexes of both anxiety and social desirability, truly high-anxious individuals experience high levels of anxiety and low levels of social desirability, whereas sensitizers describe themselves as high on both anxiety and social desirability (Weinberger et al., 1979).

According to the studies (e.g. Krohne et al., 2000; Rauch et al., 2007; Rohrmann, Hennig, & Netter, 2002) it was proved that repressors have a tendency to avoid, deny or minimize the existence of internal pressure. They underestimate the physiological signs of arousal, try to control their behavioral arousal (i.e. muscle activity), and at the same time use cognitive reinterpretations in favor of creating an unthreatening explanation of their own feelings (Myers, 2010). In result, they fail to verbalize feelings of distress and avoid concentrating on possible negative outcomes of situations (Krohne, 2001). Truly low-anxious individuals present adequate to the situation, internally coherent low levels of physiological, behavioral, and cognitive arousal, whereas truly high-anxious persons present internally coherent high levels of physiological, behavioral, and cognitive arousal. Sensitizers overestimate the physiological signs of arousal, present high levels of behavioral arousal, use cognitive processes in search for signs of real or anticipated threats, ruminate, and worry obsessively (Krohne, 2001). The general description of the four defensive styles of coping is presented in table 1. below.

Table 1.
General characteristics of defensive styles of coping identified according to the Weinberger's and colleagues (1979) typology.

Group	General characteristics
repressors (↓anxiety ↑social desirability)	High levels of physiological arousal Low levels of behavioral arousal Low levels of cognitive arousal Underestimation of threat-related stimuli Avoidance tendencies
truly low-anxious (↓anxiety ↓social desirability)	Low levels of physiological arousal Low levels of behavioral arousal Low levels of cognitive arousal Adequate interpretation of stimuli Tendencies for reactions adequate to the situations
truly high-anxious (↑anxiety ↓social desirability)	High levels of physiological arousal High levels of behavioral arousal High levels of cognitive arousal Interpretation of a stimuli in threatening manner Avoidance tendencies
sensitizers (↑anxiety ↑social desirability)	Moderate levels of physiological arousal High levels of behavioral arousal High levels of cognitive arousal Overestimation of threat-related stimuli Approach tendencies

1.3. A Foundation for Current Research

Previous research has documented that there is a connection between problems with employment of adaptive emotion regulation strategies and eating disorders (e.g. Harrison, Sullivan, Tchanturia & Treasure, 2010; Leppanen et al., 2022). There were also discovered the relationships between eating disorders and mood disorders, anxiety, personality disorders, impulse control disorders, self-injurious behaviors and substance abuse (Keski-Rahkonen & Mustelin, 2016). In some studies it was underlined that problems with emotional control may cause or uphold eating disorders, including anorexia nervosa (Harrison, Tchanturia & Treasure, 2010) and binge eating (Dingemans et al., 2017; Leehr et al., 2015).

It was discovered that the connection between eating disorders, ruminations and problems with accepting one's own emotions is stronger for people with higher BMI than it is for lower BMI levels (Leppanen et al., 2022). In other studies, it was proved that persons suffering eating disorders report problems with identifying emotions and using adaptive regulatory strategies (Trompeter, Bussey, Forbes, & Mitchison, 2021). Also, high correlations between emotional dysregulation and intensity of disordered eating behaviors (e.g. dietary restraint, binge eating) were found in both clinical and non-clinical samples (Burton & Abbott, 2019; Goodwin, Haycraft, & Meyer, 2014). It is therefore possible that problems with emotional dysregulation observed in eating disorders are also connected with defensive styles of coping as they were described by Weinberger and colleagues (1979).

According to the authors defensive styles of coping should be defined as a relatively stable (i.e. observed in various situations) individual tendency to cope with difficult, stressful or threatening situations with repression or sensitization (Weinberger et al., 1979). In other words, it was believed that people identified as repressors or sensitizers present relatively stable patterns of defensive reactions across different situations (Kleszczewska-Albińska, 2008; Myers, 2010).

Many studies proved the existence of relationship between eating disorder attitudes and/or EDs and avoidant coping, emotional detachment, and denial (e.g. Ghaderi & Scott, 2000; Macneil, Esposito-Smythers, Mehlenbeck, & Weismoore 2012; Sulkowski, Dempsey, & Dempsey, 2011; Waller et al., 2007). It was hypothesized that poor coping self-efficacy (i.e. ineffective management of life stressors) is strongly connected with eating disorders (Jáuregui Lobera, Estébanez, Santiago Fernández, Alvarez Bautista, & Garrido, 2009; Macneil et al., 2012). It was also discovered that the risk for eating pathology increases with the decrease of the belief in the ability to cope with difficult and stressful situations (Macneil et al., 2012). It is therefore interesting whether defensive coping styles as defined by Weinberger and colleagues (1979) are also related to EDs. According to the knowledge of the author of the presented article up to now no studies on relationships between eating disorders and defensive styles of coping (i.e. repression and sensitization as defined by Weinberger et al., 1979) were published in the literature.

2. METHOD

2.1. Participants

In the study participated 127 women, aged 18-69 (M=28.73; SD=7.74). Among all the respondents there were 61 persons without diagnosis (age 18-69; M=28.54; SD=8.61), 21 women with anorexia nervosa (age 18-42; M=28.19; SD=7.39), 23 respondents with bulimia nervosa (age 18-39; M=27.7; SD=6.19), and 22 persons with binge eating disorder (age 22-48; M=30.86; SD=7.05). All diagnoses were given by psychiatrists. The number of women without a clinical diagnosis who completed the study was significantly greater than the number of respondents with each type of eating disorder accounted separately $\chi^2_{(2)}$=35,99; p<.001. The respondents were similar according to the sociodemographic characteristics, so the main difference between the groups concerned the presence or absence of eating disorders.

2.2. Procedure

All the respondents suffering eating disorders were approached individually during their ambulatory visits to the mental health professionals in several different clinics. Respondents not diagnosed with eating disorders were also individually asked for participation in the study while they visited primary care physicians in different clinics. Women from the group without eating disorders diagnosis were chosen according to the sociodemographic characteristics, so they resemble respondents suffering eating disorders in terms of age, education, place of residence etc.

The respondents were approached by trained data collection psychology student who informed females waiting for their appointments with professionals about the possibility of participation in the psychological study concerning the eating attitudes and coping. Next, women who expressed their interest in learning more about the project were given details about the aim and procedure of the research. After giving an informed consent, respondents who volunteered to participate in the study were given questionnaire sets and were asked to

fill them in, and to return them to the person collecting the data. It was decided to invite females only to participate in the study, since the statistics prove that the three eating disorders analyzed in the study (i.e. anorexia nervosa, bulimia nervosa, binge eating) are more common for women than men (Statistics & Research on Eating Disorders, n.d.). The study was conducted in compliance with ethical principles.

2.3. Materials

Four standardized tests were used in the study, two for measuring different aspects of eating disorders, and two others to identify the type of defensive coping according to the approach proposed by Weinberger and colleagues (1979) that was described above. Problems concerning eating disorders were assessed with Eating Disorder Inventory (Pawłowska & Potembska, 2014) and Eating Attitudes Test (Garner, Olmsted, Bohr, & Garfinkel, 1982) in Polish adaptation authored by Rogoza, Brytek-Matera, and Garner (2016). Defensive style of coping was identified with application of two questionnaires: Polish adaptation of State Trait Anxiety Inventory (Wrześniewski, Sosnowski, Jaworowska, & Fecenec, 2011) that is used for assessing the levels of trait anxiety, and questionnaire assessing the levels of social desirability, i.e. Social Desirability Questionnaire (Drwal & Wilczyńska, 1980).

Eating Disorder Inventory (EDI) consists of 37 items with 5-point Likert scale, and it is used to identify four different attitudes towards eating: (1) negative perception of one's body; (2) overeating; (3) restrictive diet; and (4) laxativation. The questionnaire is reliable, reaching Cronbach's alpha α=.96 for negative perception of one's body; α=.97 for overeating, α=.89 for restrictive diet, and α=.94 for laxativation.

Eating Attitude Test (EAT) is used in order to describe eating habits that could be connected to anorexia nervosa, bulimia nervosa or binge eating disorder. The test includes 26 items with a 6-point Likert answer scale. It can be divided into three independent scales: (1) dieting; (2) bulimia and food preoccupation; and (3) oral control, that reach satisfactory reliability of Cronbach alphas of α=.93 for dieting, α=.84 for bulimia and food preoccupation, and α=.89 for oral control. The test results can be also analyzed without the division into certain subscales. Reaching the level of at least 20 points is considered an indicator of possible tendency for eating disorders. This latter method of interpretation of gathered results was used in the presented study.

Polish adaptation of State Trait Anxiety Inventory (STAI) was used as an instrument indicating the level of anxiety. The questionnaire includes 20 questions assessing anxiety understood as a temporary state, and 20 other questions for estimation of a relatively stable trait. Each scale includes a 4-point Likert scale. In the described study the scale measuring anxiety understood as a trait was used, and it reached a satisfactory reliability level of Cronbach's alpha α=.88.

The last questionnaire used in the presented study was the Social Desirability Questionnaire (KAS). It was used for assessment of the level of social desirability understood as an indicator of defensiveness level. The instrument includes 29 questions with a true/false response sequence. It includes items that are socially desirable but rather uncommon in society (e.g. "I am never late for my work"), and other features that are quite frequent in the society, but socially undesirable at the same time (e.g. "I remember I was pretending to be sick in order to avoid something"). The reliability of the test in the conducted study equals α=.84.

3. RESULTS

3.1. Preliminary Data Organization

Before the actual analyses were conducted four independent groups that will later be described as types varied in their tendency for defensive coping were formed. For that reason, medians for the STAI (Me=52) and KAS (*Me*=14) questionnaires were calculated, and based on the median split groups that differ in the levels of anxiety and social desirability were identified. Adequate information concerning classification of respondents in the presented study is given in table 2. below.

Table 2.
Groups identified according to their tendency for defensive style of coping.

Group	Number of people
low-anxious (↓STAI ↓KAS)	27
high-anxious (↑STAI ↓KAS)	41
repressors (↓STAI ↑KAS)	39
sensitizers (↑STAI ↑KAS)	20

As can be seen in the table above there are significant $\chi 2(3)=9.41$; $p<.05$ differences in the number of people identified as representatives of each group.

Next, the normality of the distribution of the EDI and EAT tests was verified with the Shapiro-Wilk test combined with an analysis of indexes for skewness and kurtosis. Gathered results met the criteria for normal distribution (e.g. Field, 2018; George & Mallery, 2019; Hasiloglu & Hasiloglu-Ciftciler, 2023) therefore in order to analyze the differences in the mean level of eating attitudes and eating habits it was decided to use parametric tests. While analyzing the categorical data non-parametric tests were applied (Field, 2018).

3.2. Eating Disorders and Defensive Styles of Coping

The main analyses started with verification whether there are any connections between defensive styles of coping and types of eating disorders. The crosstab with chi^2 test proved that there is a significant connection between those two variables $\chi 2(9)=53.25$; $p<.001$. Detailed information is given in table 3.

Table 3.
Number of people from low-anxious, high-anxious, repressors, and sensitizers types according to diagnosed eating disorder.

	without a diagnosis	anorexia nervosa	bulimia nervosa	binge eating
low-anxious	16	1	0	10
high-anxious	16	2	16	7
repressors	23	14	0	2
sensitizers	6	4	7	3

Next, based on the ANOVA analyses, the mean differences between the attitudes toward eating in groups identified based on defensive styles of coping were assessed. There were three significant differences that are given in detail in table 4. below.

Table 4.
Results of ANOVA analyses for mean level of attitudes toward eating, overeating and laxativation in groups identified according to defensive style of coping.

	low-anxious N=27		high-anxious N=41		repressors N=39		sensitizers N=20		F	p	η^2
	M	SD	M	SD	M	SD	M	SD			
attitudes toward eating	12.04	7.56	24.22	11.68	24.74	18.09	23.10	14.76	5.54	.001	.12
overeating	15.74	10.45	22.61	9.19	6.82	9.13	16.95	11.44	17.46	.001	.30
laxativation	1.33	2.35	7.98	7.70	3.08	3.86	7.15	7.24	9.68	.001	.19

Based on the Bonferroni post-hoc comparisons it was discovered that there were significant differences ($p<.05$) between low-anxious and high-anxious, repressors and sensitizers in their general attitudes toward eating. High-anxious had a significantly higher tendency toward overeating in comparison to repressors, low-anxious and sensitizers. High-anxious and sensitizers presented a significantly higher tendency toward laxativation in comparison to low-anxious and repressors.

Additionally it was also verified whether there is a connection between the coping style and the subjectively assessed weight perception of a respondent classified to one of three categories: underweight, normal weight, overweight or obesity. The obtained results are presented in table 5.

Table 5.
Number of people from low-anxious, high-anxious, repressors, and sensitizers types according to weight category.

	low-anxious	high-anxious	repressors	sensitizers
underweight	1	9	17	6
normal weight	14	17	19	7
overweight/ obesity	12	13	3	7

As presented in the table above there is a significant relationship between analyzed variables $\chi 2(6)=19.84$; $p<.01$.

4. DISCUSSION

The main aim of the study presented in the article was to check whether female patients suffering anorexia nervosa, bulimia nervosa or binge eating and women without eating disorders differ in their tendency toward repression or sensitization. First of all four independent groups of respondents varied in their anxiety and social desirability levels were identified. The most numerous was the group of truly high-anxious individuals, while the

least numerous was the group of sensitizers. Among the respondents there were relatively many repressors, and truly low-anxious individuals. Those results are comparable to data obtained in other studies where four types according to Weinberger and colleagues typology (1979) are identified (e.g. Asendorpf & Scherer, 1983; Kleszczewska-Albińska, 2011; Myers, 2010; Rauch et al., 2007).

A significant relationship between defensive style of coping and type of eating disorder was observed. It was noticed that among respondents, who declared not having any eating problems as well as in the group diagnosed with anorexia nervosa there were many repressors. In the group with bulimia nervosa there were many high-anxious respondents, whilst in the group diagnosed with binge eating there were many low-anxious persons. Therefore, it could be stated that the most characteristic for non clinical group and respondents diagnosed with anorexia nervosa is a tendency to avoid directing attention toward experienced feelings. People with bulimia nervosa present a propensity towards high levels of anxiety, while individuals suffering binge eating disorder present limited tendency for defensive styles of coping.

It was observed that low-anxious persons differ from other groups according to the attitudes toward eating, while high-anxious individuals have the tendency to engage in overeating. When respondents were asked to subjectively assess their weight perception the majority of low-anxious and high-anxious individuals identified themselves as having normal weight or being overweight. Interestingly, in the group of repressors most respondents identified themselves as underweight or having normal weight.

Based on the gathered results it can be therefore stated that there are differences between groups identified according to their level of defensive coping in their mean level of attitudes toward eating, overeating, and laxativation. Low-anxious individuals believed that one should listen to their body signals and eat when they're hungry. They stated it is important to taste the food they're consuming and to pay close attention to the variety of food. Beside the importance of nurturing function of the food intake low-anxious respondents suggested also interpersonal functions food should play in the life of an individual. High-anxious persons and both defensive groups, i.e. repressors and sensitizers presented disturbed attitudes toward eating. They misinterpreted body signals corresponding to hunger and satiety. The data obtained in the study leads therefore to the hypothesis that according to the general attitudes toward eating, repressors are similar to high-anxious and sensitizers.

The tendency for overeating was the most frequent for high-anxious persons, and lowest for repressors. It is possible that people experiencing high levels of anxiety use excessive engagement in eating as a strategy for regulating their unpleasant emotions. Repressors on the other hand probably underestimate the level of overeating they truly experience. The results obtained for the tendency for laxativation are the hardest to explain, especially looking at the standard deviation scores that in all cases are higher than means. Since the results in all of the groups are very discrepant, other studies in that area are needed. Another result that needs additional empirical verification concerns high tendency for keeping either extremely low or normal weight that was observed in repressors.

The results obtained in the described above study stay in agreement with the data already published in the literature. It was proved that in comparison to the general population women with eating disorders less frequently use cognitive reinterpretation strategy, and are more prone to engage in suppression of emotions (Danner, Sternheim, & Evers, 2014). Persons with bulimia nervosa have problems using any coping strategies (Dixon-Gordon, Aldao, & De Los Reyes, 2015), while for females with anorexia nervosa quite common is use of repression strategies (Ruscitti, Rufino, Goodwin, & Wagner, 2016),

and withdrawal of positive emotions (Józefik & Pilecki, 1999). It was hypothesized that disturbed relations with eating could be differentiated based on the individual strategies of coping with stress (Villa et al., 2009). Ineffective styles of coping could result in sustaining unhealthy eating habits that could lead to interpersonal conflicts (Holt & Espelage, 2002; Wiatrowska, 2009).

The results obtained in the presented above study are ambiguous and hard to interpret. There are no consistent relationships between disturbed eating habits and defensive styles of coping, so further studies in that area are needed. It is possible that better understanding of relations between eating disorders and defensive styles of coping will help professionals to plan adequate psychological interventions, that most probably should be differentiated for each of the groups identified based on their levels of anxiety and defensiveness.

5. FUTURE RESEARCH DIRECTIONS

Eating disorders are very complex phenomena strictly connected with difficulties within emotion regulation (Leppanen et al., 2022). Data from previous research shows that there is a connection between disturbed eating habits and other mental problems, such as depressive disorders or heightened anxiety levels (Spindler & Milos, 2007). It is therefore important to pay close attention to the way people with eating disorders are coping with everyday difficult and demanding situations. According to the results obtained in the study described in the article it seems important to further analyze the relationships between eating disorders and a tendency for repression or sensitization.

Such research might help to complete sets of guidelines for diagnostic procedures applied for patients with different types of disturbed relations with eating. It could also be helpful during the identification of crucial points necessary in the psychoeducation process of different patients. Based on the data gathered up to date it is believed that repressors have a tendency to avoid any threatening information concerning their health, and prefer situations in which they feel responsible for their own health. Contrary, sensitizers present a tendency to learn as much as possible about their condition, and they are willing to give away control over their health to professionals (e.g. Myers, 2010). Therefore, it seems that different information should be emphasized for repressors and sensitizers suffering from eating disorders.

The next step of analyses should concern the development and empirical verification of psychotherapeutic methods of work aimed at treatment of different eating disorders, with special attention given to binge eating. According to the results presented in the study described above this group of patients presented the most ambiguous attitudes toward eating. The conclusive data gathered in all of the above proposed studies should help mental health professionals to plan and conduct as specific and effective treatment programs for each patient suffering eating disorders as possible.

6. CONCLUSIONS

In the presented article there was conducted the analysis of relationships between a tendency for repression or sensitization and eating disorders in groups of females suffering anorexia nervosa, bulimia nervosa, binge eating, and in women from non-clinical sample. It was discovered that women recruited from the general population quite often presented a tendency toward repression. This result should draw more attention since proneness to avoidant behaviors observed in repression may be related to underestimation of disturbed

eating behaviors. Patients suffering anorexia nervosa presented high inclination for repression, while for persons diagnosed with bulimia nervosa a shift toward high anxiety was observed. Results for individuals with binge eating disorders were the most ambiguous, and cannot be easily explained given the data obtained during the study. It was proved that there are differences in the attitudes toward eating in groups of low-anxious, high-anxious, repressors, and sensitizers. These results captured similarity between a group of high-anxious individuals and two highly defensive groups, i.e. repressors and sensitizers. Based on the conducted study it is possible to presume that defensive styles of coping influence the functioning of people with eating disorders, but this hypothesis needs further empirical investigation.

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AUTHOR INFORMATION

Full name: Angelika Kleszczewska-Albińska
Institutional affiliation: Management Academy of Applied Sciences, Poland
Institutional address: Kawęczyńska 36 Street, 03-772 Warsaw, Poland
Short biographical sketch: PhD in psychology, certified cognitive-behavioral therapist, schema therapist during certification. Experienced, certified child psychologist. Working in the field of psychotherapy and counselling with children, adolescents, and adults. Specializes in research on repression and sensitization of emotional stimuli. Works mostly in clinical psychology, psychology of individual differences, and psychology of emotion.

Chapter #7

THE AESTHETIC EXPERIENCE OF DANCE IN PEOPLE LIVING WITH PSYCHOTIC ILLNESS

Maja S. Vukadinović[1,2] & Jelena Berković[3]
[1]*Novi Sad School of Business, Serbia*
[2]*The Center for the Research of Dance and the Art of Flamenco - La Sed Gitana, Novi Sad, Serbia*
[3]*Clinical center of Vojvodina, Novi Sad, Serbia*

ABSTRACT
The chapter aims at exploring the structure of the aesthetic experience of dance performances by focusing on the differences between people with psychotic illness and control group. A pilot study included the individuals without a clinical diagnosis of mental illness, people diagnosed with schizophrenia spectrum disorder (clinically stable outpatients at the time of the research) and people with bipolar disorder currently in a manic episode and subjected to hospital treatment. As stimuli, Spanish dance (*Sevillana*) was presented in the form of a short live performance. Twelve unipolar seven-point scales covering three dimensions (Dynamism, Exceptionality and Affective Evaluation) were used to measure aesthetic experience. The results showed that there are no significant differences between these groups of participants in assessing the aesthetic experience of dance. However, within the subgroups of participants, different "aesthetic profiles" singled out. The "aesthetic profiles" of clinically stable participants with schizophrenia and the control group are not significantly different, unlike that of the participants diagnosed with bipolar disorder who were hospitalized due to a current manic episode. These results are discussed in the context of the stage of the participants' mental illness. The methodological limitations of the study as well as perspectives for future research are elaborated.

Keywords: aesthetic experience, dance performance, schizophrenia, bipolar disorder.

1. INTRODUCTION

The aesthetic appreciation and the aesthetic experience are topics which have intrigued many researchers across different domains including psychology, art, design philosophy, neuroscience etc. When it comes to the appreciation of art, scientists were previously interested in researching and understanding the differences between people with psychotic illness and those without a clinical diagnosis of mental illness. In research dealing with the appreciation of visual art by individuals diagnosed with schizophrenia (Chen, Norton, & McBrain, 2008), it was suggested that the biological and behavioral processes at the root of the beauty experience are not the same in people with this mental illness as in individuals without schizophrenia. Similar findings proposing the differences in the evaluation of art between the people with psychotic illness and individuals who did not receive the diagnosis of mental illness were reported in other studies, too (Eisenman 1965; Iwamitsu et al., 2009). Former research about the way people diagnosed with mental illness show an appreciation for art mostly aimed at investigating the aesthetic preferences of visual materials such as paintings (Chen et al., 2008) and figures (Iwamitsu et al., 2009). In addition, there was some research investigating the aesthetic preferences for poems (Eisenman, 1965). Yet, the question which remained open is how people who are diagnosed with a psychotic illness react when they observe dance performances. In this chapter, we will try to address this question.

In an attempt to understand the specifics of the aesthetic experience of dance in people with mental illness, the perspective of neuroaesthetic studies offers a range of possibilities (Calvo-Merino et al., 2005; Calvo-Merino, Jola, Glaser, & Haggard, 2008; Christensen & Calvo-Merino, 2013; Cross, Hamilton, & Grafton, 2006; Cross, Kirsch, Ticini, & Schütz – Bosbach, 2011). According to Calvo-Merino and collaborators (2008), various scientists identify the neural mechanisms of aesthetic processing which participate in the aesthetic experience, the most prominent ones being the perceptual, cognitive and emotional processes (Cela-Conde et al, 2004; Kawabata & Zeki, 2004; Vartanian & Goel, 2004). As suggested by different authors, the perceptual mechanism is based on sensory and attentional regions while the cognitive and emotional mechanisms are centered around the prefrontal cortex, which includes the orbitofrontal cortex and the prefrontal dorsolateral cortex (Cela-Conde et al., 2004; Kawabata & Zeki, 2004; Vartanian & Goel, 2004). When it comes to schizophrenia and bipolar disorder, different studies indicated the existence of aberrations in the structure and function of regions considered vital for aesthetic experience.

Schizophrenia is characterized by significant impairments regarding the perceptual, cognitive, and emotional processes. Research on the symptomatology of schizophrenic disorders and their neural correlates indicates the existence of aberrations in the structure and function of regions considered vital for aesthetic experience. Thus, perceptual deficits can be seen in visual, auditory, olfactory, and somatosensory processing in schizophrenia (Butler, Silverstein, & Dakin, 2008; Javitt, 2009; Tso, Angstadt, Johnson, Diwadkar, & Taylor, 2019). According to Tso et al. (2019) an impairment in visual motion processing appears integral to schizophrenia pathophysiology and it represents a critical factor which influences social cognitive abilities. Some findings show the dysfunction of the dorsolateral prefrontal cortex (Callicott et al., 2000; Dichter, Bellion, Casp, & Belger , 2010; Smucny, Dienel, Lewis, & Carter , 2022) associated with dysfunctional working memory (Cannon et al., 2005) and abnormalities in reward processing (Gold, Waltz, Prentice, Morris, & Heerey, 2008; Whitton, Treadway, & Pizzagalli, 2015). Disturbances in a number of emotional processes, often associated with the abnormalities of the prefrontal cortex are noticed as well (Hiser & Koenigs, 2018; Maat, van Haren, Bartholomeusz, Kahn, & Cahn, 2016; Ursu et al., 2011).

Regarding the bipolar affective disorder, research also indicates the existence of aberrations in the structure and function of regions considered important for aesthetic experience. Since bipolar affective disorder is mostly defined through the impaired abilities of emotion generation and regulation (Bozikas, Tonia, Fokas, Karavatos, & Kosmidis, 2006; Green, Cahill, & Malhi, 2007; Satzer & Bond, 2016), there is a stronger basis for research on the dysfunction of the orbitofrontal cortex (Altshuler et al, 2005; Green et al. 2007; Najt et al., 2007; Wei et al., 2017). According to Satzer and Bond (2016), current models of bipolar disorder implicate the hyperactivity of the left-hemisphere reward-processing brain areas and hypoactivity of the bilateral prefrontal emotion-modulating regions. These authors propose that right-hemisphere limbic-brain hypoactivity, or a left/right imbalance, may be relevant to the pathophysiology of mania. Moreover, attention deficit is detected in people with bipolar disorder (Camelo et al., 2017; Pinna et al., 2019; Sereno & Holzman, 1996).

Based on the presented findings, it can be understood that the results of the abovementioned studies concerning people with psychotic illness could prove to be helpful when exploring the aesthetic experience in people with psychotic mental disorders. Since they suggest deficits, i.e. deteriorated neural mechanisms which also participate in aesthetic experience, differences in the aesthetic experience of dance between people with psychotic illness and those who did not receive diagnosis of mental illness could be expected. To explore these differences, we have conducted a pilot study. We used an approach which not only enables the possibility to define the structure of aesthetic experience, but it also

represents a way to determine the differences in the structure of the aesthetic experience of dance performance in people with psychotic illness and individuals without a clinical diagnosis of mental illness. This approach will be elaborated on in more detail in the following chapter.

2. BACKGROUND

Aesthetic experience is the central concept of the present study. It can be defined as a special state of mind in which a person strongly focuses on the object she or he is fascinated with while all other events are suppressed from consciousness (Beardsley, 1982; Cupchik 1974; Csikszentmihalyi, 1990; Koestler, 1970; Kubovy, 1999; Marković, 2012, 2017; Ognjenović, 2003). It includes a cognitive, affective, conative and physical component (Marković, 2017; Vukadinović & Marković, 2022). Moreover, aesthetic experience can be operationalized through a set of descriptors, which creates a possibility for further comparison between different participant groups or aesthetical objects.

Studying the structure of the aesthetic experience of paintings in a previous factorial analysis study, Polovina and Marković (2006) empirically specified a set of descriptors of aesthetic experience: fascinating, irresistible, unique, eternal, profound, exceptional, universal and unspeakable. After applying the existing descriptors of aesthetic experience suggested by Polovina and Marković (2006) and introducing other descriptors associated with dance experience, a different factor analytical research (Vukadinović & Marković, 2012) established that there are three prominent dimensions in the aesthetic experience of dance concerning the audience: Dynamism (descriptors: expressive, powerful, strong, exciting), Exceptionality (descriptors: eternal, unspeakable, unique, exceptional) and Affective Evaluation (descriptors: subtle, elegant, seductive, sensitive). The dimension of Dynamism is related to the powerfulness and expressiveness of the piece, Affective Evaluation with the elegancy of movement and emotionality with which the piece is performed, while Exceptionality is related to the admiration for the performance skills and originality of the artistic content (Vukadinović & Marković, 2012). The acquired data were used as the basis for the construction of an instrument applied in measuring the aesthetic experience of dance performances. The instrument included the three abovementioned dimensions with the given descriptors.

Further research has shown that there are differences in the audiences' aesthetic experience of dance concerning the type of dance, choreography, dancer, medium of presentation (live and recorded), the choreographer's style and the observer's identification with the story (c.f. Vukadinović, 2013; Vukadinović & Marković, 2017; Vukadinović, 2019; Vukadinović & Marković, 2022). The audience in these studies were people without a clinical diagnosis of mental illness and they differed in age, gender and previous experience in practicing and watching dance.

However, since dance is a very specific aesthetic stimulus, attempting to comprehend the aesthetic experience of dance performance of people with psychotic illness can be rather challenging and complex. Therefore, the purpose of the present pilot study is to explore the aesthetic experience of dance performances when the observers of dance are people with a psychotic illness. The first aim is to explore the differences between groups of participants – individuals without a clinical diagnosis of psychotic illness, people with schizophrenia and people with affective disorder. Furthermore, based on a set of aesthetic experience descriptors, the second aim is to try to determine the structure of the aesthetic experience of a dance performance, i.e. "aesthetic profiles" in those groups of participants.

In addition, it should be outlined that at the time when the study was conducted only some people with psychotic illness were able to take part in it. For this reason, the study included people who were in different stages of their mental illness: people with schizophrenia (clinically stable outpatients with symptoms in remission) and people with bipolar disorder (hospitalized due to a current manic episode with psychotic symptoms).

Having in mind this specificity of the sample of participants and their different stages of mental illness (acute / remission) the differences between the subgroups could be expected. More precisely, it can be hypothesized that hospitalized people with bipolar disorder who are currently in a manic episode will have higher assessments of the dimensions of the aesthetic experience of dance compared to clinically stable people with schizophrenia and the control group. Such an assumption could also be based on the fact that they are in an acute stage of mental illness as well as on previous findings that singled out altered sensory phenomena which are experienced by people diagnosed with bipolar disorder, especially during a manic episode with psychotic symptoms which normalize when they enter remission (Kéri, Benedek, & Janka, 2007; Parker, Paterson, Romano, & Graham, 2017). Considering the deficit of visual motor perception, the impairment in visual motion processing and outlined differences between people with schizophrenia and those with bipolar disorder (Chen, Levy, Sheremata, & Holzman, 2006; O'Bryan, Brenner, Hetrick, & O'Donnell, 2014; Tso et al., 2019), it can be hypothesized that people with schizophrenia in remission will evaluate the dimensions of aesthetic experience of dance with significantly lower values compared to the other subgroups of participants.

3. METHOD

3.1. Participants

The protocol used in this pilot study was approved by the Clinic of Psychiatry at the Clinical Center of Vojvodina. There were 52 participants aged between 20 and 60 years (M=38.85, SD=11.41; 63.5% women) who took part in the study. The research included three groups of people: 1–individuals without a clinical diagnosis of mental illness, 2 – individuals who were clinically stable, medicated outpatients diagnosed with schizophrenia and schizophrenia spectrum disorders and 3 – individuals diagnosed with bipolar disorder who were hospitalized due to an acute manic episode with psychotic symptoms. For individuals with mental illness, the research criteria included: 1) the diagnosis of schizophrenia or bipolar disorder (determined by a team of psychiatrists in accordance with the criteria of the ICD - 11 (ICD-11: World Health Organization [WHO], 2019/2021); 2) a history of chronic illness with multiple hospitalizations and the use of psychotropic medication. Patients with a current or past diagnosis of substance dependence (excepting caffeine and nicotine), those with a severe medical or neurological condition, or other clinical pathologies were excluded from the research.

The experimental group consisted of two subgroups of participants. The first subgroup (N=21, age between 20-58 years, M=39.23 SD=11.33; 57.1% women) included clinically stable, medicated outpatients diagnosed with schizophrenia and schizophrenia spectrum disorders. At the time of the study, the patients with schizophrenia had already been clinically stable for at least six months according to their treating psychiatrist, i.e. all patients were treated as outpatients; the treatment regimens had not been modified, and there was no essential change in psychopathology during this period.

The second subgroup (N=10, age between 20-60 years, M=41.00 SD=14.56; 80% women) was comprised of the patients diagnosed with bipolar disorder who were hospitalized due to an acute psychotic episode. Their current episode was manic with psychotic

symptoms. These patients had been hospitalized for at least two weeks prior to the study and they were all under medical treatment. All participants had already experienced manic episodes in the past, so the current one was not their first episode.

The control group (N=21, age between 20-54 years, M=37.68 SD=10.43; 64% women) was comprised of the staff at the Clinic of Psychiatry consisting of doctors and nurses. The hospital staff was without a clinical diagnosis.

The participants did not have any direct experience in dance training.

3.2. Stimuli

Four dance choreographies performed by the flamenco dance group "La Sed Gitana" from Novi Sad were used as the stimuli in this research. The performance was staged in the Clinic of Psychiatry at the Clinical Center of Vojvodina in Novi Sad. It lasted for approximately 20 minutes and all of the dance choreographies were performed by the whole group.

All four choreographies are classified as the *sevillanas* genre. *Sevillana* is a type of Spanish folk song and dance originally from Seville. The dancers performed the same choreography (*sevillanas*), while the music played to them was different:

1. *Tiempo detente*, written by José G. de Quevedo/ J.M. Moza; performed by Los Romeros de la Puebla; Album: Rocío, 1985;
2. *Sueña la Margarita*, written by A.R. Ferrera; performed by Los Rocieros; Album: Las mejor 20 Sevillanas, 2003;
3. *A la puerta de Toledo*, performed by Chiquetete; Album: Sevilla sin tu amor, 1988;
4. *Yo soy del sur*, written by F. de Juan Fernández/A. Rodríguez Ferrera; performed by Amigos de Ginés; Album: 30 Aniversario: Cantándole a las Sevillanas, 2000.

While creating the stimulus, attention was paid to the following: a) performing the dance live – there were eight dancers, with an average age of 25, who had 5 years of experience in dancing flamenco; b) performing the dance to music; c) controlling for the emotional expression in the dance stimulus through the choice of music and dance, as well as through the instructions given to the dancers who were instructed to include cheerfulness in their movements and expressions.

3.3. Instrument

Twelve unipolar seven-point scales (Vukadinović & Marković, 2012) were used to measure the aesthetic experience of dance performance. They measure three dimensions: Dynamism (expressive, powerful, strong and exciting), Exceptionality (eternal, unspeakable, unique and exceptional), and Affective Evaluation (subtle, elegant, seductive and sensitive). The Cronbach's alpha reliability of scales measuring Dynamism is α =.760, for Exceptionality it is α =.699 and for Affective evaluation α =.814.

3.4. Procedure

After they gave their informed consent to take part in the study, the participants observed the dance performance in a group. Four choreographies were presented to the participants live in a randomized order. The stimuli were observed from a distance of around 3m. When the participants finished watching the choreographies, they immediately rated the whole performance. The participants' task was to rate the entire performance consisting of the four choreographies on 12 seven-point scales containing the descriptors of aesthetic experience. All participants were asked to rate the performance on all 12 scales by marking the grade, based on their impressions of the extent of the particular descriptor expressed by the performance. They were told that grade 1 indicated the weakest and 7 the strongest intensity of a descriptor expressed by the performance. The participants were informed that

there were no correct answers. They observed the visual presentation in a group, and having finished watching the whole performance, they immediately rated their aesthetic experience. The time given to them for rating the performance was not limited.

3.5. Data Analysis

Data analysis was performed using statistical software SPSS for Windows v25.0. Descriptive statistic (*M, SD*) regarding the assessments of different groups of participants on the scales of dimensions of the aesthetic experience of dance is reported in Appendix –Table A. Due to a small number of participants and small subsamples per subgroups, non-parametrical tests were applied. In order to explore the differences in the assessment of the aesthetic experience of dance between groups, *Kruskal-Wallis Test* was applied. Moreover, with an aim to explore the structure of aesthetic experience, i.e. to investigate how the ratings of dimensions differ within each subgroup of participants, *Wilcoxon signed-ranks test* was applied. Finally, Bonferroni *p*-value correction was used.

4. RESULTS

The results of Kruskal-Wallis Test have shown that there are no differences in the assessments of the dimensions of aesthetic experience between people with psychotic illness and those without a clinical diagnosis (please see Table 1).

Table 1.
Differences between subgroups of participants in the assessment of the aesthetic experience of dance.

	Dynamism	Exceptionality	Affective evaluation
MR People with Schizophrenia, clinically stable outpatients (N = 21)	26.02	23.50	24.88
MR People with Bipolar disorder, hospitalized, current manic episode (N = 10)	29.40	36.45	35.90
MR People without clinical diagnosis, Hospital staff (N=21)	25.60	24.76	23.64
Kruskal-Wallis H (df = 2)	0.47	5.46	4.88
p	.789	.065	.087

Note: MR = mean rank.

When it comes to the structure of the aesthetic experience of a dance performance in the individuals with psychotic illnesses and control participants without a clinical diagnosis, Wilcoxon signed - Ranks Test was applied to explore the structure of aesthetic experience within each subgroup of participants.

Regarding people with schizophrenia – (clinically stable, medicated outpatients diagnosed with schizophrenia and schizophrenia spectrum disorders), the results have shown that all dimensions were assessed significantly differently (Table 2). However, not all of these differences remained significant after the p-value Bonferroni correction ($p < .016$). Namely, regarding the aesthetic experience of dance performance in these participants, the most prominent dimensions are Dynamism and Affective Evaluation, while the Exceptionality dimension has a significantly lower evaluation compared to the other two.

Table 2.
Results of Wilcoxon signed - Ranks Test, people with schizophrenia (N= 21).

Aesthetic experience (pairs of dimensions)		*Mean Rank*	*Sum of Ranks*	*Z*	*p*
Exceptionality and Dynamism	Negative Ranks	11.00	231.00	-4.02a	.000
	Positive Ranks	.00	.00		
Affective Evaluation and Dynamism	Negative Ranks	9.86	138.00	-2.30a	.022
	Positive Ranks	8.25	33.00		
Affective Evaluation and Exceptionality	Negative Ranks	5.13	20.50	-3.16b	.002
	Positive Ranks	11.84	189.50		

* a – based on positive ranks; b – based on negative ranks

When it comes to the people without a clinical diagnosis (hospital staff), the results have shown a similar profile in comparison to people with schizophrenia who are clinically stable. In other words, the most prominent dimensions are Dynamism and Affective Evaluation while the Exceptionality dimension has a significantly lower evaluation compared to the other two (please see Table 3). This difference remained significant after Bonferroni correction ($p < .016$).

Table 3.
Results of Wilcoxon signed - Ranks Test, people without a clinical diagnosis (N= 21).

Aesthetic experience (pairs of dimensions)		*Mean Rank*	*Sum of Ranks*	*Z*	*p*
Exceptionality and Dynamism	Negative Ranks	10.95	208.00	-3.85a	.000
	Positive Ranks	2.00	2.00		
Affective Evaluation and Dynamism	Negative Ranks	10.58	127.00	-1.81a	.069
	Positive Ranks	7.33	44.00		
Affective Evaluation and Exceptionality	Negative Ranks	7.25	14.50	-3.25b	.001
	Positive Ranks	10.32	175.50		

* a – based on positive ranks; b – based on negative ranks

When it comes to the participants with bipolar disorder who are hospitalized due to an acute manic episode with psychotic symptoms, there are no statistically significant differences in their evaluation of the dimensions of aesthetic experience of a dance performance (please see Table 4).

Table 4.
Results of Wilcoxon signed - Ranks Test, people with bipolar disorder (N= 10).

Aesthetic experience (pairs of dimensions)				*Z*	*p*
		Mean Rank	*Sum of Ranks*		
Exceptionality and Dynamism	Negative Ranks	6.40	32.00	-1.13a	.258
	Positive Ranks	3.25	13.00		
Affective Evaluation and Dynamism	Negative Ranks	5.13	20.50	-0.25a	.725
	Positive Ranks	3.88	15.50		
Affective Evaluation and Exceptionality	Negative Ranks	3.50	10.50	-1.42b	.154
	Positive Ranks	5.75	34.50		

* a-based on positive ranks; b – based on negative ranks

As reported in Table 1, the results have shown that there are no significant differences between different subgroups of participants (people with schizophrenia, people with bipolar disorder currently in a manic episode and those without a clinical diagnosis). However, it can be noticed that the structure of aesthetic experience of dance varies within each subgroup of participants (Table 2, 3 and 4).

5. DISCUSSION

Since currently there is not much empirical data on the aesthetic experience of dance performance in individuals with psychotic illness, it is important to bear in mind the link between the specific symptoms of people with schizophrenia and bipolar disorder on one hand, and neural mechanisms considered to be at the root of aesthetic experience on the other. From the perspective of neurological and neurocognitive studies, several types of impairments of perceptive, cognitive and emotional processes were detected in individuals with schizophrenia and bipolar disorder (Bozikas et al., 2006; Butler et al., 2008; Callicott et al., 2000; Cannon et al., 2005; Dichter et al., 2010; Gold et al., 2008; Green et al., 2007; Hiser & Koenigs, 2018; Hu et al., 2017; Javitt, 2009; Lin et al., 2013; Liu et al., 2015; Maat et al., 2016; Najt et al., 2007; Pinna et al., 2019; Smucni et al., 2022; Satzer & Bond, 2016; Tso et al., 2019; Wei et al., 2017; Whitton et al., 2015; Zhang et al., 2012).

The neural mechanisms supporting these processes participate in the formation of aesthetic experience (Cela-Conde et al., 2004; Kawabata & Zeki, 2004; Vartanian & Goel, 2004). Based on the findings of the aforementioned research, it was assumed that there should

be differences between the control group and the experimental groups, not only in aesthetic preferences, but in the structure of aesthetic experience as well. However, the results have shown that there are no differences in the aesthetic experience of a dance performance among the groups of participants. In addition, since aesthetic experience was evaluated through the three dimensions – Dynamism, Exceptionality and Affective Evaluation which comprise its structure, the results have shown that the structure of aesthetic experience varies within each subgroup of participants.

Regarding the main result of the present pilot study which has shown that there are no significant differences between subgroups of participants, there are a few possible interpretations. One interpretation is related to the fact that the result is rather unexpected since previous research into aesthetic preferences in the perception and appreciation of different stimulus types in individuals with mental illness consistently showed the existence of differences, especially in the case of people with schizophrenia when compared to those without a clinical diagnosis of mental illness (Chen, Norton et al., 2008; Eisenman, 1965; Iwamitsu et al., 2009; Maher et al., 2019; Norton, McBain, Öngür, & Chen, 2011). In order to better understand the results of present study, the findings of Chen, Norton et al. (2008) as well as of Chen et al. (2008) about the specific nature of aesthetic experience in individuals diagnosed with schizophrenia could be helpful. Namely, these authors found that individuals diagnosed with schizophrenia have a lower activation of the occipital region and a higher activation of one region in the prefrontal cortex, unlike people without mental illness. This indicates the activation of different cognitive processes. However, these authors proposed that there is no difference in the appreciation of visual art between individuals with schizophrenia and those without a clinical diagnosis of mental illness. Regarding the subgroup of people with bipolar disorder, the differences in the assessments of the dimensions of aesthetic experience were also expected since the participants were in a manic phase of their cycle which is accompanied by grandiosity, racing thoughts and pathological elevation in energy (Greenwood, Chow, Gur, & Kelsoe, 2022). Moreover, the differences were expected especially considering the symptomatology of bipolar disorder which is mostly characterized by dysfunctional emotional regulation (Bozikas et al., 2006; Green et al., 2007; Townsend & Altshuler, 2012), structural changes in the brain, such as the increase of amygdala volume compared to people with schizophrenia and control participants (Altshuler et al., 2000), as well as the increased limbic activity during the perception of emotion (Green et al., 2007; Wessa, Kanske, & Linke, 2014). However, the results of the present study did not indicate significant differences in the aesthetic experience of a dance performance between hospitalized people with bipolar disorder in a manic episode and the other two groups of participants (clinically stable outpatients with schizophrenia and the control group). Based on this evidence, it could be assumed that a person with psychotic illness can evaluate dance in the same way as a person without a clinical diagnosis despite their differences in the neural processes which participate in the perception of movement. A person with psychotic illness can also create the aesthetic experience which will not be different from the aesthetic experience of individuals without any mental health issues. Nevertheless, this interpretation should be taken with reservation and a few important elements should be singled out and taken into account in order to better understand the findings of this study.

Another more probable possibility is that the interpretation of the obtained results which indicates the absence of significant differences between the subgroups of participants is most likely related to two major characteristics of the sample. The first is that the sample of participants per subgroup was very small which not only limited the generalizability of the study but it could also have influenced the obtained results by not showing the expected

differences. The second major point related to the sample is that the participants from the experimental group were in different phases of their mental illness. People with schizophrenia had been clinically stable for at least six months prior to the research. They were treated as outpatients, the treatment regimens were not modified, and there was no essential change in psychopathology during this period. People with bipolar disorder participated in the research during an acute phase of their condition. They were hospitalized due to an acute manic episode with psychotic symptoms. Since they were in hospital, they were under medical treatment which could have suppressed their symptoms and therefore influenced the results in such a way that there seems to be no difference between them and people with schizophrenia who were clinically stable and people without a clinical diagnosis of mental illness. However, this explanation should also be taken with reservation since the medication factor, the degree of the improvement of their state during hospitalization as well as the reduction of manic symptoms were not controlled for.

5.1. The Analysis of the "Aesthetic Profiles" within Subgroups of Participants

Although there are no significant differences between the subgroups of participants, when assessing the aesthetic experience of dance, their "aesthetic profile" is different when it is observed within each subgroup. To be more specific, when the ratings of the given dimensions of aesthetic experience are considered within the participant subgroups, in both the control group and the group of clinically stable individuals diagnosed with schizophrenia, the most prominent dimensions of the aesthetic experience of dance performance are Dynamism and Affective Evaluation, while the dimension of Exceptionality is assessed with significantly lower values. Regarding the group of people with bipolar disorder who are hospitalized in a manic episode of their cycle, there are no statistically significant differences in their evaluation of the dimensions of the aesthetic experience of a dance performance. In addition, all dimensions were assessed with relatively high values.

In an attempt to interpret these findings, it is important to note that the group of individuals with schizophrenia was comprised of patients in remission and to take into account the differences which exist between them and the patients in the acute phase. For instance, according to Mendrek et al. (2004), the research on the dorsolateral prefrontal cortex in patients who are in remission indicates the hypoactivation of this region, as well as the parallel hypoactivation of other brain regions. These authors propose that such findings can be viewed as a specific compensatory mechanism, i.e. the use of other cognitive strategies which a person employs to try and solve a task and surmount the obstacles arising from the consequences of the impairments to the working memory function.

Moreover, since the results of numerous studies show that there are at least three types of processes involved in aesthetic experience – perceptual, cognitive, and affective (Calvo-Merino et al., 2008; Cela-Conde et al., 2004; Di Dio, Macaluso, & Rizzolatti, 2007; Kawabata & Zeki, 2004; Nadal, Munar., Capó, Rosselló, & Cela – Conde, 2008; Vartanian & Goel, 2004) – the formation of the aesthetic experience by individuals suffering from psychotic illness can be viewed from the perspective of affective processes incited by aesthetic stimuli. The results of research on cognitive and affective processes indicate that affective processes associated with amygdala (Di Dio et al., 2007) play an important role in aesthetic preference since they are integrated with cognitive processes involved in reaching a decision on the beauty of a visual stimulus (Nadal et al., 2008). Bearing this in mind, the characteristics of affective processes in individuals with psychotic illness should be remarked upon. Research into the affective processes in individuals with schizophrenia indicates that there is a deficit in the expressive component of emotional reactions in these individuals (Kring & Moran 2008). People with schizophrenia contract their facial muscles in accordance

with the emotional reaction compatible to the stimulus, but their amplitude is low and unnoticeable to the observer (Earnst et al., 1996; Mattes, Schneider, Heimann, & Birbaumer, 1995). The decreased expressiveness in reactions is in correlation with the symptoms of the flattened affect and anhedonia (Tremeau, 2006). Nevertheless, the subjective experience of emotion and the physiological response to it are not significantly different from those of people without a clinical diagnosis of psychotic illness (Kring & Moran, 2008). Extrapolating from these findings, it is very likely that people with schizophrenia have a similar experience of dance performance as individuals without a clinical diagnosis of psychotic illness, which is also indicated by the results of this research.

Regarding the "aesthetic profile" of people with bipolar disorder who are hospitalized due to a current manic episode, the results have shown that Dynamism, Affective evaluation and Exceptionality do not differ significantly. These findings indicate that in the assessments of aesthetic experience no dimension singles out, i.e. they are all equally highly rated. Concerning the people with bipolar disorder, there is no difference in the dimensions of aesthetic experience such as the ones noted in people with schizophrenia and the control group of participants.

Recent study of Van Rheenen et al. (2017) noted that there are quantitative but not qualitative differences in cognition between people with schizophrenia and those with bipolar disorder which can relatively explain the results obtained in this study. In addition, these results could be understood in light of the fact that compared to depression which is associated with low energy and feelings of hopelessness and sadness, mania is accompanied by grandiosity, racing thoughts and pathological elevation in energy (Greenwood et al., 2022). Moreover, even though the participants of this subgroup were hospitalized due to an acute manic episode, the absence of differences in aesthetic experience compared to other subgroups of participants could be explained with previous findings which have shown that people with bipolar disorder do not show deficits regarding the tasks that are related to creativity and other cognitive functions (Bora, Yucel, & Pantelis, 2009; Burdick et al., 2014; Greenwood et al., 2022; Van Rheenen et al., 2017). Nevertheless, the question of aesthetic experience in people with bipolar disorder who are in an acute depressive episode remains as an open question for future studies.

5.2. Specific Nature of Dance used as Stimuli

Finally, it is interesting to discuss the results of this research within the context of the art of dance as such. According to flamenco dance classification (Blas Vega & Rios Ruiz, 1988; Molina & Mairena, 1963), the stimulus used in the research – a dance in the *sevillanas* form – represents a "flamencoed" song and dance. Hence, the expressive richness of flamenco is one of the dominant characteristics of the stimulus. Since the *sevillanas* form is the most vivacious and joyful Andalusian dance (Gamboa, 2011), it could be assumed that the very type of stimulus shapes the evaluation of aesthetic experience in the observers. The context of flamenco art within which this dance form is often defined (Blas Vega & Rios Ruiz, 1988; Candelori & Díaz, 1998) insists on an effusive and rich emotional expression, numerous gestures, and a strong expression of emotional experience (Candelori & Díaz, 1998; Gómez Muñoz, 2008; Guerrero Pantoja, 2008). Communicating feelings is not just one of the basic characteristics of flamenco but the very aim of this dance (Gómez Muñoz, 2008).

Since the assessments of all dimensions of aesthetic experience are relatively high, almost in the upper limits (see Appendix Table A), the results of this research could perhaps be ascribed to the specific nature of the stimulus, the *sevillanas* dance, considering the fact that other dance forms express different contents through their formal characteristics and emphasize the difference in the observer's experience (Vukadinović, 2019). For example,

classical ballet demands harmony, symmetry and restraint from ballet dancers (Au, 2002; Laws, 2002), while the basic concept of modern ballet could be defined as the expression of human existence (Press & Warburton, 2007; Au, 2002; Huxley, 1994; Jowitt, 1994) and the complexity of human nature (Huxley, 1994; Jowitt, 1994; Graham, 1991; Duncan, 1981).

By all means, no matter the form, dance can have an important role in the treatment of people with psychotic illness. In this sense, the implications of the findings of this study as well as the importance of dance as a possible tool for improving mental health conditions will be elaborated in more detail.

5.3. Implications of the Present Pilot Study

According to Rose, Müllensiefen, Lovatt, and Orgs (2020) people can be engaged in dance by only observing it or by participating in it. Regarding the people with mental illness, most studies explore dance as a participatory activity. They look into how the use of dance in the context of dance therapy may reduce psychiatric symptoms (Bryl, 2018; Martin, Koch, Hirjak, & Fuchs, 2016; Priebe et al., 2016; Ren & Xia, 2013). The results of such studies suggest that dance therapy may improve psychosocial functioning and that it can be effective in reducing psychotic symptoms in people with mental illness, especially those with schizophrenia (Millman et al., 2021). Having this, as well as the results of the present study in mind, some clinical implications should be mentioned. Beside the fact that dance as a participatory activity could be helpful in reducing the psychotic symptoms as aforementioned studies showed, the findings of this study suggest that dance as an observatory activity is well received by the participants. Its further use may be focused on stimulating or inspiring creativity which has been shown to be related to bipolar spectrum traits (Greenwood et al., 2022; Kyaga et al., 2013). Moreover, engaging people with mental illness in observation of dance, especially its vivacious forms, as one of the possible creative occupations could be beneficial for them in the sense of improving the quality of their everyday life. This implication could be advisable especially for outpatients with psychotic illness since recent research of Killick and Greenwood (2019) suggested that art therapy group for people with long term psychotic illness may help them turn difficult feelings into manageable ones and in that way improve their relationships.

5.4. Summary of the Findings and some Methodological Problems

Generally speaking, the conclusion of this pilot study is that the absence of the differences in the aesthetic experience of dance between subgroups of participants could be ascribed to the fact that the participants diagnosed with schizophrenia are in successful remission so their experience is not significantly different from the experience of individuals without a clinical diagnosis of psychotic illness. On the other hand, the absence of differences in the aesthetic experience of people with bipolar disorder who are hospitalized due to a current manic episode in comparison to other groups of participants could be explained in light of the recent findings of Greenwood et al. (2022) which state that these people do not show deficits regarding the tasks that have been related to creativity and other cognitive functions.

Another conclusion is that the structure of aesthetic experience, i.e. “aesthetic profile” in both the clinically stable participants diagnosed with schizophrenia and the control group is not significantly different (the most prominent dimensions are Dynamism and Affective Evaluation), considering the fact that the former are in remission and no longer hospitalized, Unlike these two groups the participants diagnosed with bipolar affective disorder have “aesthetic profile” which is not differentiated (all dimensions of aesthetic experience were equally assessed).

However, there are important methodological problems which make the generalization of these results very difficult. Some of them have already been mentioned and discussed, such as for instance the relatively small number of participants per subgroup, the heterogeneity of the symptomatology in the experimental participant subgroups and different stages of the participants' illness (remission and acute stage). Beside these, other limitations include the specific nature of the stimulus; the impossibility of comparing the stimulus with other stimuli of the same type (only one type of dance was used as a stimulus); the difficulties in controlling for the variables (the medication factor was not controlled for); the difficulties in translating experience into verbal expression; and conducting the evaluation in accordance with the scale of the participants diagnosed with a mental disorder.

Despite the methodological problems, the conclusion is that this research provided a significant insight into some aspects of the aesthetic experience of a dance performance in people living with mental illness such as schizophrenia and bipolar disorder and it mapped the field for its further investigation.

6. GENERAL CONCLUSION

Taking into consideration all of the possible forms of experiencing dance, it can be noted that this is a very complex phenomenon where different aspects overlap – the aesthetic, emotional, somatic, cognitive and motivational aspect. The aesthetic experience of dance represents just one possible aspect of experiencing dance. Moreover, aesthetic experience still represents a relatively vague concept. This is especially true when it comes to findings on the manner in which the cognitive system integrates dance and music into complete aesthetic experience (Christensen & Calvo-Merino 2013). Also, there is not much research on aesthetic experience, especially in relation to art forms such as dance. On the other hand, the aesthetic experience and appreciation of art by individuals with psychotic illness are also areas which have not been sufficiently researched. Consequently, the attempt to investigate the aesthetic experience of individuals living with psychosis is extremely demanding.

The questions which arose from our small pilot study presented in this chapter may map the field for some future research into the aesthetic experience of dance in individuals with a psychotic illness. For example, what would the aesthetic experience of a dance performance in individuals with schizophrenia in the acute stage of illness be? And what about the people with bipolar disorder who are in remission? Are there any differences in the aesthetic experience of dance performance in these stated cases when compared to the people without mental health issues? These questions remain to be answered and empirically tested.

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APPENDIX

Table A.

Descriptive statistic (M, SD) regarding the assessments of different groups of participants on the scales of dimensions of the aesthetic experience of dance.

	Aesthetic experience					
	Dynamism		Exceptionality		Affective evaluation	
	M	*SD*	*M*	*SD*	*M*	*SD*
People with Schizophrenia, clinically stable outpatients	6.26	0.61	4.71	1.24	5.64	1.05
People with Bipolar disorder, hospitalized, current manic episode	6.47	0.36	5.82	1.13	6.35	0.77
People without clinical diagnosis – hospital staff	5.98	1.03	4.84	1.12	5.51	1.26

AUTHORS' INFORMATION

Full name: Maja S. Vukadinović
Institutional affiliation: Novi Sad School of Business
Institutional address: Vladimira Perića – Valtera 4, Novi Sad 21000, Serbia
Biographical sketch: Maja S. Vukadinović holds a PhD in psychology. She is a senior research associate and a professor of vocational studies - subject psychology. She is a founder, choreographer and pedagogue in The Center for the Research of Dance and the Art of Flamenco - La Sed Gitana, Novi Sad. Her main area of interest is the psychology of art. She has published papers in national and international journals and 3 monographs: Flamenco – Between Silence and Scream (2002), Experience of a Work of Art in Psychology of Artistic Creation (2017), The Psychology of Dance (2019).

Full name: Jelena Berklović
Institutional affiliation: Clinical Center of Vojvodina
Institutional address: Hajduk Veljkova 1-9 Novi Sad 21000, Serbia
Biographical sketch: Jelena Berklović holds an MD in psychology and a specialization in medical psychology. She works as a clinical psychologist at the Clinic of Psychiatry in Novi Sad. She is one of the founders of The Center for Psychotherapy and Counselling *Savetovaliste Kontakt*. Her main areas of interest are clinical psychology and psychotherapy.

Chapter #8

THE FEAR OF CORONAVIRUS-19, EMIGRATION INTENTIONS AND ADOLESCENT ALCOHOL CONSUMPTION

Oľga Orosová[1], Beáta Gajdošová[1], Jozef Benka[1], & Viera Čurová[2]
Pavol Jozef Šafárik University in Košice, The Slovak Republic
[1]Department of Educational Psychology and Health Psychology
[2]Department of Psychology, Faculty of Arts

ABSTRACT
The aims of this study were to investigate (i) the relationship between pre-departure alcohol consumption and post-pandemic emigration intentions to study abroad among Slovak adolescents, (ii) the internal mechanism of the associations between the fear of Coronavirus-19 and the pre-departure health indicators related to the Coronavirus-19 pandemic measures in adolescents (emigration intentions and alcohol consumption). A cross-sectional survey design was used. A paper and pencil and online survey were carried out between October and November 2021 on a total sample of 296 adolescents from the eastern part of Slovakia (50.7% girls, M= 17.7 years). A higher level of post-pandemic study abroad intention was found among girls and adolescents who reported alcohol consumption. The data supported a long-way serial mediation (fear of Coronavirus-19 → self-efficacy → negative affect → emigration intentions → alcohol consumption). A direct negative effect of the fear of Coronavirus-19 on alcohol consumption was confirmed. This study contributes to the understanding of the pre-departure migration – health indicators relationship. Innovative school-based prevention programs would benefit from such knowledge and should incorporate supporting general self-efficacy, health-related behaviour and a healthy openness to new experience among adolescents before they leave their home countries.

Keywords: emigration intentions, alcohol consumption, adolescents, Coronavirus-19.

1. INTRODUCTION

Individuals vary in the extent to which they are able to withstand the Coronavirus-19 post/pandemic period of life and how they perceive their future prospects (Simon, Schwartz, & Hudson, 2021). The Coronavirus-19 pandemic disrupted the normal day-to-day life of adolescents and affected their health behaviors in complex ways (O'Rourke et al., 2022). Therefore, adolescents' alcohol and other drug use norms and alcohol and other drug use should be explored as part of a comprehensive innovative preventive approach including the collection of pre-migration data (Salas-Wright & Schwartz, 2019).

A literature-based review showed that young people show high motivation to migrate **(**Șerban-Oprescu et al., 2021). It also showed that higher education increases this interest as well as the influence of socio-psychological factors (family, challenges, opportunities, employment conditions, quality of life, desire for change, social environment, degree of development of society, individual freedom, values, traditions, etc.) **(**Șerban-Oprescu et al.,

2021). In terms of the post-Covid world, "migration remains a first-hand phenomenon to be on focus of research" (Xhelili, Ollogu, Sulejmani, & Aliu, 2022, p. 287).

Young people aged 15 to 29 in the V4 countries (Poland, Czech Republic, Hungary, Slovakia) reported a fundamental dissatisfaction with the quality of education. A quarter (26.8%) of young people in the V4 countries could not imagine migrating for more than six months while 23% reported a strong / very strong desire to migrate with 26% likely to do so within the next two years (Harring, Lamby, Bíró-Nagy, & Szabó, 2022). Slovak young people (19%) reported a strong / very strong desire to migrate, and one-third (33.3%) would like to do so within the next two years (Harring et al., 2022). Indeed, "Slovakia is third in the OECD in terms of the number of young people leaving to study abroad" (Bleha & Sprocha, 2020, p. 151). The interest of the most successful Slovak graduates to study at foreign universities has been increasing for a long time (Martinák & Varsik, 2020).

In general, Slovak emigrants can be described as "…mostly young and educated" (Machlica, Toman, Haluš, & Martinák, 2017, p. 27) and emigration intentions have been associated with a lack of sufficient business activities and economic development of some of the Slovak regions (Přívara, 2021). Slovakia is a country which has faced a significant brain-drain and outflow of qualified workers abroad (Grenčiková, Skačkauskienė, & Španková, 2018). Graduates, and especially those from the areas that generally suffer from unemployment, have migrated to more economically developed parts of Slovakia or abroad (Svabova & Kramarova, 2022). An additional important factor can be seen in the significant impact of the Coronavirus-19 pandemic on the development of unemployment in the Slovak Republic (Svabova, Metzker, & Pisula, 2020, Svabova, Tesarova, Durica, & Strakova, 2021).

Grounded in: (i) Migration Change Model (Tabor & Milfont, 2011) and Zimmerman et al.'s migration-health framework (Zimmerman, Kiss, & Hossain, 2011), we examine adolescents' pre-departure migration-health indicators (emigration intentions and alcohol consumption) related to the fear of Coronavirus-19. Emigration intentions have been conceptualized in terms of frequency with which individuals had thought about working or living in another country for the reasons of education, better job prospects, setting up a business, working and living in another country for an extended period of time or emigrating to another country to live there permanently (Chan-Hoong & Soon, 2011). E/migration can be described as a process that begins well before one leaves their home country and the examination of these pre-departure experiences are important for understanding the context of migration (Tabor & Milfont, 2011). There are certain pre-departure health indicators which affect young people long after arriving at their destination (Gushulak & MacPherson, 2011). It was found that Coronavirus-19 pandemic stressors contributed to negative mental health outcomes such as distress, anxiety, infection fear/worry, traumatic stress, depression in addition to substance use and alcohol consumption among adolescents (Boden et al., 2021, Chretien, Minegishi, Cox, & Weitzman, 2022). The frequency of alcohol use, occurrence of depressive and anxious symptoms, and general levels of fear and concerns regarding the impact of Covid-19 on their lives have increased (Samji et al., 2022, Dumas, Ellis, & Litt, 2020). Indeed, the current rates of alcohol consumption among adolescents have likely been affected by the Covid-19 pandemic (Dumas et al., 2020, Hviid, Pisinger, Hoffman, Rosing, & Tolstrup, 2022, Rogés et al, 2021, Pelham III et al., 2021). However, the results of the systematic review on trends of alcohol consumption temporally associated with the Coronavirus-19 lockdowns showed that most samples were drawn from either the general population (e.g. social media users), university students, or regular drinkers, and the majority of the studies found that alcohol consumption prevalence increased during lockdown **(**Martellucci,

Martellucci, Flacco, & Manzoli, 2021). (ii) Health belief model in the context of the Coronavirus-19 pandemic (Walrave, Waeterloos, & Ponnet, 2020), we tested the internal mechanism (self-efficacy, negative emotions) of the associations between the fear of Coronavirus-19 and the pre-departure migration-health indicators related to the Coronavirus-19 pandemic (emigration intentions and alcohol consumption) among adolescents. Self-efficacy beliefs regulate human functioning, affect how people think and feel as well as making a difference in the quality of individuals' emotional life and decision-making (Bandura, 2002; Luszczynska, Gutiérrez-Doña, & Schwarzer, 2005). General self-efficacy can be explained as the belief in an individual's competence in their effective dealing with a variety of demands or stressful situations, as a broad pattern of successful coping with life (Luszczynska et al., 2005; Schwarzer, Boehmer, Luszczynska, Mohamed, & Knoll, 2005). It has been found that a low sense of self-efficacy is associated with negative emotions (Luszczynska et al., 2005) and general self-efficacy may have played a crucial role in coping behaviors and mental health during the Coronavirus-19 pandemic (Zhou, Yue, Zhang, Shangguan, & Zhang, 2021). It is important to take into account that adolescents have fewer coping strategies for emergency situations and are more vulnerable to mental illness when compared to adults (Garnefski, Legerstee, Kraaij, van Den Kommer, & Teerds, 2002).

This study aimed to explore the serial mediation model and test the internal mechanism of the associations between the fear of Coronavirus-19 and the pre-departure migration-health indicators related to the Coronavirus-19 pandemic measures on adolescents (emigration intentions and alcohol consumption). A serial mediating role of self-efficacy and negative emotions was hypothesised in line with previous findings which have shown the association between self-efficacy and successful migratory adaptation (Bandura, 2002), a negative impact of the fear of Coronavirus-19 on general self-efficacy (Yenen & Çarkit, 2023), as well as findings that have indicated self-efficacy and subjective well-being as being important factors in coping with Covid-19 (Jian, Hu, Zong, & Tang, 2022; Wen et al., 2022; Burrai et al., 2021; Cattelino et al, 2021). The extended hypothesised serial mediating role of self-efficacy and negative emotions with emigration intentions is in line with previous findings that have shown the association between the Coronavirus-19 pandemic and alcohol consumption, as well as between emigration intentions and alcohol consumption (Marsiglia el al., 2021).

2. DESIGN

A cross-sectional questionnaire study.

3. OBJECTIVE

The aim of the study was to investigate (i) the relationship between pre-departure alcohol consumption and post-pandemic emigration intentions to study abroad among Slovak adolescents, (ii) to propose the serial mediation model and test the internal mechanism of the associations between the fear of Coronavirus-19 and the pre-departure migration-health indicators related to the Coronavirus-19 pandemic measures on adolescents (emigration intentions and alcohol consumption).

4. METHODS

4.1. Sample and Procedure

The data collection among secondary school students took place between October and November 2021. Due to the ongoing second wave of Coronavirus-19 and the tightened measures at the time of data collection, the ongoing data collection was no longer possible in the paper and pencil format and had to be carried out exclusively online. Eleven secondary schools that provide general secondary education and prepare students for further study at universities and other higher education institutions were invited to collaborate on data collection via email. Nine secondary schools accepted this proposal to collaborate. These schools were asked to distribute the information about the survey and the questionnaires among their students. The questionnaires were distributed in person (the first 4 schools) and a link to an online form of the questionnaire (other schools) to their third-year and fourth-year students through school websites, information systems, official Facebook pages or during online lessons. Filling in the questionnaire was completely voluntary and anonymous. In total, data from 321 students who provided informed consent were obtained. Respondents who provided missing data were excluded from further analyses. The final sample of the study consisted of 296 respondents (50.7% girls, M= 17.7 years). The protocol of this study was reviewed and approved by the Ethics Committee at the Faculty of Arts of P. J. Šafárik University.

4.2. Measures

Emigration intentions in the post Coronavirus-19 period or intentions to emigrate were measured on a 6-item scale (Chan-Hoong & Soon, 2011) which required respondents to rate the frequency with which they thought about working or living in another country for the following reasons: (1) overseas education, (2) better job prospects, (3) setting up a business, (4) working and living in another country for 3 months or less, (5) working and living in another country for more than 3 months, and (6) emigrating to another country to live there permanently. Each of these six measurements were scored on a 5-item Likert scale from 1 (*never*) to 5 (*all the time*). The total score was calculated by adding up each item score (ranging from 6 to 30). Cronbach´s alpha was 0.920. A higher overall score indicated a greater desire to migrate. The single-item instrument (overseas education) and the composite measure on 'Intention to emigrate' were the variables of interest in the study.

The item "*Intention to study abroad*" was used to measure this construct. Within this measure respondents rated the frequency with which they think about studying abroad (Chang-Hoong & Soon, 2011). A 5-point Likert-type scale ranging from 1 (*never*) to 5 (*all the time*) was used. A higher score indicated a greater desire to study abroad.

A 30-day prevalence rate of alcohol consumption was assessed on a dichotomous level, "*have drunk or have not drunk alcohol in the past 30 days*" (Hibell, Guttormsson, & Ahlstrom, 2012).

A 7-item Fear of Covid-19 Scale (Ahorsu et al., 2020) was used. Adolescents indicated their level of agreement with the statements using a five-point Likert type scale. Answers included the following options: *"strongly disagree"*, "*disagree*", "*neither agree nor disagree*", "*agree*", and "*strongly agree*". The minimum score possible for each question was 1 while the maximum was 5. The total score was calculated by adding up each item score (ranging from 7 to 35). The higher the score, the greater the fear of Covid-19. Cronbach´s Alpha of the scale = 0.782.

Self-efficacy was measured using the General Self-Efficacy Scale (Slovak version Košč, Heftyová, Jerusalem, & Schwarzer, 1993). The scale assessed optimistic self-beliefs in coping with a variety of difficult demands in life with statements such as "*I can always manage to solve difficult problems if I try hard enough"*. Adolescents indicated their agreement with 10 statements using a 4-point Likert type scale. A higher sum score indicated higher general self-efficacy. The total score was calculated by adding up each item score (ranging from 0 to 30). Cronbach's alpha for this scale was 0.893.

The emotional component of habitual subjective well-being was measured by the original Slovak adaptation of the Emotional Habitual Subjective Well-being Scale (Džuka & Dalbert, 2002). In this instrument, two separate scales measure frequency of experiencing four positive (*joy, happiness, pleasure* and *energy*) and six negative (*anger, shame, sadness, fear, guilt* and *pain*) emotions or physical states. Respondents are asked to indicate the frequency of experiencing the 10 emotions or physical states using a six-point scale (from 0 = *almost never* to 5 = *almost always*). Higher scores indicate a higher frequency of experiencing positive and negative emotions. The Cronbach´s alphas for the positive and negative emotions/physical states scales were 0.752 and 0.813 respectively.

As the initial version of the scale was in English, the first step was a backward translation and then into Slovak to verify if the translated items were similar to the original ones. A panel discussion was carried out to check the content validity of the scales.

4.3. Statistical Analyses

A Mann-Whitney U test was used to test for the differences between the independent groups (gender, alcohol consumption) in the measure of intending to study abroad levels. The correlations of the variables of interest were analysed using a Spearman's correlation coefficient. As part of the mediation analysis, the dependent variable alcohol consumption was regressed on the independent variable fear of Coronavirus-19 through a chain of three serial mediators (M1, M2 and M3; i.e. self-efficacy, negative emotions, emigration intentions).

The serial mediation model was analysed using the *PROCESS* macro Model 6 for SPSS. The bias-corrected 95% confidence interval (CI) was calculated with 5000 samples by means of bootstrapping. If the value zero was not included in the 95% CI, it indicated that the mediating effect was significant. Statistical significance was defined as a two-tailed value of $p < .05$. The analyses of the serial mediation were controlled for the covariate gender. The multicollinearity was assessed using the variance inflation factor (VIF) test. The VIF as well as the tolerance values indicated no problems with multicollinearity as all values for the VIF were <1.3. The multicollinearity was explored in a logit model through the examination of correlation matrix (Table 1) and the estimation of the equivalent model in the linear regression and the collinearity diagnostics were specified (Midi, Sarkar, & Rana, 2010). It was found that tolerances for all independent variables were smaller than 1 and all the VIF values were <1.3. All analyses were carried out using SPSS 25.0.

5. RESULTS

5.1. Emigration Intention to Study Abroad

The average mean of intention to study abroad among the adolescents was 2.66, SD = 1.40. A Mann-Whitney *U* test revealed:

(i) significant differences in the intention to study abroad between boys (*Md* = 2, *n* = 130) and girls (*Md* = 3, *n* = 139), *U* = 11139.5, *z* = 3.39, *p* = .001. Girls reported significantly higher levels of intention to study abroad.

(ii) significant difference in the intention to study abroad levels of non-alcohol-users (*Md* = 2, *n* = 87) and alcohol-users (*Md* = 3, *n* = 183), *U* = 9995.5, *z* = 3.48, *p* = .001. Alcohol-users reported significantly higher levels of intention to study abroad.

5.2. The Serial Mediation Analysis

The means, standard deviations, correlations and descriptive statistics for alcohol consumption and other measures are shown in Table 1. Overall, the adolescents reported an under-average level of fear of Coronavirus-19 as well as emigration intentions. 68.60% of adolescents reported alcohol consumption. The correlation analysis revealed that the fear of Coronavirus-19 was negatively correlated with self-efficacy and positive emotions, and positively correlated with negative emotions and alcohol consumption. Alcohol consumption was positively correlated with emigration intentions.

The data supported the serial mediation hypothesis (Table 2, Figure 1) and the long-way specific indirect effect of the fear of Coronavirus-19 → self-efficacy → negative affect → emigration intentions → alcohol consumption was statistically significant (effect: .0010; 95 % CI: .0001 to .0029). It means that those who felt a greater fear of Coronavirus-19 in turn reported a lower level of self-efficacy and higher frequency of experiencing negative emotions. This higher frequency of experiencing negative emotions was translated to a higher rate of the frequency with which they thought of working or living in another country, and finally to the likelihood that adolescents would report alcohol consumption.

Only one of shortcut specific indirect effects fear of Coronavirus-19 → self-efficacy → emigration intentions → alcohol consumption was statistically significant (effect: -.0030; 95 % CI: -.0081 to -.0003). The direct negative effect of the fear of Coronavirus-19 on alcohol consumption was confirmed (effect: -.070, $p < 0.05$). Adolescents who reported alcohol consumption reported lower scores on the fear of Covid-19 scale in this study.

Table 1.
Means, standard deviations, correlations and descriptives for alcohol consumption.

	1	2	3	4	5	6	M	SD
1 Fear of Coronavirus-19	1						12.85	4.09
2 Self-efficacy	-.203**	1					19.36	5.56
3 Negative affect	.147*	-.362***	1				12.42	5.55
4 Positive affect	-.134*	.331***	-.313***	1			11.32	3.49
5 Emigration intentions	-.078	.138*	.156*	-.056	1		16.10	7.11
6 Alcohol consumption	-.131*	-.04	-.016	.069	.168**	1	No n=93 31,80%	Yes n=199 68,20%

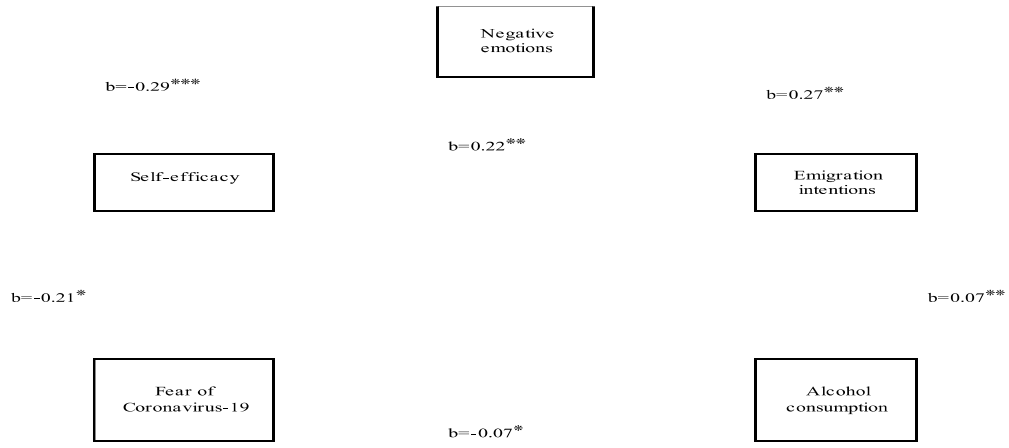
Note: *p < .05, **p < .01, ***p < .001

Table 2.
Regression coefficients, Standard Errors, and Model Summary information.

	Consequent											
	M1 (General self-efficacy)			M2 (Negative emotions)			M3 (Emigration intentions)			Y (alcohol consumption)		
Antecedent	Coeff.	SE	P	Coeff.	SE	p	Coeff.	SE	p	Coeff.	SE	p
X (Fear of Coronavirus-19)	-.209	.085	.015	.111	.078	.153	-.095	.107	.374	-.070	.034	.042
M1 (General self-efficacy)	-	-	-	-.287	.056	<.001	.219	.081	.007	-.036	.028	.198
M2 (Negative emotions)	-	-	-	-	-	-	.268	.086	.002	-.039	.029	.181
M3 (Emigration intentions)	-	-	-	-	-	-	-	-	-	.065	.022	.003
Constant	22.61	1.17	<.001	14.842	1.648	<.001	9.438	2.588	<.001	1.544	.881	.080
	R^2 = 0.036			R^2 = 0.205			R^2 = 0.057			R^2 = 0.096		
	$F(2, 255) = 4.733$, $p < .010$			$F(3, 254) = 21.891$, $p < .001$			$F(4, 253) = 3.831$, $p < .01$			Model Summary: -*2LL* 304.346, *ModelLL* 18.269, *df* 5, $p = .003$		

Note: gender was a controlled variable

Figure 1.
Serial mediation model.



Notes: a full line = only significant effects were stated, gender was a controlled variable, *p < .05, **p < .01, ***p < .001

6. DISCUSSION AND CONCLUSIONS

The importance of the role of gender in the context of migration intentions and aspirations has been confirmed (Marsiglia et al., 2021). The results of this study showed that girls had higher levels of intention to study abroad. The results of this study further support the pre-pandemic findings of emigration intentions among Slovak adolescents. Girls scored higher in the push factor of education as well as other explored push factors such as relationships, career and finance, language competencies, and experiences compared to boys (Hajduch, 2020).

A better understanding of pre-migration substance uses patterns such as the use of alcohol or tobacco could provide an important research background to the migration process (Salas-Wright et al., 2020, Lee, Martins, & Lee, 2015, Almeida, Johnson, Matsumoto, & Godette, 2012). A higher level of post-pandemic study abroad intention was found among girls and adolescents who reported alcohol consumption. This finding is consistent with previous research which found that students intending to study abroad drank more than students with no intention to study abroad, and that pre-departure drinking levels were identified as one of the most important predictors of drinking while abroad (Pedersen, LaBrie, Hummer, Larimer, & Lee, 2010).

This study also contributed to the understanding of the relationship between self-efficacy and the well-being of adolescents (Schunk & Meece, 2006; Pajares, 2006) in terms of the fear of Coronavirus-19. Firstly, the results showed a negative association between the fear of Coronavirus-19 and general self-efficacy, which is in line with previous research (Yenen & Çarkit, 2023; Okan, 2021). These results can be interpreted in the way that adolescents who showed a greater fear of Coronavirus-19 reported a lower level of optimistic self-belief in coping with a variety of difficult demands in life.

Secondly, self-efficacy was found to be a simple mediator in the relationship between the fear of Coronavirus-19 and emigration intentions. It was also found that self-efficacy and negative emotions were serial mediators between the fear of Coronavirus-19 and emigration intentions. These findings support previously confirmed connections between self-efficacy in regulating negative emotions and between high self-efficacy and the likelihood that individuals prefer more challenging tasks and more demanding goals (Cattelino et al, 2021; Cramm, Strating, Roebroeck, & Nieboer, 2013). However, based on the results of this study, negative emotions were not a simple mediator of the relationship between the fear of Coronavirus-19 and emigration intentions. It means that the fear of Coronavirus-19 is not directly associated with the negative emotional component of subjective well-being but through the first serial mediator (general self-efficacy). Negative emotions are positively associated with post-pandemic emigration intentions.

Finally, the direct negative effect of the fear of Coronavirus-19 on alcohol consumption has been confirmed although this result was not fully consistent with previous findings. The study aimed to evaluate changes in early adolescent substance use (mean age = 12.4 years) during the 2019 pandemic and found that neither engagement in social distancing nor adolescents' worry about the virus itself (i.e., infection) was associated with youth substance use. However, young people's general anxiety and stress were strongly associated with it, meaning that the emotional impact of the pandemic was broader than just worry about getting ill (Pelham III et al., 2021). Another study however found that adolescents who were more depressed, anxious, and fearful for their safety due to the Coronavirus-19 pandemic could have engaged in solitary substance use as a form of coping (Dumas et al., 2020), and were more likely to report problematic alcohol use (Sharma et al., 2022).

In the face of the Coronavirus-19 pandemic and serial mediation results of this study, it can be anticipated that resilience interventions to foster general self-efficacy and well-being of adolescents, as protective factors (Schwarzer & Luszczynska, 2006), will be needed to promote the health of young populations prior to departure.

It is important to mention the limitations of this study such as the self-reported nature of collected data. Moreover, the sample size was not very large and the study used a combination of paper and pencil and online data collection methods due to the pandemic restrictions. On the other hand, web-based surveys have been identified as cost-efficient and could be applied without the various disadvantages of paper and pencil assessments (Zeiler et al., 2020). Furthermore, other research studies concerned with the quality of indicators and risk behaviour prevalence through paper and pencil and computerized surveys administered in schools have shown similar results (Colasante et al., 2019).

The results of this study support the hypothesis of self-selection of young people likely to use alcohol into a pre-migrant group (Borges et al., 2011) and contribute to previous findings focused on migration intentions and alcohol use (Marsiglia et al., 2021) by improving the understanding of pre-departure migration – health associations (Gushulak & MacPherson, 2011). However, the cross-sectional nature of this investigation has limited this understanding and suggested that longitudinal studies are needed for this objective.

Innovative school-based prevention programs would benefit from such knowledge and should incorporate supporting general self-efficacy, health-related behaviour and a healthy openness to new experience among adolescents before they leave their home countries.

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AUTHORS' INFORMATION

Full name: Oľga Orosová, PhD., Prof.
Institutional affiliation: Department of Educational Psychology and Health Psychology, Faculty of Arts, Pavol Jozef Šafárik University University in Košice
Institutional address: Moyzesova 9, Košice 040 01, Slovak Republic
Email address: olga.orosova@upjs.sk
Short biographical sketch: Oľga Orosová is a professor of Psychology. She is a principal investigator of research projects focusing on the factors of risk behavior among adolescents and young adults and the effectiveness of drug use prevention programs.

Full name: Beáta Gajdošová, PhD., Assoc. Prof.
Institutional affiliation: Department of Educational Psychology and Health Psychology, Faculty of Arts, Pavol Jozef Šafárik University in Košice
Institutional address: Moyzesova 9, Kosice 040 01, Slovak Republic
Email address: beata.gajdosova1@upjs.sk
Short biographical sketch: Beáta Gajdošová is the head of the Department of Educational and Health Psychology. Her research is mainly focused on intrapersonal factors and their role in health-related behaviors.

Full name: Jozef Benka, Mgr., PhD. et PhD.
Institutional affiliation: Department of Educational Psychology and Health Psychology, Faculty of Arts, Pavol Jozef Šafárik University in Košice
Institutional address: Moyzesova 9, 040 01 Košice, Slovak Republic
Email address: jozef.benka@upjs.sk
Short biographical sketch: Jozef Benka completed two PhD programs in Health Sciences at University of Groningen, the Netherlands and in Social Psychology at Pavol Jozef Šafárik University in Košice, Slovakia. While his teaching activities focuses especially on Personality psychology, Psychology of emotion and motivation and Self-determination theory, his research interests are mainly about quality of life in chronic disease and also about life perspective, wellbeing and risk behaviours of students and young adults.

Full name: Viera Čurová, Mgr.
Institutional affiliation: Department of Psychology, Faculty of Arts, Pavol Jozef Šafárik University in Kosice
Institutional address: Moyzesova 9, 040 01 Košice, Slovak Republic
Email address: viera.curova@student.upjs.sk
Short biographical sketch: Viera Čurová is a PhD student in Psychology at Pavol Jozef Šafárik University in Košice.

Chapter #9

THE EFFECTS OF COGNITIVE TRAINING INTERVENTION ON QUALITY OF SLEEP IN OLDER ADULTS WITH INSOMNIA: A SYSTEMATIC REVIEW

Iris Haimov
Department of Psychology and the Center for Psychobiological Research, The Max Stern Yezreel Valley College, Israel

ABSTRACT
The risk of both — reduction in sleep quality and cognitive decline — increases with advanced age, raising the question of whether cognitive training intervention could improve sleep quality in older adults with insomnia. The current study aims to characterize existing literature on the possible effects of cognitive training intervention on sleep quality in older adults with insomnia. Evidence suggests that among older adults with insomnia cognitive training intervention (either personalized or in a group) improved sleep quality. The possibility of improving the sleep quality of these patients with a non-pharmacological treatment is an encouraging new concept that requires in-depth testing.

Keywords: older adults, sleep quality, insomnia, personalized cognitive training intervention, group cognitive training intervention.

1. INTRODUCTION

1.1. Insomnia in Older Adults: Understanding and Implications

Insomnia is the most common sleep disorder, affecting as many as 10% of European adults. Insomnia is defined by difficulty initiating or maintaining sleep that is associated with daytime consequences which occur at least 3 nights a week for at least 3 months despite adequate opportunity to sleep (Riemann et al., 2023; Van Someren, 2021).

Insomnia in elderly individuals is a complex problem rooted in physiological, psychological, and environmental elements (Ebben, 2021). The structure of sleep undergoes notable changes as people grow older, leading to modified sleep patterns that can trigger persistent insomnia. The aging process is linked to alterations in sleep structure. In contrast to younger adults, seniors experience shorter periods of Slow Wave Sleep (SWS) and Rapid Eye Movement (REM) sleep, which results in decreases in delta wave magnitude, REM sleep activity and density, and sleep spindle frequency (Espiritu, 2008; Feinsilver & Hernandez, 2017; Patel, Steinberg, & Patel, 2018). Thus, the sleep of older adults becomes fragmented, marked by frequent and prolonged awakenings (Espiritu, 2008; Patel et al., 2018). The ability to initiate and sustain sleep also diminishes and overall sleep duration decreases (Espiritu, 2008; Feinsilver & Hernandez, 2017; Patel et al., 2018).

Because sleep architecture changes with age, resulting in increased fragmentation, diminished Slow Wave Sleep (SWS), more stage 1 sleep (light sleep), and increased frequency of awakenings, the sleep patterns of elderly individuals exhibit greater susceptibility to disruption caused by medical and psychiatric disorders than in their younger counterparts (Espiritu, 2008; Feinsilver & Hernandez, 2017). Similarly, hormonal fluctuation in old age, particularly of melatonin (Haimov et al., 1994), and melatonin phase shift across

the lifespan, especially between adolescents and older adults (Biggio et al., 2021), changes in gut microbiota composition, fluctuations in fecal short-chain fatty acids (Haimov et al., 2022; Magzal et al., 2021), and age-related health conditions, collectively contribute to the manifestation of insomnia in the elderly. Additionally, stress, anxiety, depression, and other psychological elements frequently intermingle with disturbances in sleep, culminating in an intricate nexus of causative factors (Ancoli-Israel & Ayalon, 2006; Foley et al., 1995; Morin & Benca, 2012). Late-life insomnia is a chronic sleep disorder that affects over 40% of older adults, according to epidemiological data, and therefore is a significant concern among the older adult population (Patel et al., 2018).

Late-life insomnia can significantly degrade both quality of life and psychological well-being. The ramifications of insomnia for older adults extend beyond mere disruption of sleep; its repercussions resonate widely throughout overall health and well-being (Palagini, Hertenstein, Riemann, & Nissen, 2022). The adverse influence on cognitive function, memory retention, and daytime vigilance has been broadly substantiated (Haimov, Hanuka, & Horowitz, 2008). Persistent insomnia also escalates the susceptibility to falls, accidents, and concurrent medical conditions such as cardiovascular disorders (Berkley., Carter., Yoder, Acton, & Holahan, 2020). Compounding this condition is the bidirectional interaction between insomnia and mental health concerns, such as depression and anxiety, accentuating the potential for a vicious circle (Espiritu, 2008; Palagini et al, 2022; Patel et al., 2018).

The first-line non-pharmacological treatment for chronic insomnia is Cognitive Behavioral Therapy for Insomnia (CBT-I), which has been shown to be more effective than medication alone, especially in the long term (Edinger et al., 2021). CBT-I combines sleep education, sleep restriction, stimulus control, cognitive restructuring, and relaxation techniques to improve sleep quality and duration. Treatment adherence rates are estimated to reach about 60% for in-person CBT-I (Morin, 2006) and for digital CBT-I approximately 50% (Horsch, Lancee, Beun, Neerincx, & Brinkman, 2015). Nevertheless, their level of efficacy in instances of late-life insomnia is only moderate (Altena, Ellis, Camart, Guichard, & Bastien, 2023; Baglioni et al., 2023; Espie & Henry, 2023; Epstein, Sidani, Bootzin, & Belyea, 2012).

The effect of insomnia on the physical and mental well-being of older adults underscores the imperative of providing a prompt answer to this condition. Hence, identifying the optimal approach for ameliorating the sleep quality of elderly individuals grappling with late-life insomnia is an urgent task.

1.2. Cognitive Performance of Older Adults: Understanding and Implications

Aging not only brings about changes in sleep quality but has also been found associated with cognitive impairments (Droby et al, 2022; Heckner et al., 2021; Lufi & Haimov, 2018; Lufi, Segev, Blum, Rosen, & Haimov, 2015). The aging process ushers in a plethora of changes across a spectrum of physiological, psychological, and cognitive realms. Of these, cognitive performance is markedly influenced by the passage of time, affecting several mental processes such as memory, attention, problem-solving, and language.

Aging exhibits a wide array of cognitive shifts. Whereas certain functions remain robust, others show marginal declines, and others yet are significantly degraded. Crystallized intelligence, including acquired knowledge and verbal ability, tends to maintain stability or even progress with time. Conversely, the aging process triggers declining performance in a range of cognitive tasks that are part of the executive function. These include processing speed, perceptual agility, concentration, attention, inhibitory capacity, and memory (Droby et al., 2022; Heckner et al., 2021).

Aging affects both implicit (nondeclarative) and explicit (declarative) memory. Explicit memory, which involves conscious recollection, declines with age, as shown by studies on recall and recognition tasks (Ward & Shanks, 2018). But the effect of aging on implicit memory, which is manifested in tasks that do not require conscious recollection, is less clear. Some studies suggest that implicit memory remains relatively stable over the adult lifespan (Lalla, Tarder-Stoll, Hasher, & Duncan, 2022) whereas others have reported age-related decline (Ward, Berry, Shanks, Moller, & Czsiser, 2020). Age effects on implicit memory can be influenced by factors such as attention and depth of processing (Almkvist, Bosnes, Bosnes, & Stordal, 2019).

Aging affects cognitive performance in a range of domains:

Everyday functioning. Aging leads to a gradual decline in cognitive performance that lowers everyday functioning. It takes approximately two decades for significant changes to manifest in elders. The decline is not affected considerably by gender or education level. Advanced age has a notable direct effect on everyday functioning, mediated by deficits in time-based and event-based prospective memory, executive functions, and retrospective memory. Likewise, diminished processing speed and working memory may render daily activities challenging for older adults, including financial management, navigation in unfamiliar environments, and multitasking (Hergert, Pulsipher, Haaland, & Sadek, 2020).

Quality of life. Declining cognitive performance in older adults significantly degrades their quality of life (QOL). As one ages, cognitive functions like memory tend to weaken, disrupting daily activities and decreasing QOL. Reductions in cognitive functioning correlate with lower satisfaction with aging, indicating the importance of sustained cognition for self-appraised wellbeing and QOL. Cognitive deficits in seniors are also associated with diminished QOL across domains, especially mental health. Cognitive decline can encroach on independence, curtail social involvement, and contribute to psychological distress, degrading the quality of life of older adults (Dolatabadi et al., 2019).

Healthcare. Declining cognitive performance in older adults significantly worsens their health outcomes and increases their medical care needs. Research indicates that cognitive impairment interacts with cardiovascular conditions like coronary heart disease and heart failure, heightening risks of adverse events and disrupting disease progression and self-management. Retired individuals with more pronounced cognitive deficits also exhibit higher medical expenditures resulting from poorer health (Zuo & Wu, 2022).

Studies have demonstrated that the cognitive deficits manifest in older adults grappling with insomnia surpass those evident in their insomnia-free counterparts (Haimov, 2006; Haimov, Hadad, & Shurkin, 2007; Haimov et al., 2008).

1.3. Cognitive Training

One effective tool for the prevention of cognitive decline in healthy aging individuals is cognitive training. This includes any intervention aimed to improve, maintain, or restore mental function in which the individual repeatedly practices mentally challenging tasks in a structured manner (Smid, Karbach, & Steinbeis, 2020). Numerous studies have demonstrated the beneficial effects of cognitive training on cognitive functions (e.g., memory, attention, processing speed, and executive functions) and on distal, untrained domains (e.g., reading and walking) among both aging populations (Shatil, 2013, Sprague, Phillips, & Ross, 2020) and populations with cognitive deficits (Shatil, Metzer, Horvitz, & Miller, 2010). Cognitive training can be implemented in two ways: in either a personalized setting or a group setting. Recently, personalized cognitive training exercises have been progressively integrated into computerized training: computers and game consoles as well as smartphones and tablets (Bonnechère, Langley, & Sahakian, 2020). Moreover, group programs of cognitive training have been developed alongside computerized personalized cognitive training (Srisuwan et al., 2019).

1.4 The Relationship between Sleep Quality and Cognitive Functioning

The interaction between sleep and cognitive functioning has been investigated extensively in the past two decades**.** A multitude of findings have demonstrated the central role of sleep in brain plasticity, memory consolidation, and optimal cognitive engagement (Diekelmann & Born, 2010; Walker & Stickgold, 2004). At the same time, learning may have positive effects on sleep architecture (de Almondes, Leonardo, & Moreira, 2017, Cerasuolo, Conte, Giganti, & Ficca, 2020; Diamond et al., 2015; Fogel & Smith, 2006; Huber, Ghilardi, Massimini, & Tononi, 2004; Peters, Ray, Smith, & Smith, 2008; Peters, Smith, & Smith, 2007; Schabus et al., 2004; Smith, Nixon, & Nader, 2004).

Research conducted in both youthful and elderly cohorts free from insomnia has revealed that young adults, after learning, displayed a rise in the proportion of REM sleep (De Koninck, Lorrain, Christ, Proulx, & Coulombe, 1989; Smith & Lapp, 1991; Smith et al., 2004). They also showed a rise in the count and density of REMs (Peters et al., 2007; Smith & Lapp, 1991; Smith et al., 2004), longer Stage 2 sleep, more sleep spindles, and higher spindle density (Fogel & Smith, 2006; Fogel, Smith, & Côté, 2007; Peters et al., 2008; Peters et al., 2007; Schabus et al., 2004). Finally, they showed evidence of enhanced slow-wave activity (SWA). By contrast, older adults showed a longer duration of slow-wave sleep (SWS) and an increase in its percentage (Fogel & Smith, 2006; Naylor et al., 2000; Peters et al., 2008).

As noted, with advanced age the risk of a decline in both sleep quality and cognitive function increases. This raises the question whether sleep quality in older adults with insomnia may be improved by cognitive training intervention. The present study reviewed the literature on this topic.

2. METHODS

This systematic review was conducted based on the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher, Liberati, Tetzlaff, & Altman, 2009).

2.1. Search Strategy

The literature search was conducted in November 2022 in PUBMED, CINAHL, SCOPUS, and Web of Science. No language restriction was imposed. To be eligible for this systematic review, the sample of the study needed to include adults aged 65 and above with the diagnosis of insomnia and objective or subjective measurement of the participants' sleep. Studies evaluating the effects of cognitive training intervention were included, irrespective of the form (e.g., group or individual) and duration of treatment. Only randomized controlled trials (RCTs) were included.

3. RESULTS

The literature review revealed that only two studies to date have investigated the beneficial effects of prolonged cognitive training (either personalized or in a group) on the sleep quality of older adults with insomnia (Haimov & Shatil, 2013; Keramtinejad, Azadi, Taghinejad, & Khorshidi, 2019). First, Haimov & Shatil (2013) demonstrated in a pioneering study the beneficial effects of personalized computerized cognitive training on sleep quality and cognitive function among older adults with insomnia. Their study revealed that, among this population, an improvement in sleep quality is predicted by an improvement in cognitive performance.

In their study (Haimov & Shatil, 2013), participants in the cognitive training group (n = 34) completed a home-based, personalized, computerized cognitive training program (using the CogniFit cognitive training program). Participants in the active control group completed a home-based program involving computerized tasks that do not engage high-level cognitive functioning (‘‘Word and Paint’’). Both programs were similar in time commitment of 20–30 minutes per session and both regimens were similarly structured - three sessions each week (with a no-training day between sessions), for a duration of 8 weeks (24 training sessions). At the beginning of the study, all participants completed a broad spectrum of questionnaires. In the two weeks immediately before the onset of the intervention and following the end of the intervention, baseline and post-training objective sleep quality data were collected i.e., during these two weeks participants' sleep was continuously monitored by actigraph and participants filled a daily sleep diary. In addition, before the onset of the intervention and following the end of the intervention participants' cognitive performance was evaluated using the CogniFit computerized neurocognitive evaluation program.

The results of this study revealed between-group improvements for the cognitive training group on both sleep quality (sleep onset latency and sleep efficiency) and cognitive performance (avoiding distractions, working memory, visual memory, general memory, and naming). Hierarchical linear regression analysis in the cognitive training group indicated that improved visual scanning was associated with the earlier advent of sleep, while improved naming was associated with the reduction in wake after sleep onset and with the reduction in the number of awakenings. Likewise, the results indicated that improved “avoiding distractions” was associated with an increase in the duration of sleep. Moreover, the results showed that in the active control group, cognitive decline observed in working memory was associated with an increase in the time required to fall asleep.

In the second study, Keramtinejad et al. (2019) examined the beneficial effects of prolonged group cognitive training intervention on subjective sleep quality and cognition performance in older adults suffering from both insomnia and mild cognitive reduction and revealed that group cognitive training promoted their cognitive function and sleep quality. The participants in the study comprised 108 older adults with mild cognitive reduction suffering from insomnia. Participants were randomly allocated to an experimental group (n=54) and a control group (n=54). The experimental group underwent group cognitive training intervention for two months. Data were collected using the Mini-Mental State Examination (MMSE) questionnaire, Pittsburgh Sleep Quality Index (PSQI), Insomnia Severity Index (ISI), and Clinical Dementia Rating Scale (CDR). Data were collected one month before and after the intervention. The results revealed that the group cognitive training intervention promoted cognitive function and improved subjective sleep quality in the intervention group compared to the control group.

4. CONCLUSIONS

Overall, the two studies included in the current review demonstrated that sleep quality in older adults with insomnia may be improved by cognitive training intervention. The mechanism by which cognitive training improve sleep quality is unknown. Possible mechanism that underlies the interplay between cognitive functioning and sleep assumes that both cognitive training interventions (either personalized or in a group) provided an intensive new learning experience that acts as a catalyst to enhance sleep-dependent processes such as memory encoding and consolidation. These processes yield learning-dependent changes in sleep architecture which may enhance sleep continuity, allowing sleep-related memory

consolidation to proceed with less disruption and thereby leading to an improvement in sleep quality (Haimov & Shatil, 2013).

Insomnia is a common chronic condition in older adults. Therefore, the option of a non-pharmacological treatment that can improve their sleep quality is auspicious and should be further examined. Both personalized and group cognitive training should be investigated as promising non-pharmacological options that can benefit the initiation and maintenance of sleep. To further address the beneficial effect of cognitive training on sleep quality throughout the aging process, future studies should evaluate both methods of cognitive training in a broader elderly population. These studies may pave the way for the development of effective non-pharmacological interventions that may improve the sleep quality of older adults with insomnia.

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AUTHOR INFORMATION

Full name: Iris Haimov, Prof.
Institutional affiliation: Department of Psychology and the Center for Psychobiological Research, The Max Stern Yezreel Valley College, Israel
Institutional address: Yezreel Valley College, Israel
Short biographical sketch: Full Professor in the Department of Psychology at The Max Stern Yezreel Valley College, Israel, where she also serves as the Dean for Research & Development. In addition, she serves as the head of the Research Authority at the college. With a prolific academic career, Prof. Haimov has published over 50 papers in prestigious journals and actively contributes as an editorial board member for two journals. Prof. Haimov has secured grant funding from organizations including the Israel Science Foundation and serves as a frequent peer reviewer. Since 2014, she has been a member of the Clinic and Academic Committee of both the Asian Society of Sleep Medicine and the Israeli Association for Sleep Research. Her research focuses on the intricate relationship between sleep quality and cognition, exploring aspects such as the sleepiness curve, circadian rhythms, sleep deprivation, and insomnia. Her work has significantly advanced the understanding of sleep science and its impact on psychological well-being.

Section 2
Educational Psychology

Chapter #10

SELECTED INTERNAL ASSETS, PERCEIVED EXTERNAL RESOURCES OF RESILIENCE AND LIFE SATISFACTION

Lenka Abrinková[1], Oľga Orosová[2], & Viera Čurová[3]
[1]University Counseling Centre, Pavol Jozef Šafárik University in Košice, The Slovak Republic
[2]Department of Educational Psychology and Health Psychology, Faculty of Arts, Pavol Jozef Šafárik University in Košice, The Slovak Republic
[3]Department of Psychology, Faculty of Arts, Pavol Jozef Šafárik University in Košice, The Slovak Republic

ABSTRACT
Perceived external resources (PER) of resilience along with internal assets (IA) are key factors in life satisfaction especially when facing adversity. The aim of this study is to investigate the mediating role of IA (self-control and self-esteem) and PER (support and meaningful participation within home, school, community, and peers) between individual home adversity factors (conflict, antagonism and punishment with parents) and life satisfaction. 132 (53% female) early adolescents (mean age = 13.45; SD = 0.52) participated in the research. A parallel mediation model with multiple X-variables was used to analyze the data. The result regarding IA shows that the relationship between antagonism with parents and life satisfaction is mediated by self-control and self-esteem and the relationship between conflict with parents and life satisfaction is mediated by self-control. Regarding PER the mediation analysis showed an indirect effect of antagonism with parents on life satisfaction through home meaningful participation and school connectedness. In conclusion, antagonism and conflict with parents undermined IA and PER which led to a lower level of life satisfaction. Thus, home adversity effects broader social environment than expected and not only intervention in the home environment is recommended but also the promotion of other resilience factors.

Keywords: resilience, family adversity, adolescents, life satisfaction.

1. INTRODUCTION

Adolescence is a unique developmental period in comparison with adulthood, placing young people in the position of significant personal, social, and psychological pressure (Backes & Bonnie, 2019). To enhance positive youth development – avoid risk and promote well-being, numerous factors have been identified (Lerner, 2004). Among these, resilience has been described as one of the most important due to the theoretical and empirical closeness to positive youth development. Resilience is defined as "the capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development" (Masten, 2014, p.6). Due to the latest wave of resilience research which adopts a focus on other systems such as family, school, peers, as well as cultural and societal systems, resilience research has made a huge step towards individual-environment interaction and has become one of the strongest contributors in positive youth development (Masten, 2015).

Past research strongly suggests that young people from disadvantaged, dysfunctional or impaired home environments are at more risk for negative outcomes such as mental illnesses (Hughes, Ford, Davies, Homolova, & Bellis, 2018), substance use (Pilowsky,

Keyes, & Hasin, 2009) or low life satisfaction (Levin, Dallago, & Currie, 2012, Raboteg-Šarić, Brajša-Žganec, & Šakić, 2009). To grow into healthy, satisfied, and productive adult, adolescents have to learn to regulate their own emotions, create a relationship with others, set life goals and distinguish meaningful and productive activities according to their life goals (Backes & Bonnie, 2019). For that and many more developmental tasks, a healthy home environment is crucial. Research has shown that a direct effect of home adversity on life satisfaction is present when home adversity falls into the categories of abuse, neglect or parental factors (Hughes at al., 2018). However, the indirect effect of home adversity and life satisfaction through resilience factors is present when home adversity refers to relationship characteristics across parent-child personal relationships. Especially in adolescence, it is also important to distinguish the relationship with each of several members of an adolescent's social family network (e.g., mother, father, sibling, grandparent). This feature results in a matrix of "relationships by qualities" which enables us to compare the similarities and differences among various relationships and to evaluate how individual differences in relationship qualities are associated with other individual outcomes (Furman & Buhrmester, 1985).

Jeon, Lee, Kim, Kim, and Jeong (2021) have confirmed that a harsh-negative parenting style that is hostile and oppressive is associated with lower life satisfaction among adolescents, through self-control. Parenting behavior, which is low in warmth and hostile, has a profound impact on the child's development of self-control (Dallaire et al., 2006) and self-esteem (Perez-Fuentes et al., 2019). This is because parents' judgments or affect about the appropriateness of their children's behavior are delivered explicitly or implicitly to their children. The parent-child relationship and its association with different aspects of positive youth development mediated through various internal assets of resilience has been studied in research for quite some time. However, less is known about if this relationship is valid regarding external resources of resilience. Research shows that the supportive role of mothers can be more effective in providing opportunities for social competence performance in their adolescent daughters (Kazemi, Ardabili, & Solokian, 2010). Thus, it seems that perceived external resources of resilience are potential mediators regarding the relationship between adversity and positive youth development indicators.

2. OBJECTIVES

The objective of this study is to examine the mediating role of selected internal assets(self-control, self-esteem) and perceived external resources of resilience (peer support, home support, home meaningful participation, school support, school meaningful participation, school connectedness, community support and community meaningful participation) between individual home adversity factors (antagonism with mother, antagonism with father, conflict with mother, conflict with father, punishment from mother, punishment from father) and life satisfaction among young adolescence.

3. METHODS

3.1. Sample and Procedures

A design of this study is cross-sectional. Schoolchildren in the 7th grade at primary school in Slovakia were participants of a randomized control trial for evaluating the school-based prevention program Unplugged. The program Unplugged is a school-based universal prevention program created as a part of the Eu-DAP (European Drug Abuse Prevention) program. It is based on the combination of prevention methods which are

focused on personal and social skills development and the correction of normative beliefs regarding substance use. The selection of schools was conducted with the aim of obtaining a representative sample with respect to regional, town size characteristics. To meet the requirements of the project under which the Unplugged program had been implemented, it was necessary to include 12 schools in the experimental group and 12 schools in the control group.

Within the current study, the data from respondents who participated only in control group were analysed aimed deeper understanding of the natural processes withing the resilience factors. Ultimately, 132 (53% females) early adolescents (mean age = 13.45, SD = 0.52), participated in the research. The study obtained local university Ethics committee approval. Parents were informed about the study and could opt out if they disagreed with their child's participation.

3.2. Measures

The adolescents were asked to fill in a paper version of the questionnaire during one lesson in the presence of a trained research team member and without the presence of a teacher:

- Internal assets of resilience

- Self-control: The Self-control scale (Finkenauer, Engels, & Baumeister, 2005) consists of 11 items (*''I have a hard time breaking a bad habit "*). Respondents could answer on a 5-point Likert-type scale (1 = never, 5 = always). A higher score indicated a higher level of self-control after re-coding. The Cronbach´ s alpha of the whole scale was α=0.60
- Self-esteem: The Self-Esteem scale (Rosenberg, 1979) consists of 10 items (*On the whole, I am satisfied with myself "*). Respondents could answer on 4-point Likert-type scale (1= strongly disagree, 4 = strongly agree). A higher score represented a higher level of self-esteem. The Cronbach´ s alpha of whole scale was: α=0.74

- Perceived External resources of resilience were explored using the RYDM (Resilience and Youth Development Module) (Constantine, Benard, & Diaz, 1999) questionnaire with 4-point Likert-type responses (1= not true at all, 4 = very much true). Subscales regarding support contains 6 items each, subscales regarding meaningful participation contains 3 items each and School connectedness contains 5 items.

- Home support (CA=0.81): "*At my home there is a parent that cares about my school*"
- Home meaningful participation (CA=0.78): "*At home I participate in decision making with my family*"
- School support (CA=0.87): "*At my school, there is a teacher or some other adult who really cares about me*"
- School meaningful participation (CA=0.72): "*At school I help decide things like class activities or rules*"
- School connectedness (CA=0.79): "*I feel like I am part of this school*"
- Community support (CA=0.95): "*Outside of my home and school, there is an adult who really cares about me*"
- Community meaningful participation (CA=0.70) "*Outside of my home and school, I do these things: I am part of clubs, sports teams, church/temple, or other group activities "*
- Peer support (CA=0.93): "*I have a friend about my own age who really cares about me*"

- Family adversity factors were explored using the NRI-SPV (The Network of Relationship Social Provision Version) (Furman & Buhrmester, 1985) questionnaire with 5-point Likert-type responses (1= not at all or little, 5 = most of the time) separately for the mother (M) and father (F). Every subscales contains 3 items each.
- conflict (M CA=0.77; F CA=0.76): "*How much do you and this person get upset with or mad at each other?*"
- antagonism (M CA=0.70; F CA=0.69): *"How much do you and this person hassle or nag one another?"*
- punishment (M CA=0.75; F CA=0.81): "*How often does this person punish you?")*

- Life satisfaction was measured by 6 items *(„How satisfied are you usually with…")* on 5-point scale (1 = not satisfied at all, 5 = very satisfied) regarding satisfaction with mother, father, friends, own appearance, financial situation and with yourself. A mean score of the items was calculated to obtain the average life satisfaction in various domains. This approach has previously been used and validated by Ng, Hubner, Maydeu-Olivares, and Hills (2018). A higher overall score indicates higher life satisfaction. The Cronbach´s alpha of the whole scale was:α=0.71.

3.3. Statistical Analysis

All the data were analyzed using the statistical software package IBM SPSS Statistics, version 21 for Windows. Standard descriptive analyses (mean, standard deviation, median, theoretical range) were performed at the beginning, then a t-test was used to examine the gender differences in psychological variables. The mediation analyses were performed in the Hayes PROCESS tool (Hayes, 2017) as a parallel multiple mediator model with X-variables – Model number 4. Only significant mediation models will be presented in the paper.

4. RESULTS

4.1. Preliminary Results

The descriptive statistics are presented in Table 1. There were significant gender differences within perceived peer support, with girls perceiving statistically higher peer support compared to boys.

Table 1.
Descriptive statistics of research variables.

	TR	Total Mean (SD)	Girls Mean (SD)	Boys Mean (SD)	t-test
Conflict with mother	1-5	1.86 (0.72)	1.84 (0.75)	1.90 (0.66)	0.427
Conflict with father	1-5	1.80 (0.68)	1.71 (0.65)	1.91 (0.70)	1.687
Antagonism with mother	1-5	1.78 (0.71)	1.78 (0.76)	1.77 (0.67)	-0.146
Antagonism with father	1-5	1.75 (0.70)	1.71(0.69)	1.80 (0.71)	0.744
Punishment from mother	1-5	2.29 (0.86)	2.21 (0.86)	2.38(0.86)	1.174

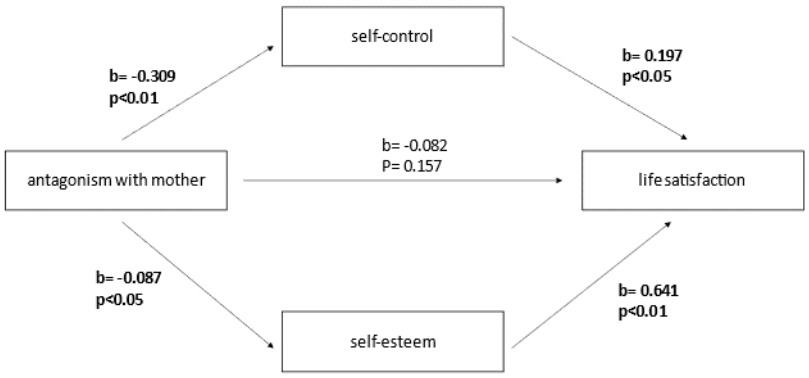
Punishment from father	1-5	2.19 (0.83)	2.07 (0.81)	2.33(0.84)	1.847
Peer Support	1-4	3.01 (0.86)	3.27 (0.75)	2.71 (0.88)	-3.888**
Home support	1-4	3.40 (0.57)	3.41 (0.54)	3.40 (0.61)	-0.113
Home Meaningful Participation	1-4	3.10 (0.71)	3.09 (0.75)	3.11 (0.66)	0.131
School Support	1-4	2.82 (0.70)	2.89 (0.67)	2.75 (0.73)	-1.136
School Meaningful Participation	1-4	2.55 (0.70)	2.63 (0.70)	2.46 (0.70)	-1.410
School Connectedness	1-4	3.77 (0.65)	3.74 (0.61)	3.79 (0.69)	0.425
Community Support	1-4	2.91 (0.89)	2.97 (0.90)	2.84 (0.88)	-0.853
Community Meaningful Participation	1-4	2.87 (0.86)	2.83 (0.87)	2.91 (0.86)	0.542
Life satisfaction	1-6	4.05 (0.57)	3.97 (0.55)	4.14 (0.59)	1.717

**p<0.01

4.2. Parallel Multiple Mediator Models with X - Variables

The first significant model shows that there was an indirect effect of antagonism with mother on life satisfaction through self-control: b = -0.061, BCa CI [-0.119, -0.011] and through self-esteem: b = -0.056, BCa CI [-0.101, -0.014] (Figure 1.).

Figure 1.
Parallel mediation model of selected internal assets of resilience in relationship between antagonism with mother and life satisfaction.

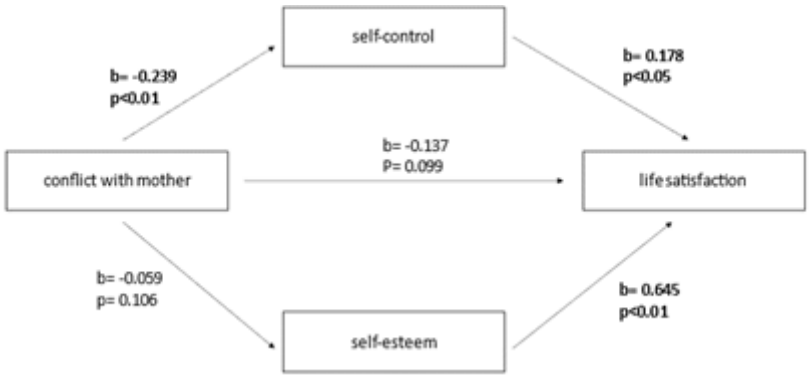


The second mediation analysis showed that there was a significant indirect effect of antagonism with father on life satisfaction through self-control: b = -0.049, BCa CI [-0.101, -0.013] and through self-esteem: b = -0.047, BCa CI [-0.099, -0.012] (Figure 2.).

Figure 2.
Parallel mediation model of selected internal assets of resilience in relationship between antagonism with father and life satisfaction.

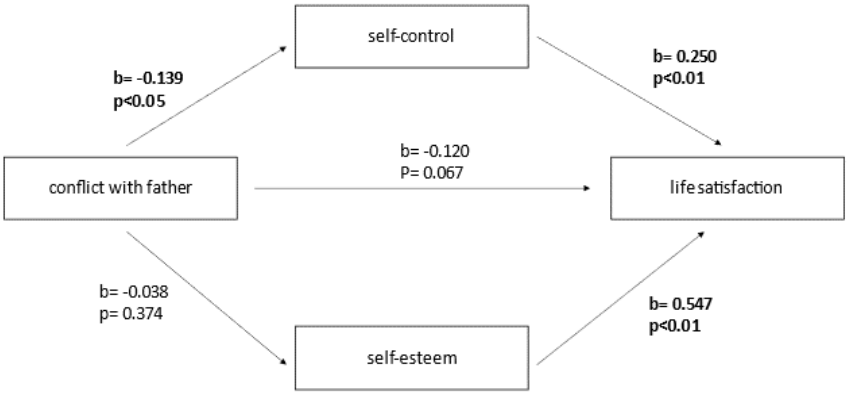
The next significant model represents an indirect effect of conflict with mother on life satisfaction through self-control: b = -0.042, BCa CI [-0.085, -0.005] (Figure 3.).

Figure 3.
Parallel mediation model of selected internal assets of resilience in relationship between conflict with mother and life satisfaction.



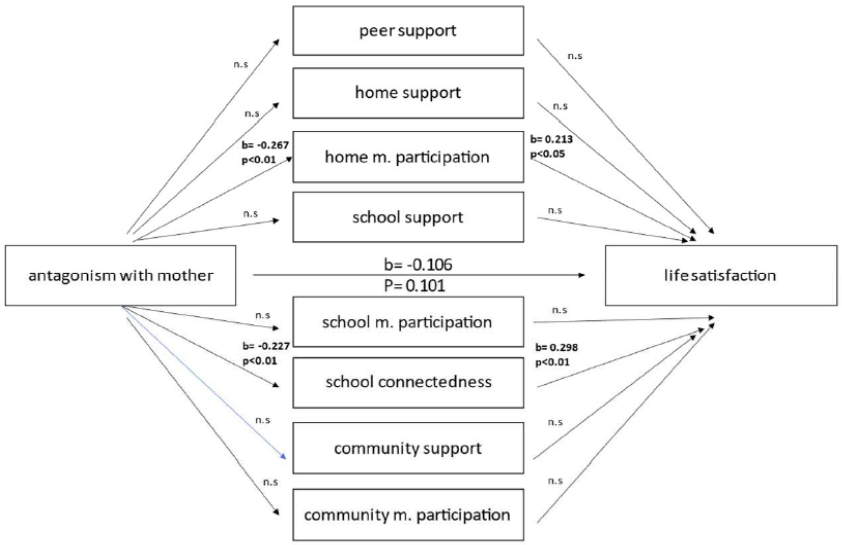
The next significant model showed that there was an indirect effect of conflict with the father on life satisfaction through self-control: b = -0.034, Bca CI [-0.079, -0.002] (Figure 4.)

Figure 4.
Parallel mediation model of selected internal assets of resilience in relationship between conflict with father and life satisfaction.



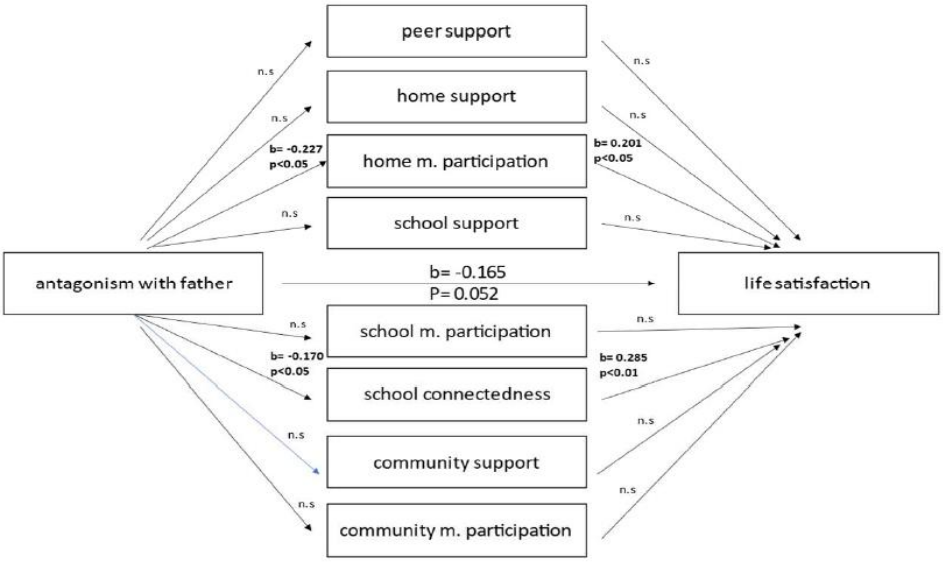
The mediation analysis regarding perceived external resources of resilience has shown indirect effect of antagonism with the mother on life satisfaction through perceived school connectedness: b = -0.067, BCa CI [-0.125, -0.017] and through perceived home meaningful participation: b = -0.057, BCa CI [-0.127, -0.003] (Figure 5.).

Figure 5.
Parallel mediation model of perceived external resources of resilience in relationship between antagonism with mother and life satisfaction (n.s= non-significant association).



The second mediation model regarding external resources of resilience reveals that there was a significant indirect effect of antagonism with the father on life satisfaction through perceived school connectedness: b = -0.048, BCa CI [-0.104, -0.005] and perceived home meaningful participation: b = -0.045, BCa CI [-0.114, -0.006] (Figure 6).

Figure 6.
Parallel mediation model of perceived external resources of resilience in relationship between antagonism with father and life satisfaction (n.s= non-significant association).



5. DISCUSSION

The findings of this study show that primarily antagonism with the mother and father undermine the self-control of early adolescents that leads to a lower level of life satisfaction. Moreover, self-esteem was also identified as a mediator between antagonism with the mother and father and life satisfaction along with external resources of resilience such as home meaningful participation and school connectedness.

We have confirmed that home environment is a significant system to which an individual belongs and may cause a different trajectory of self-control and self-esteem when in disharmony. However, these associations between adverse home environment and self-concept characteristics are not that universal. Research has shown that the relationship between home adversity and self-control and self-esteem is not conclusive during adolescence. Some studies have reported robust cross-sectional and longitudinal associations between parenting and self-control and self-esteem throughout adolescence (Özdemir, Vazsonyi, & Çok, 2013). Others have reported only significant concurrent associations (Baardstu, Karevold, & Von Soest, 2017; Craig, 2016) while some have found significant associations for some parenting dimensions but not others (Vazsonyi, Jiskrova, Ksinan, & Blatny, 2016). We have confirmed that the dimensions of antagonism and conflict play a role in the lower level of self-control and self-esteem.

The antagonistic relationship in our research has become a strong predictor of self-esteem and self-control, leading to a lower level of life satisfaction Regarding self-control, parenting may inspire children's negative feelings (e.g., negative verbal comments, controlling others through guilt) and lead children into suppressing displays of negative emotion in order to avoid provoking parental hostility or getting rid of misbehavior (Coplan, Hastings, Lagacé-Séguin, & Moulton, 2002). This deprives children of chances to practice self-regulation in a supportive context (Scaramella & Leve 2004). If there is limited regulatory support, adolescents do not experience support, responsiveness, boundaries, and consistent discipline. Parents who do not provide regulatory support to help youths solve problems may not be able to keep their children from experiencing overwhelming emotional extremes. In turn, these adolescents will not acquire effective strategies for regulating negative emotions and controlling undesirable behaviors (Morris, Silk, Steinberg, Myers, & Robinson, 2007). Moreover, antagonistic, or harsh parenting practices also directly model dysregulated behaviors (Morris et al. 2007).

Regarding self-esteem, there is a longstanding belief that self-esteem emerges from relationships with others, suggesting that a person comes to view him or herself through the lens of others' opinions (i.e., reflected appraisals). For adolescents, this is primarily through the parents' lens. However, the adolescence is a time when either the parent-child relationship, the child's self-esteem, or both are changing. There are indications that parental influences might weaken as children progress through the adolescent period. For example, social relationships become less hierarchical throughout adolescence, with a greater focus on peers (Gaertner, Fite, & Colder, 2010). This suggests that parents might have a declining impact on the development of self-esteem during the adolescent years. However, there is no reason to believe that parenting is unimportant for self-esteem during adolescence. Parents' influence decreases but remain an important factor in adolescent development (Kung & Farrell, 2000) and parents are still viewed as important figures in the lives of adolescents.

Regarding external resources of resilience, there is not a lot of research focusing on the psychological mechanism of perceived external resources of resilience between individual home adversity factors and life satisfaction. However, past research suggests that factors linked to home and school are the most important predictors of various kinds of psychological and behavioral difficulties (Wills, Vaccaro, & Mcnamara, 1992; Catalano, Oesterle, Fleming, & Hawkins, 2004). Abrinková, Orosová, Bacikova-Sleskova, Štefaňáková., and Gajdošová (2019) discovered that perceived external resources of resilience – school and home support and meaningful participation are associated with a lower prevalence of alcohol use among schoolchildren. Moreover, self-esteem and home meaningful participation were identified as protective factors towards alcohol use and cigarette smoking among pupils in the first grade at high school (Abrinková, Orosová, & Bacikova-Sleskova, 2020). Our results suggest that early adolescents do not only need exclusive support, as highlighted during childhood, but it is important for them to be engaged, to be a part of the decision-making process in the family and have a voice in a family, with a continuing trend to high school. This is in line with the UNICEF definition of meaningful participation where it is described as when adolescent girls and boys, either individually or collectively, form and express their views and influence matters that concern them (Cappa, Werntz, & Manuel, 2018). Participation opportunities and activities must be inclusive, giving adolescents of varying ages, family wealth levels, and physical, emotional, and cognitive abilities the chance to take part in decisions that affect their lives (Cappa et al., 2018). This broad definition can be applied at various levels of individual

environment and as revealed in our research, when schoolchildren are affected by antagonistic relationship with parents it may lead them to lower levels of life satisfaction.

The mediation effect of school connectedness implies that antagonistic parenting establishes patterns of relationship, which are then played out, maybe copied in other more proximal interpersonal contexts such as school. Thus, school my lose its position of important resource for adolescents. It seems that antagonism with parents predisposes individuals to difficulties in attaching to schools, which in turn affects life satisfaction. The Attachment Theory would predict such a mediation model though the internal working models of attachment.

The current results provide a more complex theoretical resilience model and highlight the importance of marshalling selected internal assets and external resources of resilience among adolescents. Often the home environment is the private sector of a family, less flexible for intervention, thus less prone to change. As was shown in our research, intervention in the home environment is not the only way to how to secure the healthy development of children. Another way is to focus on factors that carry out the burden of the relationship between family adversity factors and life satisfaction. These are self-esteem, self-control, school connectedness and home meaningful participation.

Among the limitations of this research is the questionnaire used. The data were obtained through self-reported questionnaires and thus it is not possible to generalize information and to anticipate real information regards the perceived external resources of resilience. It is not possible to anticipate how the real environment surrounding the child is; only how it is perceived by the child. However, in this case it is not crucial to know how the real environment really is, rather how it is perceived by adolescents. It is precisely the shift in the perception of possible support and meaningful participation in the environment that can be achieved through perception and attitude change over the slight modification of environment (Szalay et al., 2006). Another limitation of this research is the small research sample thus, any generalization of the results to the whole population should be carried out carefully.

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AUTHORS' INFORMATION

Full name: Lenka Abrinkova, PhD.
Institutional affiliation: University Counselling Centre, Pavol Jozef Šafárik University in Košice
Institutional address: Moyzesova 9, Kosice 040 01, Slovak Republic
Short biographical sketch: Lenka Abrinková completed PhD program in Social Psychology and Psychology of Work. She provides psychological counselling for all university students according principles of Client Centered Therapy. Her research interests are mainly about resilience factors and risk behavior among adolescence.

Full name: Olga Orosova, PhD., Prof.
Institutional affiliation: Department of Educational Psychology and Health Psychology, Faculty of Arts, Pavol Jozef Safarik University in Košice
Institutional address: Moyzesova 9, Kosice 040 01, Slovak Republic
Short biographical sketch: Olga Orosova is a professor of Educational, Counseling, and School Psychology. She is a principal investigator of research projects focusing on the factors of risk behavior among adolescents and young adults and the effectiveness of drug use prevention programs.

Full name: Viera Čurová
Institutional affiliation: Department of Psychology, Faculty of Arts, Pavol Jozef Šafárik University in Košice
Institutional address: Moyzesova 9, Kosice 040 01, Slovak Republic
Short biographical sketch: Viera Čurová is an internal PhD student in social psychology and work psychology studies at Pavol Jozef Šafárik University in Košice. She is currently working on the research project "Risk behaviour and effectiveness of the program Unplugged. School randomized controlled trials of prevention drug use among Slovak adolescents." She is also lecturers in prevention program among university students.

Chapter #11

THE IMPACT OF A NATURE-BASED RETREAT ON THE SELF-CARE AND PEER SUPPORT INTENTIONS OF STUDENTS ENROLLED ON POST GRADUATE TRAINING IN EDUCATIONAL AND CHILD PSYCHOLOGY IN IRELAND: A PILOT STUDY

Therese Brophy
Department of Educational Psychology, Inclusive and Special Education, Mary Immaculate College (MIC), Ireland

ABSTRACT
Time spent in nature is purported to impact positively on nature connection and psychological restoration. This paper reports on the impact of a nature-based retreat on the peer support and self-care intentions of a cohort of educational psychologists in training in Ireland. The nature-based retreat facilitated re-engagement of the group in a socially -distanced manner following Covid restrictions. The retreat took place at a location in the Mid-West of Ireland in early Autumn. The habitat included flora and fauna, a river, a pond, a woodland area and natural buildings. The retreat was comprised of individual, pair and group tasks, including nature connection activities. Following the retreat, participants (n=10) were invited to complete a survey on the impact of the retreat on their intentions with regard to self-care and peer support. Findings from the survey indicated that participants were positive about the experience of the group, nature-based retreat in terms of self-care and peer support prioritization and intentions. A conceptual framework for understanding nature-based self-care is proposed. Directions for future research are considered, particularly in the domains of professional training in educational psychology, self-care and peer support practices, and the potential of nature-based settings in other areas of EP practice.

Keywords: educational Psychology, nature connection, self-care, peer support.

1. INTRODUCTION

In order to qualify as an Educational and Child Psychologist in Ireland, trainees are required to complete a three-year Professional Doctorate programme, accredited by the Psychological Society of Ireland (PSI). Programmes are typically comprised of research, academic and placement components. During each professional placement, there is an expectation that trainees would experience an increase in independent work of growing complexity under supervision. There is also an expectation that trainees gain experience in intervention and therapeutic work with clients and their families. The Psychological Society of Ireland Code of Professional Ethics (2019) outlines four over-arching ethical principles that guide professional practice; Respect for the rights and dignity of the person, Competence, Responsibility and Integrity. The ethical principle of Integrity emphasises the importance of recognising professional limitations, and states that psychologists should:

- *Engage in self-care activities which help to avoid conditions (for example, burnout, addictions) which could result in impaired judgement and interfere with their ability to benefit and not harm others.*

- *Seek emotional support and/or supervision from colleagues when feeling stressed or vulnerable due to professional dilemmas (PSI, 2019).*

The two standards outlined above highlight an ethical imperative for psychologists to prioritise self-care and peer support. These standards are endorsed in other studies that explore wellbeing and self-care for psychologists (Collins & Cassill, 2021).

2. SELF-CARE IN PROFESSIONAL PSYCHOLOGY TRAINING

Butler, Mercer, McClain-Meeder, Horne, & Dudley (2019) define self-care in line with the Oxford Living Dictionary definition as 'the practice of taking action to preserve or improve one's own health, well-being and happiness, in particular during periods of stress' (p. 107). Butler et al (2019) view the concepts of guarding against and managing stress, and enhancing wellbeing and overall functioning as tasks central to self-care for professional psychologists. They propose six key domains of self-care; Physical, Professional/Workplace, Relationship, Emotional, Psychological and Spiritual. There is an emerging recognition of the importance of self-care for psychologists in training, with a burgeoning body of research exploring how to embed self-care at an early stage of professional psychology training to instill life-long self-care practices, to mitigate against burn-out and to promote psychologist retention in the field.

Self-care has been explored in the context of clinical psychology training. Pakenham and Stafford-Brown (2012) identified a range of stressors associated with clinical psychology training including the multiple demands associated with academic, research and practice-based requirements of training, and proposed Acceptance and Commitment Therapy (ACT) training as an intervention. In a follow up study exploring the impact of ACT training on clinical psychology trainees' stress levels, ACT skills, processes and attributes, Pakenham (2015) reported that participants identified post-training improvements on measures of counselling self-efficacy, client–therapist alliance, self-kindness, acceptance, defusion, mindfulness and values, and a marginally significant improvement in somatic symptoms, in the context of a trend towards increased work-related stress. It is worth noting the small sample size in the study and an attrition rate from pre- to post of approximately fifty percent.

Mindfulness-based strategies have also been found to improve the self-care of clinical psychology trainees. Pintado (2019) reported on the impact of an eight-week mindfulness programme with a small sample of clinical psychology trainees (n=8). Participants reported changes in awareness of physical sensations, well-being, sensory perception and integration. Increased bodily awareness of unpleasant sensations and self-compassion, synchronicity with others and increased self-compassion were also reported.

3. SELF-CARE IN EDUCATIONAL AND SCHOOL PSYCHOLOGY

In a US-based study exploring burnout for professional school psychologists, Schilling, Randolph, and Boan-Lenzo (2018) found that 90% of participants reported feelings of burnout at some point in their role as a school psychologist. Also, in the US context, Flood et al (2023) conducted a bibliometric analysis of studies relating to self-care in school psychology. They found that much of the self-care literature focused on the populations served by school psychologists such as teachers, as opposed to the self-care of psychologists themselves. In studies that dealt specifically with self-care for school psychologists, the main strategies identified were mindfulness-based (e.g. yoga, deep

breathing) and/or didactic instruction (e.g. goal-setting, positive self-talk). The authors concluded that more research on self-care for school psychologists was needed, with a particular focus on effective practices and interventions to promote self-care. These studies focused on practicing school psychologists. The multiple demands outlined by Packenham and colleagues for Clinical Psychology trainees are also a feature of Educational and Child Psychology training, while financial stress has been identified as an additional stressor for EPs in training in some contexts, given variation in the funding supports available (Myers et al., 2012). In the context of educational and counseling psychology training, O'Halloran and O'Halloran (2001) underlined the importance of self-care for students as well as instructors, particularly in relation to emotionally difficult course material. Within the spiritual domain, O'Halloran and O'Halloran (2001) highlighted connecting with nature as a potentially vital self-care strategy. More recently, Butler et al (2019) made a distinction between faith-based and secular spirituality, and articulated a role for connecting with nature within the secular spiritual domain.

4. NATURE CONNECTION

A number of studies have established the benefits of time in nature, and connection to nature for physical and psychological wellbeing. There are a number of theories put forward for the impact of nature connection on wellbeing. The biophilia hypothesis (Wilson, 1984) contends that humans have evolved with nature, and have an innate drive to connect with nature. While the benefits of time in nature are broadly accepted, biophilia has been challenged in terms of viewing positive human feelings towards the natural world through a narrow evolutionary lens (Joye & DeBlock, 2011). Attention Restoration Theory (Kaplan, 1995) posits that nature restores cognitive resources such as attention and concentration via activation of involuntary attention which involves intrinsic interest in the environment and requires little effort, allowing effortful, directed attention to recover. The Stress Reduction hypothesis proposes that time spent in nature activates a stress lowering physiological response (Weir, 2020). This hypothesis is supported by studies measuring the physiological responses (heart rate, blood pressure, cortisol levels) of participants in studies of stress and the natural environment (Bakir-Demir, Berument, & Akkaya, 2021; Ulrich et.al. 1991). More recently, Grahn, Ottosson, and Uvnäs-Moberg (2021) proposed the Calm and Connection Theory, hypothesizing that experiences in nature activate emotional and psychophysiological reactions, including the oxytocinergic system.

5. THE CURRENT STUDY

Additional challenges to self-care and peer support emerged during the Covid-19 pandemic, with intermittent periods of lockdown and a pivot to online lectures and research activity, remote placement experiences and imposed isolation from peers. In response to these challenges, participants were invited to attend a nature-based retreat to supplement the programme structures in place to promote a culture of self-care. This study outlines the development and preliminary evaluation of a nature-based retreat, carried out with a cohort of post-graduate students in educational and child psychology in the Mid-West region of Ireland with the goal of prioritising self-care and peer support.

5.1. Study Rationale

This pilot study aimed to explore the impact of a nature-based retreat on the self-care and peer support intentions of a group of educational and child psychologists in training. Self-care incorporates ideas of mental and physical wellness. To date, studies on self-care in professional psychology training have placed a greater focus on psychological strategies (ACT, mindfulness). The nature connection literature has established the benefits of time in nature for physical and psychological wellbeing (Barragan-Jason, Loreau, M., de Mazancourt, C., Singer, M. C., & Parmesan, 2023). Therefore, a group, nature-based retreat was considered worthy of exploration as a potential approach to addressing self-care needs in a more holistic way.

5.2. Study Paradigm

From a conservation perspective, it is widely accepted that human activities pose a threat to both natural systems and human health (Barragan-Jason et al, 2023). This study is framed within the 'people and nature' paradigm, which espouses a symbiotic relationship between humans and nature (Mace, 2014). In addition, the nature connection literature makes a distinction between 'green' and blue' spaces. Green spaces are environments characterised by the presence of green foliage, grass and trees. Blue spaces are environments characterised by the presence of water features (Loureiro, Calmeiro, Marques, Gomez-Baya, & Gaspar de Matos, 2021). This study took place in an environment containing both green (trees, grass and foliage) and blue spaces (river and pond). The retreat took place in the Mid-West of Ireland. The habitat included a river, a pond, a woodland area comprised of re-forested and re-wilded woodland. Wildlife included birdlife, bees, donkeys, chickens and dogs. The buildings were natural buildings, constructed using cob building materials and techniques.

5.3. Participants

Year 2 and Year 3 trainees from a three-year educational psychology training programme in Ireland were invited to attend a nature-based retreat with an expressed focus on self-care and peer support. Participants (n=10) confirmed their attendance (Year 2, n=1; Year 3, n=9), took part in the retreat and completed a survey post-retreat.

5.4. Procedure

The retreat was hosted by a member of the programme team and two colleagues. The retreat took place on a morning in August 2021 (10:30am-12:30pm) before the commencement of the academic year. The group was met in the morning by a member of the programme team, provided with a brief orientation to the site and accompanied to a riverside seating area to meet with their peers. Participants were requested to put away their mobile phones upon arrival. At the riverside, the group was informed that the focus for the day was self-care and peer support. Participants were asked to note a sit-spot to which they could return after the silent walk and group work.

Participants then proceeded on a silent walk to a woodland camp area under a parachute. The group based itself here for pair and group activities. Trainees were invited to discuss their experiences during the Covid-19 pandemic. They then engaged in pair-work to discuss self-care strategies and were encouraged to 'walk-and-talk' during this activity. Self-care strategies were then shared in the main group. Small group discussion was then facilitated with a focus on peer support, followed by a full-group discussion on how the group could support each other in the coming academic year. Trainees then went to their

selected sit spot where they took ten minutes for independent reflection, and to consider a personal commitment to self-care and peer support for the coming year. The participants then re-convened in the onsite cob cottage for refreshments. Finally, the group returned to the riverside to close the retreat. Following the retreat, consent was sought from attendees to participate in an evaluation of the pilot via a short survey.

5.5. Procedure

Participants completed a short 7-item survey to access their views on the impact of the nature-based retreat on their self-care and peer support prioritisation and intentions (See Figure 1). Four survey questions (Qs 1,2,4 &5) were posed on a 5-point likert scale. Three open-ended questions (Qs 3,6 &7) were also posed to allow participants to elaborate on their responses.

Figure 1.
Nature-Retreat Survey Questions.

1. How effective did you find the nature-based retreat in terms of the prioritisation of self-care?
2. How would you rate the likelihood that you will prioritise self-care in the coming academic year following the nature-based retreat?
3. Please describe any impact of the nature-based environment on how you thought about self-care
4. How effective did you find the nature-based retreat in terms of prioritising peer support?
5. How would you rate the likelihood that you will prioritise peer support in the coming academic year following the nature-based retreat?
6. Please describe any impact of the nature-based environment on how you thought about peer support
7. Please add any other comments you may have on the nature-based retreat, including your thoughts on any particularly effective aspects of the day and anything that could be improved. In your response. You can include feedback on activities including the silent walk, sit-spot, full group/small-group discussion

5.6. Results

The survey findings are discussed under the headings of self-care and peer support. Likert scale questions were analysed descriptively, while open-ended questions were organised using a deductive thematic approach, informed by the six self-care domains outlined by Butler et al (2019), with a seventh theme labelled ‘intentions’ included. The response rate was 100%, with all 10 participants responding to the survey. Table 1 provides a summary of the seven deductively mapped themes, and the participant responses linked to each.

Table 1.
Themes derived deductively from open-ended survey questions.

Theme	Related Quote
Physical	Being within a silent, distraction-free nature-based environment reminded me of how good it feels to keep the body moving, and to be outdoors …..well it made me realise that the setting is very important for me and that being outside no matter the weather is much better self-care for me than anything you could be doing inside.
Professio Workplace	It made me reflect on the importance of maintaining a self-care routine when the semester becomes extremely busy as it can often be neglected at this point. I also feel the group discussion allowed us to share our stories and to understand that everyone has had very similar experiences and to learn from others about how to deal with these situations..
Relations Peer support	Starting and finishing the session next to the sound of water while chatting amongst peers was effective I feel that we are quite a close class but the nature retreat made it possible to check in with others that I may not have had as much contact with before It reminded me of the importance of keeping in touch with everyone and chatting about trivia and other things going on in each other's lives, rather than just college and placement. It was very nice to connect with your team and with our peers outside of the college/zoom. ……
Emotiona	I felt it gave me a chance to reflect and ground myself in order to prioritise my self care before the semester begins ….. It was relaxing to be in contact with peers in a novel, peaceful environment. ..… really everyone has similar worries and concerns….. …. There is a level of empathy there that is not possible with people who have not gone through this course.….
Psycholog	I really enjoyed the silent walk, not using phones, and the overall setting. I actually found it quite restorative. Would definitely do it again. I really enjoyed the day. I thought it was a nice way to re-connect with everyone and catch-up before heading into another busy semester. I felt that the group discussion on the highs and lows of the year was a nice way of reminding us that we are all in the same boat in terms of our stresses and difficulties. Also, it was great to hear others' ideas on self-care and peer support to think about how these will be prioritised in the coming year.
Spiritual	I enjoyed being outdoors amongst the woodland and the water. I also enjoyed not using a phone for the duration. …being in nature for the duration also emphasised the positive impact of nature-based self-care activities The silent walk was particularly useful as we were all quite excited to meet up, this grounded us in the nature about us and set the scene for the discussions that followed
Intentions	This experiential reminder lent itself to me prioritising self-care in the coming year. By inviting us to a nature-based retreat, the reminder to prioritise self-care felt much more sincere than when it is mentioned via PowerPoint in a classroom! I feel a follow up group conversation would be needed to really identify workable peer support strategies. ….. we're arranging to meet up on wednesday now which is something. It would be even nicer though if we could meet up to do an activity outdoors together rather than meeting up over tea or coffee

5.6.1. Self-Care

60% of participants rated the retreat as extremely effective for the prioritisation of self-care, with a further 30% of likert ratings at 4/5, and one respondent neutral (3/5) on this point. A question on the likelihood of participants to prioritise self-care in the coming academic year following the retreat suggested that 40% rated it extremely likely, 50% rated it as very likely (4/5) and one respondent neutral (3/5). Participants were then asked about the impact of the retreat on how they thought about self-care. Emerging themes and participant responses are outlined in Table 1. Participants appreciated the nature-based setting and the physical activity involved. Responses indicated self-care benefits across all six domains of self-care identified by Butler et al (2019). Enhanced intentions to prioritise self-care were communicated. Participants also noted that the nature-based setting facilitated the opportunity to reflect, and commented positively on the silence, the sounds of nature and the absence of phones.

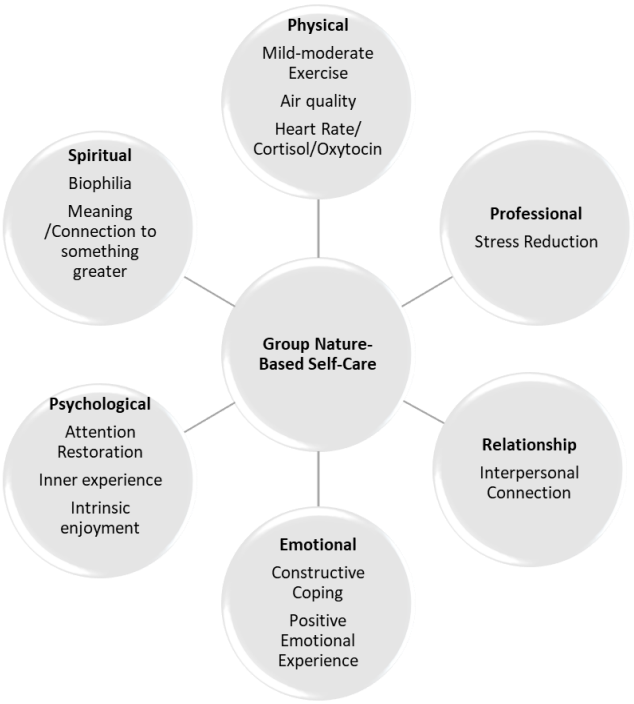
5.6.2. Peer Support

When asked about the impact of the retreat on the prioritisation of peer support, 60% of participants rated the retreat as extremely effective. 10% rated it very effective (4/5) with 30% neutral on this question (3/5). Only 1 participant considered it 'extremely likely' that they would priotitise peer support in the coming academic year, while 60% rated it as very likely (4/5) and 30% neutral on this point. Responses to open ended questions on peer support indicated a degree of reflection on peer engagement as a group, with mixed views expressed. The realisation that concerns, stresses and worries related to EP training were shared was valued by more than one participant. Some participants identified an opportunity for a follow-up to strengthen the peer support and engagement of the group who are going through the shared experience of EP training.

6. DISCUSSION

Overall, the findings suggested that participants were positive about the experience of the group, nature-based retreat in terms of self-care and peer support. The descriptive statistics indicated a tentative trend towards participants' anticipation of challenges in maintaining self-care and peer support practices. Deductive thematic analysis indicated that the group, nature-based format has the potential to impact on a broader range of self-care domains than physical and psychological, and therefore might offer enhanced, or indeed additive benefits when implemented alongside classroom-based psychological interventions such as ACT and mindfulness. Figure 2 illustrates a conceptual framework, informed by Butler et al's (2019) self-care domains, to structure our understanding of the potential benefits of group format, nature-based self-care interventions.

Figure 2.
Conceptual Framework for Nature-based Self-Care.



The limitations of this small-scale pilot study are noted and future studies are needed to further explore the potential of nature-based self-care interventions for professional EPs and EPs in training. The pattern of responses also indicates that maintenance of self-care and peer support prioritisation and intentions requires further study, therefore longitudinal studies in this domain would be of interest. The proposed framework in Figure 2 may provide a structure within which to explore this area in future research. In addition, the current study explored the impact of a 2-hour nature-based retreat. Further research into the effect of the quantum and type of nature-based activity would add to the knowledge-base in this field. Future studies should also consider accessibility so that any nature-based self-care retreat is as accessible as possible to all participants.

7. CONCLUSIONS

Ziede and Norcross (2020) contend that work is needed in terms of the 'psychological healthiness' of our professional psychology training programmes. They suggest a number of evidence-informed strategies to improve training including; positive faculty attitudes toward self-care, prioritising self-care content throughout training, looking at both the self and the system when problems arise for a trainee, programme auditing to evaluate the prevalence of humane values and self-care in training, inclusion of workshops addressing occupational hazards and self-care strategies, facilitating research on topics related to self-care, and supporting a paradigmatic shift towards 'life-affirming, health-oriented' training experiences. The current study indicates the potential for nature-based self-care in

educational psychology training, and for professionals in the field, as part of a shift towards a culture of life-affirming, health-oriented approaches to training and practice in educational psychology.

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AUTHOR INFORMATION

Full name: Therese Brophy
Institutional affiliation: Mary Immaculate College
Institutional address: South Circular Road, Limerick, Ireland
Short biographical sketch: Dr Therese Brophy is Joint Programme Director for the Professional Doctorate in Educational and Child Psychology at Mary Immaculate College, Limerick. During her time with the National Educational Psychological Service (*NEPS), she completed her Doctorate in Educational Psychology at University College London. Her doctoral research focused on school breaktime within the framework of self-determination theory. Publications and conference presentation topics include: mentoring in early career psychology, school breaktime and teacher-administered cognitive assessment. Her research interests include nature connection, personal construct psychology and the application of self-determination theory to the context of education.

Chapter #12

COMPARING ONLINE AND VIRTUAL REALITY MORAL DILEMMA DISCUSSIONS: FOCUSING ON MORALITY, PERSPECTIVE-TAKING, AND COMMUNICATION SKILLS

Aya Fujisawa
Department of Child Studies, Kamakura Women's University, Japan

ABSTRACT
This study explored the educational effects of online and virtual reality moral dilemma discussions (OMDD and VRMDD, respectively) among university students. In Study 1, participants were randomly assigned to an OMDD or VRMDD condition, participating in both conditions in acquainted pairs. The acquainted pairs discussed Heinz's dilemmas (1) and (2). The Standards for Public Space (SPS) and Communication Skill (CS) scales were measured separately before and after the experiment. Results revealed significant differences in the main effect of both conditions for the SPS subscales. Participants scored higher on the SPS egocentric and peer standards subscales in the pre-test than in the post-test, which had significant main effects at the time of the survey. OMDD and VRMDD practice showed decreased SPS subscale scores with a narrow social perspective (egocentric and peer standards) and were not related to the subscales with a wider social perspective (regional standards, care for others, and public values) and the CS scale. Similar to Study 1, VRMDD was conducted in the same manner in Study 2. SPS and the Interpersonal Reactivity Index scales were measured before and after the experiment. The results of Study 1 were replicated, and VR perspective-taking was confirmed.

Keywords: online moral dilemma discussion, virtual reality moral dilemma discussion, virtual reality perspective-taking, morality

1. INTRODUCTION

The frequency with which internet-based communication technologies have been used has significantly increased in the aftermath of the COVID-19 pandemic. Online conferencing system tools such as Zoom have proven particularly useful, and have facilitated a vast amount of the communication that has taken place during the pandemic (Fujisawa, 2022). Although online conferencing system tools are very useful and important, it is difficult to engage in virtual conversation that runs as smoothly as face-to-face conversation. Virtual reality (VR) technology has developed rapidly in recent years (Ademola, 2021; Faggiano & Fasanella, 2022). Consequently, the application of VR technology is no longer limited to specialized domains like gaming but has expanded to various contexts such as meetings and education (Rojas-Sánchez,Palos-Sánchez, & Folgado-Fernández , 2023). VR technology provides a highly realistic and immersive experience, allowing users to engage in conversation as if they were present in person, even though they are not in fact face-to-face. In this regard, VR technology certainly has the potential to replace online system tools. However, to date, its educational effects have not been empirically clarified in many cases.

Moral discussion has been extensively used as a teaching method worldwide, including to facilitate moral dilemma discussion (MDD). There are currently three established methods for conducting MDD: face-to-face MMD (FMDD), online MDD (OMDD), and VR moral

dilemma discussions (VRMDD), but the differences between them have yet to be explicitly clarified. Thus, the aim of this study was to compare and examine the differences between VRMDD and OMDD.

MDD (Blatt & Kohlberg, 1975) derives from Kohlberg's theory, which presents it as a teaching method for moral education. Prior to advocating for the effectiveness of MDD, Kohlberg (1971) theorized that morality has six stages of development, later contending that morality develops from Stage 1 to Stage 6 alongside cognitive development, and that MDD can be used to promote moral development (Blatt & Kohlberg, 1975). Heinz's dilemma is a key component of Kohlberg's theory. As one of the most well-known moral dilemma tasks, it is often used to facilitate MDD in moral education. In addition to Kohlberg's theory, Rest's (1979) Defining Issues Test has also been used to measure the stages of moral development (Bailey, 2011). This subsequently led to the development of the Defining Issues Test 2.

In Japan and other countries, morality develops with age in stages (e.g., Sakurai, 2011). Japanese researchers and teachers have notably collaborated, spending more than 40 years comprehensively accumulating knowledge on teaching materials that focus on moral dilemmas of interest to students, and that help to facilitate MDD that consider students' age and the educational effects of MDD (Araki, 2014). An interesting point concerning MDD is that it can encourage students to engage in free discussion by adopting moral dilemmas as teaching materials, in which multiple values conflict with each other. Although researchers have noted certain issues with MDD, in general, the conducting of MDD not only improves morality (Araki, 2014; Blatt & Kohlberg, 1975; Lind, 2019) and business ethics (Oser & Schlafli, 2010), but it also influences prosocial behavior formation (Salvador, 2019) while activating thinking and deliberating skills (Fujisawa, 2018).

As a result of these findings, Japanese researchers have spent time studying FMDD. However, to date, there has only been one study in the Nagasaki Prefecture in which the investigator conducted OMDD by connecting a group of online morality classes in elementary schools. In one study, university students accepted online discussions but reported preferring face-to-face discussions and considered online discussions supplementary to face-to-face discussions (Tiene, 2000). Hedayati-Mehdiabadi, Huang, and Oh (2020) discovered that under supportive conditions, a group of university students experienced a fresh sense of awareness after participating in ethics education using online discussions. Cain and Smith (2009) compared OMDD and FMDD in a group of pharmacy students and found that while FMDD allowed the students to ponder the subjects under discussion more effectively, the anonymity associated with OMDD opened it to criticism while hindering constructive discussion. Bell and Liu (2015) administered the Defining Issues Test 2 before and after conducting OMDD with college students, with students' scores increasing after the discussions.

Fujisawa (2018) conducted an FMDD with pairs of acquaintances at a university and administered the Standards for Public Space (SPS; Nagafusa, Sugawara, Sasaki, Fujisawa, & Azami, 2012) and the Communication Skill (CS) scales (Ueno & Okada, 2006) both before and after the FMDD took place. The SPS scale has five subscales: egocentric, peer standards, regional standards, care for others, and public values. These subscales correspond to Kohlberg's stages of moral development (Fujisawa, Azami, Sugawara, Nagafusa, & Sasaki, 2006). After the FMDD, the egocentric and peer standards subscales' scores decreased, and those relating to care for others increased.

The CS scale has four subscales: listening and speaking, non-verbal skills, assertion, and discussion. After the FMDD, the assertion and discussion scores increased. Fujisawa (2022) conducted FMDD and OMDD with pairs of acquaintances from the same university and administered the SPS and CS scales (in Microsoft Forms) before and after each discussion. Participants recorded higher scores on the SPS public values subscale after participating in OMDD than they did after FMDD, while there were no significant differences in the CS subscale scores.

As described above, OMDD using Zoom is a convenient and important resource, especially in the context of the COVID-19 pandemic; however, this type of OMDD is not entirely natural, with metaverse companies having notably accelerated their development research using VR technology. There are currently several ways to enter virtual spaces, including VR/HMD (head-mounted display), VR/desktop, and smartphones. Among these, VR/HMDs allow users to experience 3D in a form that is closest to reality. Several companies have developed VR/HMDs, with Meta's Meta quest 2 HMD (Figure 1) being the most widely used (Matthew, 2022). VR experiences are characterized by their immersiveness and interactivity. When wearing a VR/HMD, wearers are unable to see the outside world, allowing them to fully immerse themselves in the task at hand (Lee & Qiufan, 2021). Therefore, by wearing HMD, people can conduct OMDD as smoothly as if they were together in person.

Figure 1.
Individual small laboratory with VR/HMD.

Moral studies using VR have shown that VR technology enhances perspective-taking ability with regard to empathy (Bailenson, 2018; Herrera, Bailenson, Weisz, Ogle, & Zaki, 2018; van Loon, Bailenson, Zaki, Bostick, & Willer, 2018). This has been accomplished using the Interpersonal Reactivity Index (IRI; Davis, 1983). In another study by Francis et al. (2016), VRMDD was shown to increase pulses, which predicted that non-utilitarian judgments were being conducted. Using VR technology can promote participants to care more for others (Terbeck et al., 2021) and improve children's social skills (Kellems, Yakubova, Morris, Wheatley, & Chen, 2021). VR role-playing has also been shown to enhance the degree of "fantasy" experienced in the IRI (Davis, 1983; Fujimoto, Fujisawa, & Murota, 2023). VR role-playing is the act of wearing an avatar in a virtual space and acting out that role accordingly. It is thought that this facilitates the acquisition of another person's perspective.

The above findings support the idea that the use of VR in education positively influences morality. In this way, various effects of VR technology have been partially revealed in relation to morality. However, the effects of VR technology in the conducting of MDD, one of the most commonly used teaching methods in moral education in schools, have

yet to be clarified. It is also unclear whether CSs are enhanced through VRMDD, which is a more realistic proposal than doing so through OMDD. If CSs are enhanced in VRMDD as compared to OMDD, VR technology will be the more promising avenue in the post-COVID-19 era, with online activities now more advanced. Therefore, Study 1 examined whether VRMDD enhanced morality and CS in a group of students. Study 2 examined whether using VR technology in MDD changed perspective-taking abilities.

2. STUDY 1

2.1. Method

Figure 2.
Participant wearing VR/HMD in a small laboratory.

Figure 3.
Participants wearing avatars playing VRMDD in the virtual space MQW.

Figure 4.
Participants were divided into several people and performed VRMDD in the virtual space "ayalab classroom & park".

The study participants were 38 female university students who were randomly assigned to the OMDD or VRMDD condition. The OMDD was conducted via Zoom using individual personal computers, with participants in the VRMDD using a VR headset (Meta Quest 2; Figures 1 and 2). Pairs 1 and 2 and the experimenter participated in separate small laboratories. In the VRMDD condition, the Meta Quest Workrooms (MQW) by Meta were used as the virtual space for conducting the VRMDD (Figure 3). The participants and experimenter wore VR/head mounted displays (VR/HMD) to enter the MQW as their avatars. The avatars moved in synchronization with the realistic body movements of the participants (e.g., blinking, neck or face orientation, and hand movements). In each experiment, the assistants who conducted this experiment alongside the study author explained to each participant how to use VR. Under both conditions, after following the experimenter's instructions and practicing for a period of time, the pairs discussed Heinz's dilemmas (1) and (2). Figure 3 shows the setup for the VRMDD condition. The discussion ended when the pairs reached a conclusion. The SPS and CS scales were administered both before and after the relevant discussions. The laboratory was ventilated, and the experimental apparatus was disinfected with alcohol. VR masks were also used to prevent the spread of infections.

The SPS scale comprises 25 items including five subscales and evaluates the standards an individual considers important concerning egocentric behavior in public spaces in the pursuit of profit or freedom, without concern for the impression it creates on others. Peer standards denote the importance of alignment with peers; regional standards represent the importance of local community approval; care for others refers to the importance of caring for unrelated individuals; and public values denote concern for the public interest and fairness to society as a whole. Fujisawa et al. (2006) confirmed the reliability and relevance of the scale. These five subscales correlate with the five stages of the Defining Issues Test (Fujisawa et al., 2006). Each item calls for a response on a five-point scale (1 = "does not describe me at all"; 5 = "describes me very well"). The total scores are calculated for each subscale, with higher corresponding subscale scores indicating a greater tendency to perform to that behavioral standard.

As noted above, the CS scale (Ueno & Okada, 2006) comprises four subscales: listening and speaking, non-verbal skills, assertion, and discussion. Listening and speaking, and non-verbal skills relate to the ways in which people directly and indirectly deliver and receive conversational input from others. Assertion is a CS that can help build better relationships by openly conveying and receiving opinions with respect for others, rather than unilaterally imposing one's own opinion or having to tolerate a conversation partner who does so. Discussion ties together the other skills that comprise communication abilities. Following the scoring manual developed by Ueno and Okada (2006), synthetic scores were calculated for each field scale.

A higher score indicated better skills in that area.

2.2. Results and Discussion

Tables 1 and 2 present the basic statistics relating to the SPS and CS scores. After confirming the homogeneity of both conditions, an analysis of variance (ANOVA) was conducted with two factors for each subscale: condition (OMDD and VRMDD) and time of the survey (pre-test and post-test). The results obtained revealed significant differences in the main effect of time of the survey for the SPS subscales [egocentric: $F(1,36) = 5.5$, $p > .05$, biased $\eta^2 = .13$; peer standards: $F(1,36) = 5.9$, $p > .05$, biased $\eta^2 = .14$]. Participants recorded significantly higher scores on the SPS egocentric and peer standards subscales in the pre-test than in the post-test. The CS subscale scores showed no significant differences.

Table 1.
SPS subscale scores for each condition.

	Condition	Egocentric		Peer standards		Regional standards		Care for others		Public values	
		M	SD	M	SD	M	SD	M	SD	M	SD
Pre-test	OMDD	9.4	3.1	11.7	3.9	19.3	3.1	21.2	1.9	22.1	2.8
	VRMDD	9.2	2.8	12.7	4.7	20.2	4.0	21.5	3.0	22.7	1.3
Post-test	OMDD	8.7	3.0	11.4	3.3	19.6	3.6	21.2	2.2	21.9	2.8
	VRMDD	8.4	2.8	11.2	4.2	20.3	4.1	21.0	3.2	22.8	1.7

Table 2.
CS subscale scores for each condition.

	Condition	Listening and speaking		Non-verbal		Assertion		Discussion	
		M	SD	M	SD	M	SD	M	SD
Pre-test	OMDD	1.8	0.5	1.8	0.8	13.9	1.8	4.1	0.9
	VRMDD	1.9	0.7	2.0	0.5	13.8	2.0	4.0	0.7
Post-test	OMDD	1.7	0.6	1.9	0.7	13.8	2.6	4.1	0.9
	VRMDD	1.8	0.7	2.1	0.5	13.8	2.4	4.3	0.7

The author examined whether using VRMDD improved morality, CS, and FMDD. Interestingly, the findings obtained seem to indicate that OMDD and VRMDD lowered behavioral standards with a narrow social perspective (egocentric and peer standards) but were not at all related to behavioral standards with a wider social perspective (regional standards, care for others, and public value) or to CS.

Regarding the SPS scale, the findings partially confirmed those of Fujisawa (2018). The same results for the egocentric and peer standards subscales were found in this study using OMDD and VRMDD as in the study by Fujisawa using FMDD; both subscale scores decreased after all forms of MDD, which means that those relating to narrow social perspectives (egocentric and peer standards) decreased. OMDD and VRMDD did not influence behavioral standards with wider social perspectives, such as regional standards, care for others, and public value, whereas FMDD did. These results suggest that MDD reduces narrow social perspectives (egocentric and peer standards). Therefore, it can be concluded that FMDD, OMDD, and VRMDD all reduce narrow social perspectives, meaning that any style of MDD can improve narrow perspectives (egocentric and peer standards).

Concerning the CS scale, the findings did not support those of Fujisawa (2018) with regard to FMDD. Although FMDD improved assertion and discussion in Fujisawa's study, VRMDD did not improve any of the CS subscales in this study. As CS represents one of the important forms of social skills, the author assumed that FMDD would influence CS, but that VRMDD would not. In online communication, including VR and Zoom, it can be difficult to speak in turn; many people hesitate to speak up, and it is not possible to exchange opinions

with people near us in online discussions. Therefore, the author assumed that VRMDD would not affect CS scale scores, although VRMDD is more realistic than OMDD. It is difficult for VRMDD to replace FMDD as regards CS. These results highlight the fact that VRMDD, OMDD, and FMDD have their own characteristics, and that any method can be proven effective depending on the relevant needs or social situations.

Clarifying whether VR technology or OMDD enhances morality and CS is an important objective. However, as there were a relatively small number of participants in this study, future researchers should examine the effects of VRMDD on a larger group. VR technology can notably improve perspective-taking abilities (Herrera et al. 2018). Although van Loon et al. (2018) and Herrena et al. (2018) previously stated that role-playing in VR, an established teaching method for morality classes, improves perspective-taking ability, this phenomena has been fully replicated in Japan. Therefore, Study 2 examined whether using VR technology in MDD changed perspective-taking abilities in Japan.

3. STUDY 2

3.1. Method

Study 2 examined whether using VR technology in MDD changed participants' perspective-taking ability, and whether the results in Study 1 were replicated. Specifically, it examined whether VRMDD improved morality.

The participants were 24 female university students. Each participant entered the laboratory (Figure 1) individually, wore a Meta Quest 2 HMD (Figure 2), and performed the VRMDD with a participating pair from another laboratory. Heinz dilemmas (1) and (2) were used in the VRMDD. An assistant assisted the participants to ensure that they were wearing the experimental apparatus correctly, and the operating procedures were fully explained and confirmed before the experiment commenced. The MQW was used as the virtual space for conducting VRMDD. Both the participants and experimenter wore VR/HMDs to enter the MQW (Figure 3) as their avatars. Microsoft Forms was used to administer pre- and post-tests. Before and after the discussions, the SPS scale and the IRI (Davis, 1983) were administered. The laboratory was ventilated, and the experimental apparatus was disinfected with alcohol. VR masks were also used to prevent the spread of infections.

The IRI, created by Davis (1983), measures empathy using multiple dimensions and was translated by Sakurai (1988) into Japanese. This was the version used in this study. The IRI consists of four subscales (perspective-taking, fantasy, empathic concerns, and personal distress) comprising 28 items. Responses were rated on a four-point scale (1 point = "I don't think so"; 4 points = "I think so"). The total score for each subscale was calculated as described by Sakurai (1988).

3.2. Results and Discussion

Tables 3 and 4 present the basic statistics for the IRI and SPS subscale scores. The results of the ANOVA pre- and post-VRMDD concerning the IRI and SPS subscales were examined. The results revealed significant differences in the main effect for the IRI subscales [perspective-taking: $F(1,15) = 4.3$, $p < .10$, $\eta^2 = .22$; and personal distress: $F(1,15) = 3.7$, $p < .10$, $\eta^2 = .20$]. The perspective-taking scores were higher on the post-test than on the pre-test. The VR perspective-taking results were similar to those obtained in previous studies (Herrera et al., 2018; van Loon et al., 2018). Contrastingly, personal distress scores were higher on the pre-test than on the post-test. The results revealed significant differences in the main effect for the SPS subscales [egocentric: $F(1,23) = 3.8$, $p < .10$, $\eta^2 = .14$); and peer-standard $F(1,23) = 10.4$, $p < .01$, $\eta^2 = .31$]. The scores for the egocentric and peer standards were lower in the post-test than in the pre-test.

Table 3.
IRI subscale scores in VRMDD.

	Perspective-taking		Fantasy		Empathic concerns		Personal distress	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Pre-test	22.4	2.8	20.6	4.4	21.9	3.8	20.2	3.5
Post-test	23.7	3.4	21.3	4.2	22.1	3.5	19.0	3.7

Table 4.
SPS subscale scores in VRMDD.

	Egocentric		Peer standard		Regional standard		Care for others		Public values	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Pre-test	9.3	2.8	12.3	4.6	20	3.9	21	3.4	22.7	1.4
Post-test	8.5	2.8	10.8	4.1	20.1	4.0	20.7	3.2	22.7	1.7

4. CONCLUSION

This study investigated the educational effects of VR technology, which is said to provide a more immersive and realistic feeling than other comparable online tools. To this end, MDD, which is frequently used in moral education situations, was employed. Specifically, in Study 1, two conditions were established, VRMDD and OMDD, which were compared to SPS (corresponding to stages of moral development) and CS. In Study 2, IRI was measured before and after VRMDD, and reproducibility was examined to determine whether VR perspective-taking experiences (VRPT; Herrera et al., 2018; van Loon et al., 2018) are also observed in Japan.

No significant differences were found between the conditions assessed in Study 1, suggesting that OMDD and VRMDD had similar educational effects. VRMDD is said to have a more immersive and realistic feel than OMDD. As a result, it was thought that VRMDD conditions could create a more realistic discussion scene. However, the changes observed in participants' CS in Study 1 did not suggest such an outcome. In this experiment, if the sole purpose was to facilitate a moral discussion within a virtual environment, the necessity of the virtual space may not have been as evident compared to a scenario where role-playing was an essential component performed within the virtual space. Furthermore, even in virtual space, it has been confirmed that there is a slight delay in the timing of conversation. Therefore, even if VRMDD was able to offer a more realistic conversation format than OMDD, it may not have proven as realistic as FMDD. To clarify this potential issue, it would be necessary, for example, to conduct the same conversation type using FMDD, OMDD, and VRMDD formats, and to compare the results obtained in the future.

In terms of SPS, similar to the findings on FMDD in a previous study (Fujisawa, 2018), the post-test scores indicated a decrease in narrow social perspectives (egocentric and peer-standard). These results suggest that morality can be partially improved by performing

OMDD and VRMDD, and that the methodology can have educational effects when discussing values, whether in person, online, or in VR. In the future, it is expected that the spread of the COVID-19 virus will subside, and opportunities for face-to-face discussions will subsequently increase. However, discussions about values (MDD, Philosophy Café, and so on) are expected to encompass participants with diverse values. If VR or online technologies are used, it is possible to easily create a moral discussion that brings together a diverse range of participants, and it is suggested that the participants involved may subsequently become more morally minded (in some conditions, see Fujisawa, 2022). Notably in this study, VRMDD and OMDD had no effect on a broader social perspective (consideration of others). Therefore, in the future, it will be necessary to consider not only the methods and techniques to be used during MDD, but to also consider the facilitation and teaching methods used during such discussions.

Regarding Study 2, the presence of VRPT confirmed in previous studies (Herrera et al., 2018; van Loon et al., 2018) was also confirmed in the Japanese participants of this study. Japan and many other countries in Asia provide moral education as part of the standardized national education curriculum, in which children are expected to consider the feelings and positions of others. The results of this study suggest that it is possible to improve students' perspective-taking ability by using VR technology during moral education classes. Normally, in these classes, teachers instruct students to consider the feelings of someone other than themselves. However, the results of this study suggest that it may be possible to facilitate this type of learning by having students experience the feelings of someone else in a virtual space (e.g., Fujimoto et al., 2023). Although it is too soon to draw definitive conclusions, it is likely that future teaching methods will change significantly depending on how VR technology is used in educational settings (Table 4).

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AUTHOR INFORMATION

Full name: Aya Fujisawa
Institutional affiliation: Department of Child Studies, Kamakura Women's University
Institutional address: 〒247-8512 Ohuna6-1-3 Kamakurashi Kanagawa, Japan

Short biographical sketch: I was born in the Kyoto prefecture. I am interested in moral psychology and have received a Ph.D. (Human Developmental Sciences) from Ochanomizu University in Tokyo. I was offered my current position after working as a fixed-term lecturer at Tokyo Gakugei University. In the past, I was a researcher at the Research and Legislative Bureau of the National Diet Library as a member of "Projects on Problems Concerning Youth." I also contributed as an expert committee member (Human Science) for the National Personnel Authority Examination and was designated a committee member of the Japan Society for the Promotion of Science Research Fund. In addition, I have conducted research on the sociality and morality of children in collaboration with schools and kindergartens and developed the relevant teaching materials using virtual reality. I have also conducted international collaborative studies on morality.

Chapter #13

WHAT IS THE RELATIONSHIP BETWEEN CREATIVITY AND BOREDOM?

Yusuke Yamazaki
Graduate School of International Management, International University of Japan, Japan

ABSTRACT
The connection between creativity and boredom has received attention from researchers but with contradictory findings on whether boredom has a positive or negative influence on creative outcomes. To examine this issue, this study investigated how the state of boredom affects creative performance, assessing four dimensions of creativity: fluency, flexibility, originality, and elaboration. There were 25 participants, half of whom completed a boredom task before completing a creativity task. The results suggested that the influence of boredom on creativity varied depending on the dimension of creativity. The study highlights the importance of specifying dimensions of creativity and suggests that taking on tedious tasks may help individuals achieve more creative performance.

Keywords: creativity, boredom, dimensions of creativity, Japan, university students.

1. INTRODUCTION

Creativity is essential for working and living in the 21st century (Donovan, Green, & Mason , 2014; Rotherham & Willingham, 2010; World Economic Forum, 2020). Moreover, creativity plays an important role not only in fostering innovation in the workplace (Zhou & Hoever, 2014) but also in making improvements in daily activities (Tanggaard, 2013). These notions confirm the importance of creativity in making something new, useful, and accessible for our society. It is crucial to continue exploring various influential factors that influence creativity.

Since the 1950s, creativity has been studied in various fields such as psychology (Amabile, Brasade, Mueller, & Staw, 2005; Gasper, 2004; Guilford, 1950; Hennessey & Amabile, 2010; Hoseinifar et al., 2011; Tang, Toyama, Nagamine, Miwa, & Aikawa, 2018; Vodanovich & Watt, 2016), education (Kaufmann, 2003; Plucker, Beghetto, & Dow, 2004), and management (Gilson & Shalley, 2004; Madjar & Shalley, 2008; Zhou & Hoever, 2014; Winchester & Medeiros, 2023). Although the definition and fundamental notion of creativity have diverged across several fields, multiple definitions of creativity have converged on two criteria: novelty and task-appropriateness (Cropley, 2011; Hennessey & Amabile, 2010). Novelty, the most common element in the definition of creativity, is associated with the concept of originality (Kaufmann, 2003). Appropriateness is described as the utilitarian characteristic of creative work, based on usefulness in addressing specific tasks (Mayer, 1999).

Several studies reported important findings about the psychological factors of creativity, including motivation (Amabile, 1985), personality traits (Hoseinifar et al., 2011), emotion (Gasper, 2004; Gasper & Middlewood, 2014; Harris, 2000; Mann & Cadman, 2014), and environments (Adams, 1968; Amabile, 1982; Baer, 1998; Khatena, 1971, 1973;

Lamontagne, Keegel, Louie, Ostry, & Landsbergis, 2007). Among these factors, the present study focused on a particular emotion: boredom.

Over recent years, boredom has been much studied in the area of psychology (Chin, Markey, Bhargava, Kassam, & Loewenstein, 2017). Boredom is considered a psychological and affective state related to monotonous and repetitive work (Eastwood, Frischen, Fenske, & Smilek, 2012; O'Hanlon, 1981), challenging tasks (Chin et al., 2017), settings without meaning (Fahlman, Mercer, Gaskovski, Eastwood, & Eastwood, 2009), and low stimulation (O'Hanlon, 1981). People experience boredom ubiquitously and frequently in daily life (Bench & Lench, 2013; Elpidorou, 2018). Being bored may be unpleasant (Loukidou, Loan-Clarke, & Daniels, 2009) because people tend to think that it is better to do something than to have nothing to do. Furthermore, boredom also occurs when people are disengaged at work (Loukidou et al., 2009; Schaufeli & Salanova, 2014). Typically, boredom is viewed as a hallmark of unproductivity. Indeed, boredom has been linked to a range of negative consequences (Fahlman et al., 2009). These include unsustained attention (Eastwood et al., 2012), an increased number of mistakes (O'Hanlon, 1981), low motivation for study (Mann & Robinson, 2009), poor performance (Schaufeli & Salanova, 2014), and technological addiction (Zhang, Li, & Yu, 2022).

Yet, there is a contrasting view that boredom might lead to a moment of inspiration. Even though boredom has a negative influence on mental activities, several researchers have suggested that the state of boredom may facilitate creativity (e.g., Burkus, 2014; Carroll, Parker, & Inkson , 2010; Harris, 2000).

Harris (2000) investigated various aspects of boredom, including its perceived benefits, in a mixed-methods study. Perceived benefits of boredom were analyzed with a qualitative approach by asking 170 university students to write their perceptions and thoughts. Results indicated three benefits including the opportunity for thought and reflection, the opportunity to try something new, and creativity—so that 80 % of them may have the experience of something creative at times when they feel bored. Accordingly, one can infer that boredom is relevant to creativity.

In addition, Raffaelli et al. (2023) examined the conscious minds of creative individuals during idle time with two studies. The first study with the experimental approach explored the ongoing consciousness of 81 adults by instructing them to speak out loud their thoughts for 10 minutes. The results showed that participants with high originality scores with the divergent thinking task experienced less boredom, recorded more word counts while speaking, and had more flexible and smooth transitions between thoughts. The second study indicated that those who described themselves as highly creative also experienced less boredom during the COVID-19 pandemic. These results may indicate that creative individuals tend to be more engaged even when the task is less captivating.

In the area of management, Carroll et al. (2010) conducted a qualitative study using a sample of 26 senior managers in order to capture aspects of boredom through leadership development programs. They found that the experiences of boredom "certainly appear to provoke ideas of challenge in the minds of individuals" (Carroll et al., 2010, p. 1038). Their findings suggest that boredom can lead to activities that produce "meaning, interest and engagement" (Carroll et al., 2010, p. 1038), indicating that boredom serves to provide cognitive variation and information for generating creativity. Although the research of Burkus (2014) was conceptual rather than experimental, he argued that boredom might increase the creativity of an individual's work in organizations. His study implied the importance of new projects or programs to leverage boredom to help organizational workers enhance creativity (Burkus, 2014).

There are studies that suggest that boredom has a positive influence on creativity. The study of Mann and Cadman (2014) presented a positive relationship between the two constructs. Their research design consisted of two studies. The study assigned participants to a control group and an experimental group that experienced boredom by writing down telephone numbers. The first study involved 80 participants from a community church: 40 in a control group and 40 in an experimental group that experienced boredom by writing down telephone numbers for 15 minutes. Both groups were required to do a creative task by listing as many different items as possible. Two raters evaluated the quality of the items as creative performance. Results of the first study revealed a significant difference between the groups in terms of the number of writing items and an insignificant difference in terms of the quality rating of the items. Subsequently, the second study had a sample of 90 participants, 30 in a control group, 30 in the first experimental group who were required to write down telephone numbers, and 30 in the second experimental group who were instructed to read them. The second study applied the same creative task and assessment methods. Results demonstrated a significant difference among the three groups with regard to the number of writing items for the creative task as well as the rates of quality ratings. Post hoc tests revealed that the control group significantly differed from the two experimental groups in terms of the number of writing items and the rates of quality ratings.

Gasper and Middlewood (2014) found that participants 105 university students who were induced to be bored or elated engaged in more associative thought on the association task than participants who were induced to be relaxed or distressed. This suggests that the dimension of boredom vs. elation is important for creative performance. Gasper and Middlewood (2014) discussed that elation facilitates sensation seeking for the expansion of one's repertoires, while boredom also promotes sensation seeking for finding something interesting to do. Thus, their study seems to support a positive relationship between creativity and boredom. In contrast, the study of Haager, Kuhbandner, and Pekrun (2018) showed that boredom undermined creative performance. The study found that boredom induced by repeated tasks can impede the fluency of idea generation. With the inconsistency in empirical results, further investigation of the relationship between creativity and boredom is needed.

Based on the study of Guilford (1967), creativity can be categorized into convergent and divergent creativity. Divergent creativity is associated with generating multiple ideas for a given problem, which can be subdivided into four dimensions: fluency, flexibility, originality, and elaboration. The current study examined whether there is a positive relationship between creativity and boredom with regard to the four dimensions: fluency, flexibility, originality, and elaboration. It is estimated that a level of higher boredom leads to a higher score on the assessment of the creativity test, and a lower level of boredom leads to a lower score. Thus, this study examined the following hypothesis:

H1: Boredom leads to a greater number of responses on the creativity test.
H2: Boredom leads to more flexible responses on the creativity test.
H3: Boredom leads to more original responses on the creativity test.
H4: Boredom leads to more elaborated responses on the creativity test.

2. METHOD

2.1. Participants and Sampling Procedure

Initially, there were 26 participants in the main study, but one participant was eliminated from the analysis due to erroneous instruction during the experiment. Therefore, data from 25 participants were used for the analysis. Participants were university students

in Japan, recruited from their acquaintance with the author or the course Biological Foundations of Mind and Behavior. The experiment was conducted across 4 weeks from November to December 2021. The whole experiment was conducted in Japanese and, all participants had sufficient language ability to follow the instructions. Each participant was assigned to an experimental or a control group with a randomization procedure.

2.2. Material

The boredom task was created with reference to the experiment by Mann and Cadman (2014) and was consistent with the cognitive aspect of boredom discussed by Eastwood et al. (2012) in terms of the repetition of simple tasks. The participants in the experimental group were presented with an online document that contained a list of phone numbers and were asked to write down the number on paper for 10 minutes. The phone numbers were randomly generated by the author. The file contained 210 phone numbers, with 14 numbers on each page.

Creativity was measured by the S-A creativity test. The S-A creativity test was developed based on Guilford's theory (1967) on divergent thinking for Japanese participants. S-A Creativity test was used in numerous studies on creativity in Japan. For example, Ishiguro et al. (2022) found associations between divergent thinking, creative achievements, and perception of own creativity. In addition, the S-A creativity test has been used to examine creativity at biological and physiological levels (Nobukawa et al., 2020; Takeuchi et al., 2010). The test asks participants to write down responses in three domains: (1) possible uses of an item (e.g., list possible usages of newspapers); (2) desire for a particular item (e.g., what kind of bag would you wish to exist?); and (3) possible consequences of novel circumstances that are unlikely to happen (e.g., what would be the consequences if everyone could fly without mechanical aid?). The current study used only the third part of the S-A creativity, the Consequences test, due to the possibility of mitigating boredom as the participants engage with the test. The present study selected the Consequences test because responses tend to obtain high rating scores (Hass & Beaty, 2018).

The questions and instructions of the S-A creativity test were shared with the participants with a laptop computer (Apple, MacBook Pro 13). The author and participants communicated online using Zoom (ver. 5.8.4) during the experiment.

2.3. Procedure

The author set up the online link for the experiment with Zoom and sent the link to each participant. Each session of the experiment had only one participant.

At the beginning of the session, an overview of the experiment was provided to the participant, and they were asked to prepare their pen and paper. Participants in the experimental group worked on the boredom task for 10 minutes. They received a file containing a list of telephone numbers via email. The file was created by power point and each slide contained 14 telephone numbers and there were 15 slides in total. The author and participants turned off the camera and microphone function on Zoom throughout the boredom task. To prevent instilling motivation in transcribing numbers, the remaining time for the boredom task was hidden from the participants. Participants were asked to write down as many telephone numbers as they could. When 10 minutes had passed, the author instructed participants to put down the pen. After completing the boredom task, the author asked the participants to write the degree of boredom they felt during the task on paper on a 5-point Likert scale (1 = Not boring at all, 5 = Extremely boring).

Participants in both the experimental and control groups performed the S-A creativity test. The content of the Consequences test was displayed on the author's computer screen and shared via Zoom. While briefing, the experimenter showed the example of the question and the subsequent answers. Participants were asked to write down a list of consequences in each scenario. They were instructed to produce as many consequences as possible for each prompt. Participants were informed that they were free to write outlandish answers. They were informed that their points would not be deducted from whatever they wrote as an answer. Before moving on to the real questions, the participants engaged in one practice question for 2 minutes ("What would happen if there is no clock in the world?"). After the practice question, participants were reminded of the overall instruction of the Consequences test. There were two questions ("What would happen if paper disappeared from the world?" and "What would happen if humans no longer needed food to live?"), and participants were given 5 minutes to answer both questions. The author and participants turned off the camera and microphone during the S-A creativity test. Upon finishing the creativity test, all participants were asked to take photographs of all of their responses including telephone numbers, the degree of boredom felt during the boredom task, and answers for the S-A creativity test, and send the images to the author via e-mail.

2.4. Evaluation of the Creativity Task

Based on Guilford (1967), four criteria were introduced to evaluate divergent creativity: fluency, flexibility, originality, and elaboration. Fluency was defined as the number of answers. Flexibility was considered as the ability to provide answers from a variety of perspectives. Originality was defined as the rarity of the responses relative to all participants' responses. Lastly, elaboration was considered to be the ability to generate detailed ideas.

To evaluate creativity, the present study consulted a third party to ensure the objectivity of the assessment. Creativity was evaluated by Saccess Bell, an institution specializing in psychological assessment. After completing the experiment, the author transcribed the list of consequences written by each participant to a corresponding segment in a test sheet. The test sheets were sent to Saccess Bell through the mail. Later, CSV files containing the assessment of creativity were sent from Saccess Bell.

2.5. Statistical Design

The experiment was conducted with a between-participants design. The independent variable was boredom experience, and the dependent variable was creative performance. To analyze the effect of boredom on creativity, an independent *t*-test was used to calculate the mean frequency of the number of answers given as well as to examine the mean scores of flexibility, originality, and elaboration.

3. RESULTS

Table 1 provides the overall mean, standard deviation, *t*-value, and significance for each criterion of creativity in each group. The mean score of boredom felt during the boredom task in the experimental group was 2.41.

The independent-samples *t*-test showed no significant difference in fluency, $p = .09$; flexibility, $p = .18$; and originality, $p = .45$. For elaboration, the results of the independent-samples *t*-test illustrated that the difference in the detail of the ideas between the two groups was significant, $p = .03$. The findings demonstrated that the experimental group produced more elaborate responses than the control group.

Table 1.
Relation of Boredom to Creativity Elements of Fluency, Flexibility, Originality, and Elaboration in the Experimental and Control Group.

Creativity		Experimental	Control	*t*
	N	12	13	
Fluency	Mean	15.08	12.31	1.85
	SD	4.42	3.01	
Flexibility	Mean	10.00	8.85	1.40
	SD	2.34	1.77	
Originality	Mean	3.92	3.31	0.78
	SD	1.98	1.93	
Elaboration	Mean	14.08	11.15	2.37*
	SD	3.50	2.58	

*$p < .05$.

4. DISCUSSION

4.1. General Discussion

The current study used an experimental design to examine whether a state of boredom affects creativity. The method used to induce boredom was the telephone writing task, and the person's creativity was measured with a part of the S-A creativity test asking about the consequences of an improbable event. Creativity was examined in four dimensions: fluency, flexibility, originality, and elaboration. Hypothesis 1 predicted that the experimental group would generate a greater number of responses on the creativity test than the control group. Hypothesis 2 stated that the experimental group would generate more flexible responses on the creativity test than the control group. Hypothesis 3 predicted that the experimental group would provide more original responses on the creativity test than the control group. Hypothesis 4 stated that the experimental group would provide more elaborate responses on the creativity test than the control group.

The results revealed that the difference in the number of responses between the two groups was not significant. Therefore, Hypothesis 1 was not supported. Next, the results demonstrated that the categories of responses between the two groups were not significant. Thus, Hypothesis 2 was not supported. The difference in points given to rare responses was not significant between the two groups. Hence, Hypothesis 3 was not supported. Furthermore, the results of the independent-samples *t*-test illustrated that the difference in the detail of the ideas between the two groups was significant. The finding demonstrated that the experimental group produced significantly more elaborate responses than the control group. Hypothesis 4 was accepted.

Overall, the results indicated the dismissal of fluency, flexibility, and originality, and acceptance of elaboration. This implied that boredom promotes more detailed responses in the creativity test. Accordingly, boredom's influence on creativity varied by each dimension of creativity. This notion indicates the need to further investigate those relationships, particularly the aspect of elaboration due to the acceptance of the relationship. Also, the present study might support a premise derived from past literature that the relationship between creativity and boredom is inconsistent. That is, some dimensions of creativity may be facilitated by boredom, while others may not. It will be important to specify which dimensions of creativity to investigate boredom's effect on creativity.

4.2. Comparison with Previous Studies

The results did not observe the effect of boredom on creativity in terms of fluency. This tendency contradicts the findings of past research. In part of the study of Mann and Cadman (2014) using a creativity task, the number of answers obtained was significantly greater when a higher level of boredom was experienced. On the other hand, the current study is aligned with the results of Haager et al. (2018), which demonstrated a decrease in fluency performance as more boredom was induced.

With regard to flexibility, originality, and elaboration, little research has analyzed those dimensions in the context of boredom. Without the factor of boredom, flexibility was used as a criterion of creativity in studies by Iwasaki (1971) and Yamaoka and Yukawa (2016). Some studies dealt with the topic of creativity using the criteria of flexibility (Iwasaki, 1971; Yamaoka & Yukawa, 2016), originality (Raffaelli et al., 2023), and elaboration (Suryandari, Rokhmaniyah, & Wahyudi, 2021). Yamaoka and Yukawa (2016) examined whether mind-wandering enhances creative problem-solving ability. Sixty-two undergraduate students participated in their study, and students were assigned into groups with and without mind-wandering sessions before the creativity test. The creativity test was evaluated by several criteria including flexibility. Results showed that participants who engaged in mind-wandering more frequently obtained a higher score on creativity tests in terms of flexibility. Raffaelli et al. (2023) investigated the internal thoughts of creative individuals during the unstructured resting period. One of their studies monitored the participants' thoughts by letting them speak their thoughts for 10 minutes. The results found that those with high originality with the divergent thinking task perceived less boredom, spoke more words, and had more loosely associative thoughts. Suryandari et al. (2021) investigated how a scientific reading-based project could facilitate creative thinking skills among elementary school students. Their findings observed a tendency to develop more detailed ideas in essays after participation in the scientific reading-based project. The influence of boredom on other dimensions of creativity such as flexibility and elaboration need further examination.

4.3. Limitation

The major limitation of this study concerns participants' boredom experience. The participants in the experimental group may not have felt much boredom during the telephone writing as the author expected. The average level of boredom felt during the telephone writing task was 2.41. There are several possible explanations as to why participants only experienced lower levels of boredom. First, the author did not monitor participants during the telephone writing task. Both the author and the participants turned off the camera to ensure less distraction while writing telephone numbers. However, since there was no supervision from the author, participants may have found autonomy during the writing task. Second, the author did not specify the details of the writing process such as the pace of writing and the number of telephone numbers per paper. The lack of instructions in these elements could also provide some degree of freedom during the telephone writing task. Furthermore, the telephone writing task could not induce much boredom in participants because writing down telephone numbers was not an activity they typically do in real life. It is possible that participants experienced more boredom if the task to induce boredom emulates a real-life situation such as asking them to wait or listening to an esoteric talk before the creativity test.

Another limitation of this study is the lack of information regarding participants. The present study did not gather data about the participants such as their age, SES, gender, level of creativity, and other variables. Including these variables in the analysis can be crucial to

identify the central effect and exclude the possibility of the other confounding effects of these variables. Furthermore, the present study could not report the psychometric characteristics of the S-A creativity test such as validity and reliability. The lack of measurement of these psychometric properties may affect the interpretation of the results.

4.4. Implications

The current study offers both methodological and practical implications. A methodological implication, as mentioned above, is to focus on dimensions of creativity. In the current study, the qualitative sides of creativity were examined from three components: flexibility, originality, and elaboration. Since those dimensions used in this study were derived from a single concept of creativity introduced by Guilford (1967), similar results were expected across the three components. The findings of this study, however, differed between the three components, demonstrating that boredom only had a significant effect on elaboration, with an insignificant influence on flexibility and originality. Examining the elements comprising creativity seems to be essential. Thus, it is crucial to specify which component of creativity is analyzed. For fluency, although the effect was not observed, the experimental group did report more answers than the control group. Future research can incorporate different types of creative tests or demographics to further clarify the effect of boredom on creativity in terms of fluency.

The study also provides practical implications related to feelings of boredom in the workplace and education sector. Boredom has been viewed as a negative emotion by the public and is often associated with counterproductivity. However, boredom may have some benefits in itself. Embracing a sense of boredom at work or school could be worthwhile. For individuals attempting to resolve an issue or propose a creative solution, the results of the present study indicate that taking on a tedious task may help them achieve more creative performance.

5. CONCLUSION

The present study used an experimental design to investigate whether boredom affects creativity. There were discrepancies among creativity research with regard to whether boredom affects creativity or not (Mann & Cadman, 2014; Haager et al., 2018). Among the four dimensions of creativity, this study indicated that a state of boredom may bring positive influences on elaboration. However, the effect of boredom was not observed in the dimensions of fluency, flexibility, and originality. This discrepancy suggests that it is important to consider the elements of creativity for the study of creativity. Future research into boredom and creativity should focus on the internal elements of creativity and establish how boredom affects each element differently.

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AUTHOR INFORMATION

Full name: Yusuke Yamazaki
Institutional affiliation: Graduate School of International Management, International University of Japan
Institutional address: 777 Kokusaicho, Minamiuonuma, Niigata 949-7248
Email address: yusukeyz@iuj.ac.jp
Short biographical sketch: Yusuke Yamazaki is a graduate student at the Graduate School of International Management at the International University of Japan. He earned his B.A. in Liberal Arts from International Christian University. During the undergraduate studies, he pursued to study psychology.

Chapter #14

DEVELOPMENT OF ENVIRONMENTAL MORAL JUDGMENT WITH SPECIFIC TEACHING ON SUSTAINABLE DEVELOPMENT

Amélie Lesenecal[1] & Annamaria Lammel[2]
[1]Ph.D. student in psychology, psychologist, University Paris 8 Vincennes-Saint-Denis, Paragraphe Laboratory (EA349), France
[2]Professor Emeritus, University Paris 8 Vincennes-Saint-Denis, Paragraphe Laboratory (EA349), France

ABSTRACT
Research on the development of environmental moral judgment in children has been conducted in recent years (Hansla, Gamble, Juliusson, & Gärling, 2008; Persson, Sahlin, & Wallin, 2015). Kahn and colleagues (Kahn & Lourenço, 2002; Kahn & Peter, 2003; Kahn, Saunders, Severson., Myers & Gill, 2008) made an important contribution by identifying three types of environmental moral reasoning: homocentric, biocentric and isomorphic. Our study studies the influence of sustainable development education on the environmental moral reasoning of 1st and 2nd grade students. Our main hypothesis suggests that students exposed to specific education will have a bio-centered moral reasoning in relation to their peers. In this study, 116 participants were divided into two groups: one receiving a specific education on sustainable development (n = 60) and the other without teaching (n = 56). To assess the moral reasoning of children, we designed scenarios incorporating environmental elements. The student's T-tests revealed a predominant tendency to bio-centered reasoning among all participants. Children who did not receive targeted education found it very difficult to formulate moral judgments and reasoned responses to scenarios. These results highlight the crucial role of environmental education in providing additional cognitive tools essential to the development of their reasoning abilities.

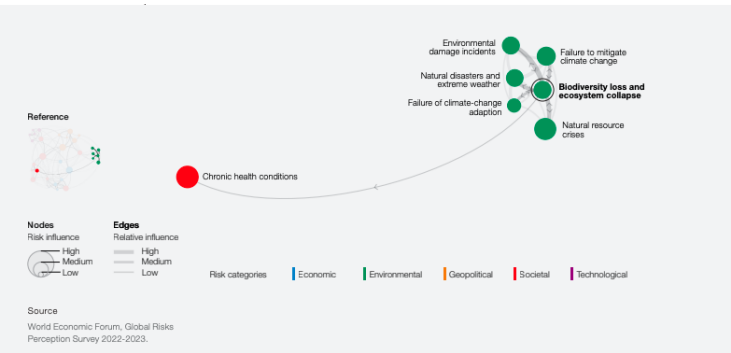
Keywords: elementary school children, sustainable development education, environmental moral development, environmental moral judgment, reasoning.

1. INTRODUCTION

According to the 2023 World Risk Report, environmental risks top the list of threats to human systems, as depicted in Graphic 1. Given the ongoing triple environmental crises involving climate change, biodiversity loss, and contamination, active engagement from all stakeholders has become crucial for steering human systems towards sustainable development. In this transformative process, children can play a pivotal role. The literature underscores the pressing need to incorporate sustainable development education into primary school curricula. This integration is essential to equip the younger generation with the knowledge and skills necessary to adopt environmentally responsible practices, contribute to a sustainable future, and foster a personal sense of moral responsibility.

In several countries, including France, governments have proposed the introduction of environmental education for primary school children. The aim is to enhance their understanding of environmental issues and promote environmentally respectful behavior. It's worth noting that children's environmental moral development is indirectly but significantly connected to this goal, as the installation of moral values during childhood can have lifelong effects.

Graphic 1.
The Most Pressing Environmental Risks, The Global Risk Report 18th Edition, 2023 (https://www3.weforum.org/docs/WEF_Global_Risks_Report_2023.pdf).



1.1. Environmental Moral

Environmental moral is the systematic application of judgment and reasoning in consideration of the right, liberties, justice, equality and respect for the biophysical components of the environment (Kopnina, 2014). Similar to the general moral development, children gradually learn to differentiate between what is morally right and wrong, adapting their behaviors based on their involving moral judgment. The development of environmental moral encompasses all facets of human development, including cognition, emotion, behavior and social interactions. Cognitive aspects are the focus of this study.

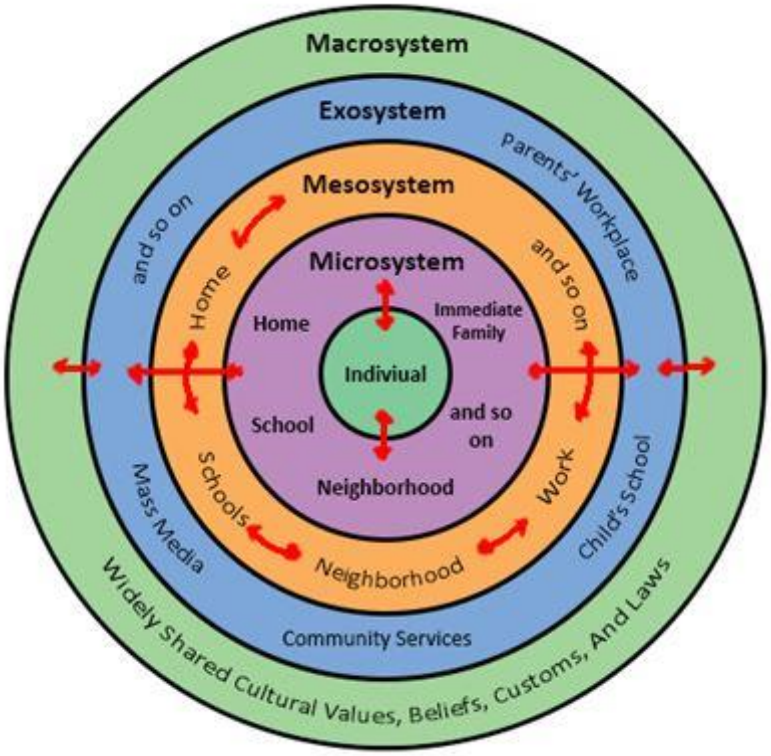
1.2. Ecological System Theory Approach to Environmental Moral Development

Bronfenbrenner's Ecological Systems Theory (1979) provides a robust framework for understanding the educational influences on cognitive development, especially within the context of moral environmental reasoning (refer to Figure 1). In the case of school-aged children, the microsystem, which comprises the home, family, school, and neighborhood, holds particular significance. However, Bronfenbrenner's model highlights the interplay between all systems and how they influence the components of the microsystem. For instance, factors from the exosystem, such as mass media, and broader shared values, norms, or ideologies within the macrosystem, also play a role.

This model has found extensive application in educational literature, as demonstrated by recent studies (e.g., Feriver, Olgan, Teksoz & Barth, 2022; Hayes, O'toole & Halpenny, 2022; Mulisa, 2019). While this study primarily focuses on the influence of school education on the development of moral environmental reasoning, we acknowledge that education for sustainable development is intricately connected to various components of other systems.

Children who have the opportunity to interact with the natural world, often alongside educators, tend to develop behavioral patterns and emotional responses closely linked to their experiences in natural environments. When presented with environmental situations, these children activate their cognitive schemas developed through these experiences. Consequently, educators, particularly teachers, play a pivotal role in promoting environmental education. Recognizing the importance of environmental education, UNESCO has taken proactive measures by establishing a working group dedicated to teacher training. This initiative has resulted in the development of a set of 'good practices' aimed at facilitating the teaching of sustainable development concepts to children. (https://unesdoc.unesco.org/ark:/48223/pf0000217413).

Figure 1.
Representation of Bronfenbrenner's ecosystemic model.
Source of the image: https://cormac404.wordpress.com/2017/05/18/some-thoughts-on-an-ecological-perspective-of-social-media-research/



Several authors agree that education is crucial for sustainable development and that child-centered approaches should be used to develop attitudes and values for sustainability from an early age. In the ecosystemic approach teachers must provide support to children so that they can become creators of their knowledge (Bascopé, Perasso & Reiss, 2019; Campbell, & Speldewinde, 2022; Pahnke, O'donnell & Bascope 2019). Environmental education is viewed as a tool to address environmental issues and link environmental education with children's pro-environmental behavior (Otto & Pensini, 2017).

1.3. Environmental Moral Development

Children exhibit also innate predispositions, such as pro-social behaviors emerging as early as six months of age (Hamlin & Van De Vondervoort , 2018). They demonstrate sensitivity to the socio-moral dimensions of interactions, allowing them to distinguish between positive and negative actions. Environmental issues are often perceived as complex social dilemmas (Kopnina, 2014), involving intricate moral considerations. The inherent value of all living beings underscores the need for ethical regard.

Numerous researchers have embarked on investigations into the developmental trajectory of moral environmental judgment in children (Hansla et al., 2008; Persson et al., 2015). Notably, Kahn and colleagues (Kahn & Friedman, 1995; Kahn & Lourenço, 2002; Kahn & Peter, 2003; Kahn, 2006; Kahn et al., 2008; Kahn, Severson, & Ruckert, 2009) have pioneered the exploration of environmental moral reasoning in children. For them, reasoning underlies judgment, encompassing three distinct types. Firstly, homocentric reasoning posits that humans may exploit the environment for their interests and well-being, both physically and psychologically. Secondly, bio-centric reasoning proposes that the environment holds a moral status, emphasizing a relationship between nature and care. The third type, isomorphic thinking, highlights the moral equivalency between humans and nature, as reflected in the question, 'Why should animals be killed when they possess rights akin to our own?' (Kahn & Friedman, 1995). This demonstrates how children link the rights of animals with those of humans. The importance of recognizing the moral worth of nature is highlighted by Hahn and Garrett (2017), as it establishes an ethical obligation to safeguard the environment. The presence of environmental morality, particularly in the context of assessments of human responsibility for pollution, and biodiversity loss has also been documented in schoolchildren (Gutierrez & Lammel, 2016).

The study's objectives involve examining the influence of education on children's environmental moral development. More precisely, we aim to evaluate how education, positioned within the microsystem of Bronfenbrenner's eco-systemic framework, affects moral environmental reasoning, recognized as "universal" model by Kahn et al. (Kahn & Friedman, 1995; Kahn & Lourenço, 2002; Kahn & Peter, 2003; Kahn, 2006; Kahn et al., 2008; Kahn et al., 2009). To accomplish this, we have chosen two schools within the same urban environment as the research setting. In the first school, students receive dedicated instruction on sustainable development, while in the second school, students do not have access to such specialized education.

2. METHODOLOGY

2.1. Population

In the study, we conducted interviews with a total of 116 child participants. Their ages ranged from 6 years to 8 years (M = 6 years and 6 months, SD = 0.28). The sample was evenly distributed, consisting of 58 girls and 58 boys.

Fifty-six of the children were in the first and second grades and attended schools that did not provide specific instruction on sustainable development. The remaining 60 children, also in the first and second grades, received dedicated teaching on sustainable development. All participants were raised in the Parisian suburbs, which served as the location for our experiments. The socio-economic status of their parents was consistent with the overall socio-economic status of the country.

2.2. Material

To access the children's knowledge and judgments on sustainable development, seven stories were presented to them, including four main topics, such as the destruction of nature, behavior towards animals, pollution, and selective recycling. This was a stimulating and innovative tool for accessing children's knowledge and judgments, and the material was challenging and innovative. Sustainability was never explicitly mentioned in the stories.

2.3. Procedure

Prior to the interviews with children, teachers were asked about the content of their teaching. The experiment was divided into two stages. First, the first researcher read the different stories and then asked the child to judge them. The researcher then conducted a semi-structured interview asking the child to explain his answer. The experiment was carried out individually and the average interview time was 13.5 minutes per child.

2.4. Data Coding

The children's responses were categorized into distinct response groups, employing criteria akin to those defined by Kahn & Lourenço (2002). The categorization process was carried out by impartial judges, demonstrating a high level of agreement (Kappa coefficient: 0.97).

2.5. Results: Teachers Responses

In this study, students under the guidance of an external lecturer for sustainable development and those without a specific teacher participated in different educational activities.

External lecturer: For 1st-grade students, the topics covered included the living world, animal growth, and various ecosystems, meanwhile, 2nd-grade students focused on the living world and life cycles. The classroom organization was divided into two phases: one for theoretical reflection and another in which students actively engaged in maintaining the school vegetable garden and breeding turtles on the school premises.

For students without an external lecturer, the grade-level teacher conducted the lessons. 1st-grade students observed the trees in the school garden, while 2nd-grade students explored some characteristics of animal life cycles.

2.6. Results: Individual Interviews with Children

Four response categories were delineated during the initial phase of the analysis: bio-centric, homocentric, isomorphic, and "I don't know" (see the examples in Table 1, and the percentages in table 2).

In the second phase, we employed statistical analyses of Student's t-tests, to assess the influence of teaching on the choice of reasoning employed. The results of these analyses did not identify any significant differences between the two groups of children. However, the analysis of the "I don't know" response revealed a significant negative difference for the 1st graders $t\ (-1.842)$, $p < .05$, and a significant positive difference for the 2nd graders $t\ (3.053)$, $p < .05$.

Table 1.
Examples of responses.

Reasoning	1st grade without teaching	1st grade with teaching	2nd grade without teaching	2nd grade with teaching
Bio-centric	It destroys nature, plants give us air.	Because it's not right to kill nature.	It's not good because it pollutes the earth and the earth will be sick after.	Because you don't have to destroy the forests to make money. Nature is more important.
Homocentric	Because at least you can see the animals.	Because after people, they have no food.	Because at least there will be more room for people.	That's good, it can be useful.
Isomorphic	Because the fish need to live and have water and to be able to breathe. Then for fishermen it is necessary to keep them to eat them.	So he's not all wet. But if he goes on foot, he could take an umbrella.	I'm saying if it's a car that's not electric, it doesn't do nature any good. It's not good for nature even if for us it's better	Maybe they felt better in their country than in the zoo. Even if people come to see them

Table 2.
Percentages of children's responses.

Reasoning	1st grade, without teaching	1st grade, with teaching	2nd grade, without teaching	2nd grade, with teaching
Bio-centric	36.51	53.92	45.32	54.19
Homocentric	27.51	30.88	31.53	28.08
Isomorphic	10.58	7.83	12.32	14.78
I don't know	25.40	7.37	10.84	2.96

3. DISCUSSION

Results show that the two groups of children essentially used bio-centric, pro-environmental reasoning, confirming the hypothesis of Kahn and his collaborators (Kahn & Lourenço, 2002; Kahn & Peter, 2003; Kahn et al., 2008). The children's responses have a link with liberty, justice, equality and respects.

However, the frequent occurrence of "I don't know" in children without specific teaching, suggests that children who did not receive specific environmental education lacked access to the narrative representation and a fundamental understanding of environmental issues. The results regarding the response 'I don't know' must be taken into consideration, as they indicate the necessity for environmental education to impart the knowledge required for fostering pro-environmental values. Initiating environmental education from a young age is crucial. The development of environmental morality is contingent on the knowledge that specialized education can impart. On the eco-systemic approach of human development (Bronfenbrenner, 1979) schools play a pivotal role in shaping the moral environmental development of children, enabling them to make moral judgments more easily and apply the knowledge they acquire.

Consequently, it becomes increasingly important to comprehend the various dimensions of environmental awareness, as highlighted by Otto and colleague (2017). This underscores that nature is imbued with moral value, and the acquisition of knowledge takes precedence in addressing future environmental challenges (Hahn & Garrett, 2017).

This study's findings indicate that children have an inherent predisposition toward environmental ethics, but education can further reinforce and enhance this inclination.

4. CONCLUSION ANS PERSPECTIVES

This study's findings suggest that children possess an inherent predisposition toward environmental ethics, which can be further reinforced and enhanced through education. Environmental education, whether delivered through traditional or outdoor learning within their developmental microsystem, is of paramount importance.

Between the ages of six and eight, a critical developmental phase emerges, marked by an increased receptivity to knowledge acquisition, enabling the formulation of judgments regarding environmental behaviors and attitudes. In conclusion, educational approaches should prioritize placing the child at the center, recognizing them as citizens with rights.

Emphasizing children's interactions can help cultivate notions of equity and justice, which are essential for the preservation of common goods like water, soil, forests, and biodiversity (Bascope, Perasso, & Reiss, 2019; Campbell & Speldewinde, 2022; Pahnke, 2019; Gutierrez & Lammel, 2016). Teachers play a pivotal role in shaping children's experiences by transmitting knowledge related to the environment. To nurture a biocentric perspective, it is imperative to strengthen environmental education, not only through classroom instruction but also through direct experiences.

Future research in this field should explore cross-cultural perspectives and incorporate longitudinal studies with international collaboration. Additionally, efforts to enhance teacher training in sustainable development can be instrumental in equipping children with scientific knowledge and specific skills from an early age.

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AUTHORS' INFORMATION

Full name: Amélie Lesenecal
Institutional affiliation: University Paris 8-Vincennes-Saint-Denis, Paragraphe Laboratory
Institutional address: 2 rue de la liberté 93526 Saint-Denis cedex
Short biographical sketch: Amélie Lesenecal is a doctoral student in developmental psychology at the University of Paris 8 in the Paragraphe research laboratory. Her thesis focuses on the study of moral judgment applied to the environment (including nature, animals, plants ...). It assesses the moral judgment applied to the environment (nature, plants and animals) through tasks of values, reasoning and empathy, and also makes the connection between mental health and the environment.

Full name: Annamaria Lammel
Institutional affiliation: University Paris 8-Vincennes-Saint-Denis, Paragraphe Laboratory
Institutional address: 2 rue de la liberté 93526 Saint-Denis cedex
Short biographical sketch: Annamaria Lammel is Professor Emeritus of Developmental Psychology at the Université de Paris 8, and Director of Research at the Paragraph Laboratory. Since 2014 she has been the director of the " e-Laboratory Interaction between Climate System and Human System", at UNESCO. She is the lead author of the 5th and 6th Reports of the IPCC WGII 2014, 2022, and nominated author for the next UN GEO-7 (until 2026). Her primary areas of expertise are: cognitive and developmental psychology, cross-cultural cognitive psychology, human adaptive capacity to rapid changes in the environment, environmental moral development, complex systems, cognitive processes, adaptive behavior, and cognitive vulnerability.

Section 3
Social Psychology

Chapter #15

PINK IS FOR GIRLS, BLUE IS FOR BOYS: ATTITUDES TOWARDS MASCULINITY AND EFFEMINACY IN MEN

Andrea Catania, Gottfried Catania, & Mary Anne Lauri
Department of Psychology, University of Malta, Malta

ABSTRACT
The idea that "boys will be boys" has been used an excuse for many behaviours, both by men and towards them. With the recent burst in attempts to bring back "masculine men" and the rise of the hegemonic norms most may wish were left in the 1920s, this study attempted to explore the attitudes towards masculine and effeminate men held by a sample of Maltese participants. Specifically, any associations between one's attitudes and their age, gender, and self-perception of their own gender were sought. The goal of the study was to determine which stereotypes about men are the most believed. Questions from the BSRI-12, the MRNI-SF, and the AFNS were used to construct an anonymous questionnaire. Hypotheses were tested using data obtained from 410 participants aged 18-78. It was found that older age groups endorse traditional attitudes more strongly than younger ones, and use more dated adjectives to describe masculinity. Additionally, men were found to have more traditional views than women. Participants who perceived themselves as having low femininity endorsed traditional attitudes more than those high in femininity. These findings highlight which groups need to be targeted to encourage changes in the way that men are perceived and consequently judged.

Keywords: hegemonic masculinity, effeminacy, attitudes, stereotypes.

1. INTRODUCTION

Rigid gender categories can result in harmful behaviours and misperceptions. These are becoming increasingly problematic in relation to masculinity and the traditional cultural standard of what a man should and shouldn't be. Moreover, effeminate men tend to be shunned because they do not fit the hegemonic ideal. Though literature on the subject is exceedingly diverse, that pertaining to the Maltese context is somewhat limited. As of late, research on masculinity in Malta has either been focused on homosexual men, carried out in relation to the feminist movement and how women are affected by the construct, or is otherwise fairly old and in need of an update given the everchanging nature of our society. Furthermore, research on the violation of gender norms often focuses on female targets. Moreover, the available research tends to focus on violation or adherence to gender stereotypes, rather than attitudes towards them. Hence, this topic is relevant to be studied as it may require more exposure in the Maltese context.

2. BACKGROUND

Both masculinity and femininity can be defined as descriptive gender terms, including characteristic ways of relating, acting, and appearing (Spencer, 2017). These are malleable, depending on the cultural demands of a context or time (Liu, 2017). Masculinity encompasses commonly socialised behaviours such as limiting emotionality and striving to be powerful.

On the other hand, femininity could include being gentle and nurturing. These two constructs are not bound within the limitations of biological sex. They are socially constructed and thus can vary in different societies. Malta has made great strides in civil liberties and laws related to them. However, changing legislation does not always result in changing attitudes.

Sex stereotypes are systemic beliefs about attributes of men and women (Banks, 2012). These are typically applied to a whole group, widely shared, and often support differences between men and women. Moreover, these beliefs are biased and unsubstantiated. Sex stereotypes may be descriptive, pertaining to what men and women *are like* – for example the belief the men are rational rather than emotional. Sex stereotypes may also be prescriptive, delineating how men and women *should behave* (Luksyte, Unsworth, & Avery, 2017). When a behaviour is not in line with the stereotype, it will likely be evaluated negatively (Heilman, 2012).

A prevalent ideology in this area of study is hegemonic masculinity – the notion of what constitutes a 'real man' (Connell, 1987). This concept maintains that men who adhere to the masculine stereotype are to dominate over women and other men. It can often be seen as the ideal form of masculinity, and hence it is what men are often socialised to achieve. Men must avoid anything feminine, never show signs of weakness, gain success and status, and take risks (David & Brannon, 1976). These norms might seem outdated or false today, however hegemonic masculinity is still alive and well even in today's society (Iacoviello, Valsecchi, Berent, Borinca, & Falomir-Pichastor, 2021). Hegemonic ideals are rarely fully exemplified in every man. However, they remain a guiding force and continue to be endorsed as desirable by a large majority (Vernay, 2018).

In addition to this notion there is the anti-femininity mandate, an unwritten rule whereby all feminine tendencies, behaviours, and preferences must be renounced (Bosson & Michniewicz, 2013). Research has been consistent on the idea that following the anti-femininity mandate is a way that men affirm their own masculinity (Falomir-Pichastor, Berent, & Anderson, 2019). Hence, it may follow that men who perceive themselves as highly masculine will tend to reject other men who show overt displays of femininity. The precarious manhood hypothesis is a perfect example of the performative nature of gender. Manhood is seen as a precarious state which can easily be lost at the slightest sign of weakness. Bosson and Michniewicz (2013) argue that men affirm their masculinity by eschewing stereotypically feminine behaviours and roles and display it through public action. Effeminacy – often used in a derogatory manner – may be displayed in men who deviate from traditional male norms, take on roles labelled as feminine, or fail in domains labelled as masculine, such as sports. Traditionally masculine behaviour is often rewarded in modern society, whereas effeminate behaviour in men is often stigmatised (Thepsourinthone, Dune, Liamputtong, & Arora, 2020).

Herreen, Rice, Currier, Schlichthorst, and Zajac (2021) found that as one ages, conformity to masculine norms decreases and gender roles become less rigid. Harris (1995) found that the strongest variable in relation to how masculinity is conceptualised was generational difference. Attention to gender and awareness of gender stereotypes is something which emerges early on in one's lifespan (Dunham, Baron, & Banaji, 2016). These are seen as most salient during adolescence, though research on the subject expanding beyond adulthood is scarce (Herreen et al., 2021). The question remains: have attitudes towards masculinity or femininity in men become less traditional? The answer is difficult to determine, as recent findings are inconsistent (Hentschel, Heilman, & Peus., 2019). Some studies suggest that this is not the case, and that there is a stagnation in the way people have been conceptualising gender presentation in men for the past 30 years (Haines, Deaux, K., & Lofaro, 2016). However, other studies suggest that progress has in fact been made.

For example, Thompson and Levant (2021) found that endorsement of traditional norms differed between age cohorts, with older cohorts emphasising the importance of avoiding femininity, and younger cohorts emphasising gender equality.

Generally, men are judged more negatively by other men when they express their gender in ways which do not conform to the norm (Horn, 2007). Anti-effeminacy bias could be stronger in men than women due to the tendency for men to adhere to traditional norms more rigidly. Gul and Uskul (2021) attempted to test the expression of this bias in men by focusing on the reluctance of men to be friends with effeminate men. Effeminate men were seen as less valued in the group, and men were concerned that their reputation would be damaged by association. Ulrich and Tissier-Desbordes (2018) found this attitude encompasses the avoidance of using feminine brands as they are perceived as threats to their manhood. Vandello, Bosson, Cohen, Burnaford, and Weaver (2008) found that men feel more anxiety about their gender status than women, and this may explain their reasons for endorsing masculine traits and rejecting feminine ones to preserve their manhood. It has also been found that men find it more important to differentiate masculine and feminine characteristics (Borinca, Iacoviello, & Valsecchi, 2020), and that men are more likely to sanction non-traditional men (Iacoviello et al., 2021). Further to this, Glick, Wilkerson, and Cuffe (2015) found that men who identified as masculine had more positive attitudes towards portrayals of both men and women who adhered to traditional gender norms. Such men also had negative attitudes towards effeminate men.

3. METHODS

3.1. Objectives

The aim of this study was to determine the attitudes towards masculine and effeminate men that are held within the Maltese population, as well as whether there is an association between attitudes and the respondent's gender, age, and whether they perceive themselves as more masculine or feminine. The hypotheses below were proposed:

H_1: Attitudes towards masculine and effeminate men vary with age.

H_2: Attitudes towards masculine and effeminate men vary with gender.

H_3: Attitudes towards masculine and effeminate men vary between people who identify as having high or low femininity/masculinity.

The third hypothesis was proposed as it is difficult to find research that uses self-perception of one's own gender as a variable independent from gender i.e., feeling masculine or feminine independent of whether one is biologically a man or a woman.

3.2. Design

A quantitative approach was used, with data being collected through anonymous online questionnaires made up of four sections: (1) demographic data – age and gender; (2) Bem Sex Role Inventory-Short Form (BSRI-12) (Mateo & Fernandez, 1991); (3) Male Role Norms Inventory-Short Form (MRNI-SF) (Levant, Hall, & Rankin, 2013); (4) the Anti-Femininity Norm Subscale (AFNS) (Brannon & Juni, 1984), as well as some questions related to stereotypes towards women. These additional items about women served as distractor items, so that the intent of the test would be more difficult to infer. This would help ensure that participants would not be able to detect that the study was solely about attitudes towards men, as this knowledge could have potentially affected their responses. These items were not scored, as they were not related to the objectives of the study. Finally,

an open-ended question asked participants for words and phrases which they associate with the word 'masculine'.

BSRI-12. This scale was used to assess whether respondents viewed themselves as more masculine or feminine. In turn, the aim was to determine whether viewing oneself as more masculine or feminine affects the way they judge others. Reliability for the BSRI-12 is good, with Cronbach's alpha being .77 for the feminine subscale and .73 for the masculine subscale (Fernández & Coelleo, 2010).

MRNI-SF. This scale was used to assess attitudes towards masculinity. It includes seven hegemonic domains: dominance, negativity towards sexual minorities, self-reliance through mechanical skills, avoidance of femininity, importance of sex, restrictive emotionality, and toughness. It has high reliability, as Cronbach's alpha was found to be .92 for men and .94 for women (Levant et al., 2013). All items except one were kept the same. One of the items was changed from *'the President of the United States should always be a man'* to *'the Prime Minister of Malta should always be a man'*, to be more applicable to the Maltese context.

AFNS. This subscale was used to assess attitudes towards effeminacy. It is a 7-item subscale taken from a 110-item measure developed by Brannon & Juni (1984), called the Brannon Masculinity Scale (BMS). Although the scale is quite old, it was still determined to be a good fit for this study as the scenarios presented are still relevant today.

A seven-point Likert scale was used for all items of all three scales. The BSRI-12 was rated with 1 being 'never applicable' and 7 being 'always applicable'. The MRNI-SF and the AFNS were both rated with 1 being 'strongly disagree' and 7 being 'strongly agree'. The questionnaire was piloted and feedback addressed.

3.3. Sample

The sample consisted of a convenience sample. The volunteers had two criteria for participation – being Maltese and above 18 years of age. The reason for such unspecific criteria was to be more inclusive. Previous studies similar to this one were often carried out with students or samples having a good level of education. The research study was approved the Social Wellbeing Faculty Research Ethics Committee (FREC) of the University of Malta.

3.4. Statistical Analysis

Statistical analysis was carried out using the IBM Statistical Package for the Social Sciences (SPSS-28). Descriptive statistics were used to compile the demographic data for age and gender. The responses of each scale were added together to create new variables. These new variables were used to carry out statistical tests. Cronbach's alpha was computed for each scale to determine whether the instrument had internal consistency (Kiliç, 2016). All scales had a score above .78, thus having good reliability. Inferential statistics were used to determine associations between variables; Analysis of Variances (ANOVAs), Mann-Whitney U tests, independent samples t-tests, and multiple correspondence analysis were used.

4. RESULTS

The original sample consisted of a total of 422 participants. 12 participants were eliminated from the final data set – seven were under 18, one was the only non-binary person, and four had unusable answers (e.g., putting their name in the 'age' field). The final sample had 410 participants (N = 410). The participants were aged between 18 and 78 years, with

the mean age being 36.06 (SD = 15.03). These were split into six age groups for analysis. Table 1 describes the sample of participants and gives their age and gender. There is an overrepresentation of participants between the ages of 18-24 years of age. The sample is also overrepresented in females. Because it is not a representative sample, the findings cannot be generalised to the population.

Table 1.
Demographic and descriptive data.

Gender	n (%)	Age	n (%)
Male	107 (26.3)	18-24	155 (37.8)
Female	303 (73.7)	25-29	29 (7.1)
		30-39	53 (12.9)
		40-49	76 (18.5)
		50-59	66 (16.1)
		60+	31 (7.6)

Independent samples t-tests were carried out to compare the scores on the MRNI-SF and AFNS between genders. T-tests were also carried out to compare groups scoring high and low in masculinity/femininity. Comparisons were made based on scores of the MRNI-SF and BMS.

When measuring attitudes towards masculinity using the MRNI-SF, higher levels of endorsement were reported by male participants (M = 61.78, SD = 20.69) in comparison to female participants (M = 48.01, SD = 15.08). There was a statistically significant difference in mean endorsement score for MRNI-SF between males and females. A separate t-test was carried out for each subscale to tease out whether there were any differences between males and females in their attitudes to each aspect of masculinity. Results are shown in Table 2.

Attitudes towards effeminacy were measures using the Anti-Femininity Norms Subscale (AFNS). Higher levels of negative attitudes towards effeminacy were reported by male participants (M = 18.79, SD = 7.98) in comparison to female participants (M = 15.53, SD = 6.76). There was a statistically significant difference in mean scores between males and females.

Table 2.
T-tests for gender and MRNI-SF/BMS.

Scale	Subscale	Mean and SD		Sig.	C. α.
		Males	Females		
MRNI-SF	Dominance (D)	6.04 (3.51)	4.02 (1.62)	<.001	.79
	Negativity Towards Sexual Minorities (NM)	6.34 (4.03)	5.24 (3.51)	.014	.83
	Self-Reliance Through Mechanical Skills (SR)	14.89 (3.99)	14.66 (4.08)	.615	.72
	Avoidance of Femininity (AF)	7.95 (4.34)	5.69 (3.02)	<.001	.81
	Importance of Sex (IS)	7.14 (4.78)	5.17 (3.02)	<.001	.89
	Restrictive Emotionality (RE)	8.06 (3.46)	5.47 (2.51)	<.001	.68
	Toughness (T)	11.36 (4.40)	7.75 (3.87)	<.001	.71
	Whole scale	61 (20.69)	48.01 (15.08)		.91
BMS	Anti-Femininity Norms Subscale	18.79 (7.98)	15.53 (6.76)	<.001	.81

A t-test was carried out to compare people with high and low masculinity on their endorsement of masculine ideology. Group means show that those having high masculinity (*M* = 52.29, *SD* = 19.53) had slightly higher levels of endorsement than those having low masculinity (*M* = 50.76, *SD* = 15.29) however, the result was not statistically significant.

Participants were also compared on their level of endorsement of anti-effeminacy norms. A t-test was carried out to compare people with high and low masculinity on their attitudes towards effeminacy. There was no difference in attitude scores between high masculinity (*M* = 16.35, *SD* = 7.55) and low masculinity (*M* = 16.42, *SD* = 6.84). This may indicate that the extent to which one identifies as masculine has no effect on their attitudes towards effeminacy.

Another t-test was carried out to compare people with high and low femininity on their endorsement of masculine norms. Higher levels of endorsement were reported by participants having low femininity (*M* = 54.04, *SD* = 18.23) in comparison to participants having high femininity (*M* = 49.04, *SD* = 16.15). There was a statistically significant difference in mean endorsement scores between high and low femininity.

Participants with high and low femininity were compared on their attitudes towards effeminacy. Higher scores were reported by participants having low femininity (*M* = 17.41, *SD* = 7.00) in comparison to participants having high femininity (*M* = 15.54, *SD* = 7.32). This result was statistically significant. This could mean that the extent to which one identifies as feminine can affect their attitudes towards effeminacy. Table 3 shows the means, standard deviations, and significance of these t-tests.

Table 3.
T-tests for BEM-12 subscales and MRNI-SF/BMS.

Scale	BEM-12 Subscale	Mean and SD		Sig.
		Low	High	
MRNI-SF	Masculine Feminine	50.76 (15.29) 54.04 (18.23)	52.29 (19.53) 49.04 (16.15)	.375 .004
BMS	Masculine Feminine	16.42 (6.48) 17.41 (7.00)	16.35 (7.55) 15.54 (7.32)	.910 .009

One-way ANOVAs were conducted to compare endorsement scores of masculine and anti-effeminacy norms between different age groups. Means and standard deviations are shown in Table 4. Endorsement scores were statistically significantly different between age groups, as is shown by the varying means in Table 4. The result indicates that attitudes towards traditional norms and effeminacy vary with age. Groups showing a significant difference following Tukey post-hoc analysis are given in Table 5.

Table 4.
*ANOVA tests for Age*Masculine norms and Age*Anti-effeminacy norms.*

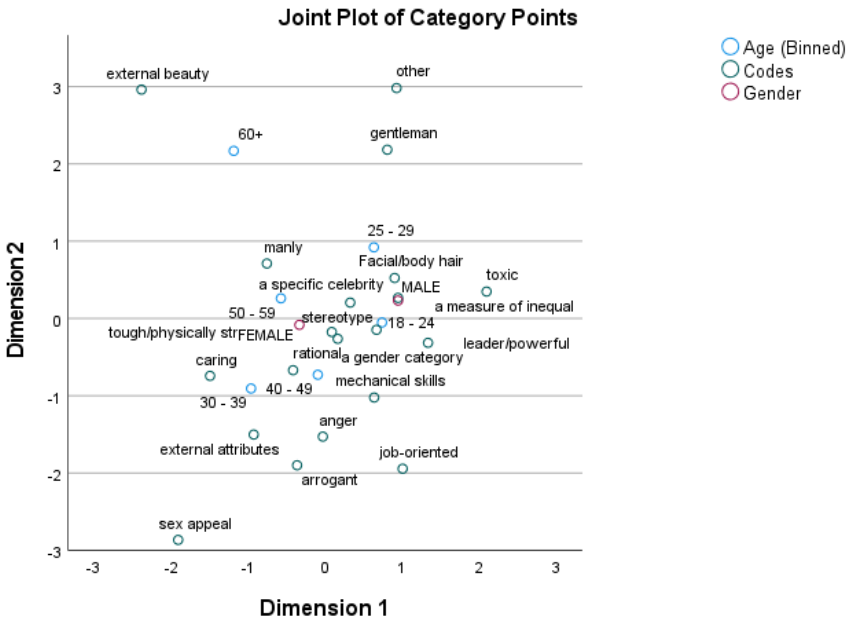
Age group	Masculine norms (MRNI-SF)			Anti-effeminacy norms (AFNS)		
	N	*M*	*SD*	*N*	*M*	*SD*
18-24	155	47.45	15.79	155	14.94	6.68
25-29	29	50.27	14.94	29	14.52	6.31
30-39	53	48.61	16.12	53	15.74	7.05
40-49	76	54.76	18.37	76	17.64	7.79
50-59	66	52.67	14.77	66	17.15	6.63
60+	31	62.45	20.06	31	20.81	7.18

Table 5.
Significantly different groups.

Masculine norms (MRNI-SF)		Anti-effeminacy norms (AFNS)	
Age group	Sig.	Age group	Sig.
18-24*40-49	.02	18-24*60+	<0.001
18-24*60+	<.001	25-29*60+	.007
30-39*60+	.004	30-39*60+	.017

Participants were asked to give adjectives that they associate with the word 'masculine'. Responses were coded according to commonly occurring traits in the literature. A multiple correspondence analysis was carried out to investigate the categorical variables age, gender, and adjectives produced. Two dimensions were extracted. The first dimension explained 47.19% of the variance and second explained 43.63%. As illustrated in Figure 1, points closer together on the plot indicate a relationship. For example, the 60+ category associated masculinity with external beauty and being a gentleman, echoing the norms often upheld by that generation. It is interesting that the term 'masculinity' was associated with both positive traits like caring and negative traits like being toxic. What was perhaps unexpected was that masculinity is still strongly associated with being tough and strong.

Figure 1.
Joint category plots for variables of age, gender, and adjectives (codes).



5. FUTURE RESEARCH DIRECTIONS

This study showed that older cohorts, males, and those identifying as having low femininity endorse traditional norms more. If one were to replicate this study, it would be interesting to introduce variables such as culture, religion, and level of education. Another way to approach it would be to determine whether there are personality factors that can predict the attitudes that one would have towards effeminate and masculine men. This may then lead to interventions that could counteract the hegemonic ideology. This issue may also be explored qualitatively, by holding in-depth interviews with people who hold traditional views. By knowing why an attitude is held, it would be easier to tackle the problem at its root by counteracting these reasons. Another possible strategy would be to carry out a longitudinal study, to determine whether attitudes can change as one ages and what affects this change.

6. DISCUSSION AND CONCLUSION

The aim of this study was to determine the attitudes towards masculine and effeminate men in the Maltese context. The findings obtained had mixed support from the literature presented.

Attitudes and gender. Males in the sample endorsed traditional masculine norms more than females, and the difference is fairly large (M_{males} = 61(20.69), $M_{females}$ = 48.01(15.08), p = <.001). Additionally, almost all dimensions of hegemonic masculinity were endorsed by male participants more than females. The dimension showing the largest difference between genders was that of restrictive emotionality (M_{males} = 8.06(3.46), $M_{females}$ = 5.47(2.51), p = <.001). This may reflect the way society has been constructed. It seems more likely that a man would react negatively to overt displays of emotionality in other men than a woman would, especially since women find it more acceptable to do so. This is corroborated by the literature, as men face the most backlash from other men when they deviate from traditional norms (Iacoviello et al., 2021). Men were also found to endorse anti-effeminacy norms more (M_{males} = 18.79 (7.98), $M_{females}$ = 15.53(6.76), p = <.001) in line with the literature (Gul & Uskul, 2021). This finding makes sense in light of the precarious manhood hypothesis, especially since women do not seem to experience this phenomenon. Hence, while men would feel the need to reject effeminate men because they find their displays threatening to their own manhood, women would have more tolerance for effeminacy in men because they do not feel at risk of losing anything.

Attitudes and age. It was found that age is associated with participants' attitudes towards traditional masculine norms and effeminacy. The most significant difference in both cases was between the youngest and the oldest age groups, with the 60+ group showing the highest levels of endorsement of both masculine and anti-effeminacy norms. These findings reflect some of the literature, where older cohorts emphasised avoiding femininity more than younger cohorts did (Thompson & Levant, 2021). However, they contradict findings in other studies suggesting that gender norms become less rigid with age (Herreen et al., 2021). An interesting aspect of the current results is that there were significant differences between groups which represented a generational difference. This means that there was an age gap of at least 15-20 years between the two different groups. This may reflect that attitudes have become more progressive with time, and that there may be a movement towards diminishing the importance of traditional norms in future generations in the Western world. According to this study, 18-24-year-olds associate masculinity with toxicity. The 60+ category associated masculinity with external beauty and being a gentleman, echoing the norms often upheld by

that generation. Since such attitudes often form early on in life, results may also suggest that people who are older still hold attitudes which were formed decades ago, when gender roles were more stereotypical. Results from the MCA show that the 60+ groups associated being masculine with being a gentleman, whereas the 50-59 group associated it with being tough, manly, and rational.

Attitudes and high/low masculinity/femininity. Testing the hypothesis pertaining to the effect of self-perception of one's own gender yielded some unanticipated results. Participants rated themselves highly in both feminine and masculine domains. This could mean that the tendency to see those adjectives as gendered has decreased with time. It may imply a paradigm shift in the past few years, as it could indicate a movement away from considering adjectives as gendered. This change may have been brought about by recent movements, such as advancements made in the LGBTQ+ community where gender is being seen as more fluid and malleable. Another interesting finding was that there were significant attitudinal differences between participants scoring high and low in femininity (MRNI-SF: M_{high} = 49.04(19.53), M_{low} = 54.04(15.29), p = .004; BMS: M_{high} = 15.54(7.32), M_{low} = 17.41(7.00), p = .009). This could be explained by the possibility that rejection of femininity in others may also stem from rejection of femininity in oneself. If one rejects and suppresses their own feminine traits to remain in line with the hegemonic ideology, for the same reason it is likely that these traits will also be rejected in others. Moreover, certain traits which were once thought to be highly masculine may have become more neutral because of more diverse representation. With more Maltese women being represented in political parties and leading business organisations, the common assumption that being a leader equates to masculinity might be given less weight. Another example would be the rise in feminine Maltese activists, which counteracts the classification of defending one's own beliefs as a masculine trait. Hence, the reason why participants' masculinity levels had no effect might be because the BSRI traits used to classify people as masculine may no longer be presumed to fall into the 'masculine' category. On the other hand, 'feminine' traits may not yet have the same neutrality. Traits such as being sympathetic and gentle have been slower to change, and are exhibited less by prominently masculine people.

Although great care was taken to ensure a valid study, it was not without limitations. The use of a convenience sample decreased generalisability of the results. A non-representative sample could have resulted in skewed results, due to an imbalance in the sample.

Since research in this area in the Maltese context is lacking, this study sheds light on the attitudes held by Maltese participants regarding masculinity and effeminacy in men. This study, in combination with others, may inform policy makers of the target populations – older cohorts and males – for reducing harmful attitudes, such as those pertaining to domestic violence towards men and implementation of paternity leave. If gender categories are socially constructed, then it is possible to re-shape and de-emphasise them through social change.

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AUTHORS' INFORMATION

Full name: Andrea Catania, B.Psy. (Hons) (Melit.)
Institutional affiliation: Department of Psychology, Faculty for Social Wellbeing, University of Malta
Institutional address: Msida MSD 2080, Malta
Email address: andrea.catania.19@um.edu.mt
Short biographical sketch: Andrea Catania is currently an M.Sc. in Psychological Studies student at the University of Malta. She is a budding researcher and has presented at a few international conferences. She is currently part of the Junior Researcher Programme, researching subtle age discrimination in the workplace, and also carries out research with the Faculty for Social Wellbeing. Her research interests include gender inequalities, stereotyping, children's rights, and neurodivergence in children.

Full name: Gottfried Catania, Dr, PhD
Institutional affiliation: Department of Psychology, Faculty for Social Wellbeing, University of Malta
Institutional address: Msida MSD 2080, Malta
Email address: gottfried.catania@um.edu.mt
Short biographical sketch: Dr Gottfried Catania is an Academic and Organisational Psychologist, and currently the Deputy Dean of the Faculty for Social Wellbeing and Head of Department of the Department of Psychology. He is the author of a number of academic journal articles and book chapters, and has presented widely in local and foreign conferences. Dr Catania's research interests include workplace motivation, the influence of technology on workplace practices, and ethical behaviour at work.

Full name: Mary Anne Lauri, Professor, PhD
Institutional affiliation: Department of Psychology, Faculty for Social Wellbeing, University of Malta
Institutional address: Msida MSD 2080, Malta
Email address: mary-anne.lauri@um.edu.mt
Short biographical sketch: Professor Mary Anne Lauri studied Psychology at the University of Malta and at the London School of Economics. She joined the University of Malta in 1992 as a member of the Department of Psychology. Professor Lauri is a professor and researcher in social psychology. Between 2006 and 2016, she was appointed Pro-Rector in charge of Students and Staff Affairs. She has authored several works published in both Maltese and international journals.

Chapter #16

A SUSTAINABLE MODEL TO EVALUATE TRAINING IMPACT IN HEALTHCARE

Sara Cervai & Gabriele Blasutig
Department of Social and Political Sciences, University of Trieste, Italy

ABSTRACT
The aim of this chapter is to introduce a sustainable model to evaluate the impact of training in the healthcare sector. Existing approaches in the literature tend to focus on quantitative methods. However, many of these tools and models are often deemed too complex and time-consuming, leading to their underutilization or improper use.
To address these challenges, the TIE-H model (Training Impact Evaluation - Healthcare Model) offers a sustainable approach to evaluate training impact. The model is designed to be implemented within the organizational processes and standard procedures without external consultants.
The model has been developed through a 4-year Action Research intervention in a large Italian healthcare organization. It was tested on over 350 training courses. One key feature of the model is that the process of evaluating training impact begins during the planning phase. This involves classifying each training based on three impact criteria, setting goals, identifying indicators, and determining the evaluation timeline.
The TIE-H model not only provides a new process for evaluating training impact but has also demonstrated effectiveness by aligning the planning phase with the training objectives. This facilitates the identification of training result expectations and serves as a guiding framework for training planning.

Keywords: training impact, training evaluation, healthcare organization, action research, organizational psychology.

1. INTRODUCTION

The role of training and personnel development in organizations is widely acknowledged as a strategic pillar (Noe, 2010). Training/learning and development is a fundamental aspect covered in leading Human Resource Management handbooks (e.g.; Armstrong, 2006; Boxall, Purcell, & Wright, 2009). In today's context, training and personnel development hold critical value, especially in the healthcare sector.

Typically, healthcare organizations (such as hospitals and public health structures) bear the responsibility for the continuous education of their staff. Consequently, the department managing training courses need to own the necessary expertise in planning and designing training programs. Previously, the focus was on scheduling all training events in the annual plan, to secure suitable venues, find skilled trainers, and ensure high-quality events (Noe, 2010). However, recent developments, including the rise of e-learning courses, on-the-job training, and the transformative impact of the Covid-19 pandemic, have elevated the strategic importance of the training and development department within organizations. Training is increasingly recognized as a managerial tool that stimulates change and fosters organizational development, extending beyond the traditional role of updating and maintaining professional competence (Reis, Faria, & Serra, 2022).

Furthermore, substantial financial resources are allocated to personnel training, constituting a significant portion of the budget. Therefore, as pointed out by Kennedy, Chyung, Winiecki, and Brinkerhoff (2014), it is crucial to know on which level a training intervention has achieved its objectives. This knowledge can only be gathered through effective training evaluation (Jasson & Govender, 2017). Consequently, effective tools are needed to adequately evaluate the impact of training initiatives. An interesting editorial of Industrial and Commercial Training (2004) reports that *"Some 70 per cent of organizations have no formal measurement practices to assess the impact of training employees on the performance of their business*", and the situation does not seem to have changed much during this past decade (e.g. Bingham, 2022).

2. BACKGROUND

The assessment or evaluation of training impact lies in the wider topic of training evaluation and training effectiveness. One of the most cited and criticized model remains the Kirkpatrick model (Kaufman, Keller, & Watkins, 1996) with its theoretical four levels simplified in an implementation of the first two. This model consists in evaluating the training on the basis of reaction, learning, behaviour and results; the author stated they are strictly correlated so that a positive result in the first level brings to a positive result in the second and so on. Although a large number of empirical studies refuted this hypothesis, it happens that for very practical reasons -in saving time and resources- the companies declaring to use this model applying only tools to monitor trainees' satisfaction and the acquisition of competences at the end of the training. It consists in a coarsely simplification that does not permit to assess the impact of a training (Bates, 2004).

Given the substantial costs typically associated with training programs in organizations, there is a significant demand for solutions that can effectively monitor their effectiveness and added value. While the idea of calculating a Return on Investment (ROI) for training has not been entirely abandoned, and some scholars still propose models to evaluate the monetary costs/benefits of training (e.g., Phillips, 1996; Wang, Dou, & Li, 2002), it is a reality that even when these models are applied, the reported levels of evaluation often focus solely on satisfaction indexes (Spitzer, 2005).

Recently, greater attention has been directed towards Social Return on Investment (SROI). Analyzing the SROI of training enables a more comprehensive consideration of the benefits, taking into account the medium to long-term perspective and incorporating a broader stakeholder approach. This approach identifies opportunities for further improvement. However, SROI remains a quantitative approach, requiring a strong emphasis on financial and economic indicators. Each value needs to be approximated in financial terms. Analyzing the impact of training through SROI places significant focus on the financial aspect. Every training program incurs costs, and organizations allocate substantial resources to training. While the cost may appear to be the easier part of the calculation, determining the financial value of the benefits is a more challenging task (Wood & Leighton, 2010).

When estimating the impact of training on an organization, various types of impact results must be considered. Some results are immediately visible, while others are latent or only become evident in the future. The impact may manifest at the individual or group level, and some training initiatives necessitate organizational changes, while others aim to sustain acquired competencies. It is a delicate matter, and there is a risk that forcing an estimation of financial indices solely to demonstrate the value of training could lead to oversimplification and meaningless conclusions (Griffin, 2012).

In scientific literature, several models for training evaluation have been developed with the contribution of different disciplines: work and organizational psychology, adult learning, management, organizational sociology, docimology, business economics. In one of the most recent and complete review elaborated by Perez-Soltero et. al. (2019), in the 35 models under review, the training evaluation has been considered based on aim (formative, summative), actors (learners/stakeholders), timing (short/long time) and tools (questionnaire/ROI).

A specific area dedicated to training impact appears in most of the models, even named with a different label. For example, output is used in the CIRO model (Warr, Bird, & Rackham, 1970) Context, Input, Reaction, Output and in the IPO Model (Bushnell, 1990) Input, Process, Output. Instead, product or performance are included in the CIPP Evaluation models (Madaus, Stufflebeam, & Scriven 1983) Context, Input, Process and Product; and in the motivational influences training effectiveness (Noe, 1986) that includes trainees' change of behaviour in performance. The impact area is present also in: the three-stage model for assessing and improving training (Attia, Honeycutt Jr., & Leach, 2005) with two levels of impact – individual and collective; the Griffin approach (2012); the eQvet-us training outcome evaluation model (Moldovan, 2016) and, naturally, in all the models aimed at calculating ROI (Phillips, 1996, Wang et al., 2002).

Although there are scholars (e.g.; Alvarez, Salas, & Garofano 2004; Testa & Scaratti, 2018) who underline the difference between training evaluation (micro level) and training effectiveness (organizational level), the most of the training evaluation models considers both the dimensions.

Focusing on the healthcare sector, there are evaluation models dedicated to the pre-service training (university, technical schools), and they are mainly useful for a continuous improvement process and for a competence assessment, having the students as the focus of the evaluation. For example, the Outcome Based Evaluation model (OBE), where the training outcome was defined by Davis et al. (2007) as "a culminating demonstration of learning: it is what the student should be able to do at the end of the course" (p. 717). Nevertheless, this approach is not helpful for analyzing the impact of in-service training. One of the few models tailored for healthcare organizations, considering training impact as part of the evaluation process is the Expero4care model developed by Cervai and Polo (2015): the main feature of the model is the comparison between stakeholders' expectations and perceptions, also in term of expected versus perceived impact.

Although there are dozens of researches reporting case studies on the analysis and measures of the impact of training in healthcare (604 papers in EBSCO database, containing the words training and impact in the title, healthcare in the abstract, in September 2023), however none of them - at author's best knowledge – present a theoretical model to guide a healthcare organization in the evaluation of the impact of training, that is the rational of the present chapter.

3. OBJECTIVES

Acknowledging the necessity for healthcare organizations to incorporate training impact monitoring into their standard evaluation processes and the need for scientific literature to elaborate a general model adaptable to different organizations, a four-year Action Research (AR) project was conducted with an Italian healthcare organization. The main objective was to develop and test a new model to evaluate training impact with the intention of making it applicable, sustainable, and robust for the specific organization (Griffin, 2012), while also ensuring its exportability to other healthcare organizations.

4. RESEARCH DESIGN

In the following part, we describe the AR process, starting from a description of the context, the rational for the choice of this approach, the description of the process, the results.

4.1. Context

A local health district in North-Eastern Italy approached the academic unit requesting support in the evaluation of the impact of training provided to the employees. The intervention has been required as a consultancy in organizational psychology to improve the training and development process of the healthcare organization.

The public healthcare organization consists of 2 hospitals, 11 territorial departments 4,128 employees in healthcare professions and around 1000 belonging to administrative staff. In 2019, the budget for training courses amounted to 500Keuro, with 7,420 hrs of training provided.

At the training center there are 10 employees (1 manager, 6 training designers, 3 administrative staff), moreover a wide network of referents, almost one in each department/service, act as the operational arm of the training center in most peripheral services. This network includes physicians, nurses and technical health professionals – around 40 people with a formal role of training referent. They focus on analysing training needs and providing the training center with the features of the training course requested by the facility itself in order to build the yearly training plan (decided upon by the general management and approved at a regional level). Training referents support the training center in tailoring a training course once it has been approved. In short, they link the central administration with each branch, service and department in hospitals and health services.

After a first round of negotiation involving academic researchers and representatives of the training center, it becomes evident that it was crucial to involve the training referents in the process of training impact evaluation. Academic researchers proposed an AR model aimed at generating a sense-making process in building a model to evaluate the impact of trainings in the organization.

4.2. Sample

The project team consisted of three academics, the chief manager of the training center and 32 training referents employed in different services/departments of the healthcare organization (81.25% female; all graduates: 62.5% in nursing, 31.25% in technical and healthcare professions, 6.25% in medicine).

In the 4- year project, hundreds of trainings have been considered for a preliminary classification and a successive validation of the Training Impact Evaluation for Healthcare (TIE-H) model. This preliminary work was necessary to develop and test the model in a sensemaking process where training referents were progressively involved in testing and improving the process. Finally in 2022, on the basis of managerial decision about sustainability and strategical value of the model, a selection of 36 training courses was chosen to monitor the impact, 18 completed the whole cycle during 2022 (from the planning to the evaluation) the remaining in 2023, reaching a great success for the organization.

4.3. The Action Research Method

Among the various approaches on AR deriving from Lewin theory, the authors anchor to the Action Science approach (Argyris & Schön, 1992) with the aim of creating common meanings and in order to generate learning processes in developing a shared model for training impact evaluation. The process is based on reflexivity where participants are asked to describe their past experiences concerning the training impact evaluation, ponder possible added values to be gained from a common model, and the related benefits for both the organization and the participants. Researchers are seen as experts who devote their competences to find a common model that covers both the needs of training referents (simplification of processes, common classification/meanings, etc.) and the requirements of the Organization (to evaluate the training impact). The researchers also considered the Reason and Bradbury's approach (2008) in order to underline the importance of developing knowledge through participation, and to develop awareness of the training impact evaluation. The researchers mainly acted as enablers, supporting contributions from training referents, facilitating the mutual ex-change of experiences of previous attempts to evaluate impact, reporting and summarizing different options and, finally, proposing a common model to be implemented. Indeed, the aim was not only to create a model, but to propose a new process that the healthcare organization could implement (Koch & Kralik, 2006). Given that the involvement of the training referents was crucial for the enactment of the model, the AR approach (Johnson, 2008) has been seen as the appropriate choice to strengthen the meaningfulness of this tool, without burdening the process.

4.4. The Action Research Process

The project lasted 4 years (September 2018 – December 2022) and alternated workgroup (with project team and training referents) and individual activities (carried out by the researchers and by the referents). The step-by-step process is described in Figure 1.

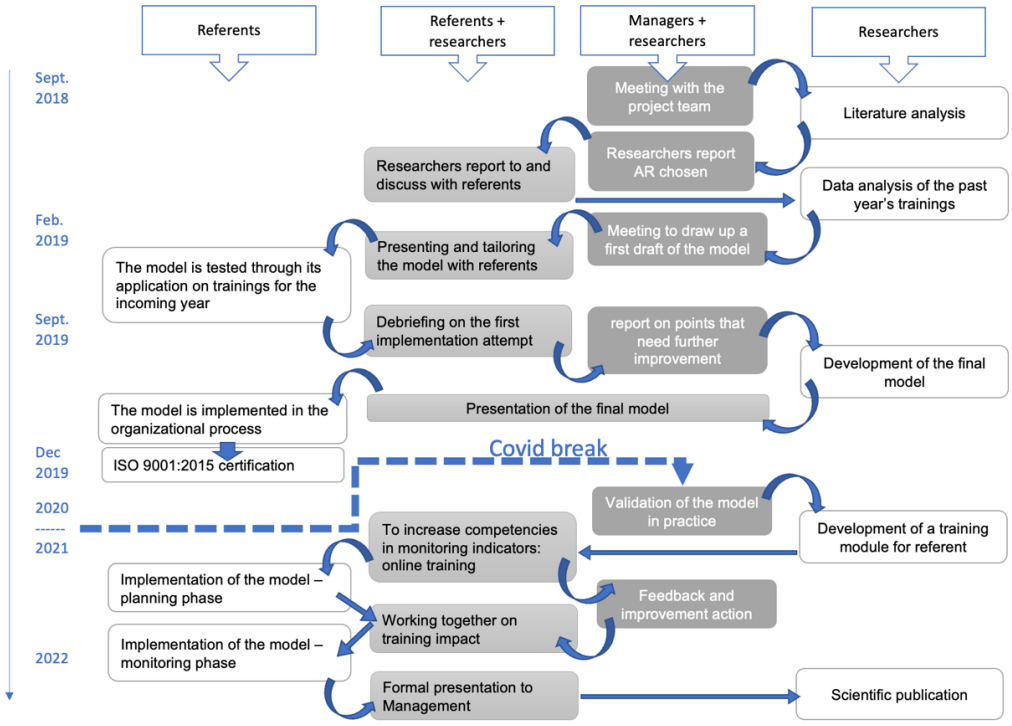
During the first year the whole team agreed to begin from the state of the art, both exploring scientific literature and analysing the large database of training courses provided by the training center of the healthcare organization over the past years. Academic researchers reviewed literature and presented results to organizational team, in order to find the features of a model that can fit the organizational needs. A first theoretical draft of the model was presented at the end of the first year, proposing a classification of different areas and criteria to monitor training impact. Training referents were requested to test the model in the second year to understand its feasibility and to individuate strengths and weakness points.

During the second year, academic researchers analyzed how the training referents applied the model, finding gaps and critical points; this helped to elaborate a new tailored version of the model and to propose a training course to support the referents in individuating indicators to monitor the training impact.

During the third year – because of the Covid-19 – the whole process slowed down, working only with remote meetings: a case study was proposed through an online training to the team of training referents. This case study refers to an innovative training course developed to prepare healthcare employees to work in Covid-19 sectors. The whole group of training referents shared ideas and developed a common method to monitor the training impact of this specific course. The experience was important to define a common method and to exercise on defining indicators and tools to monitor the impact. Whereupon each referent implemented the model on two single trainings and the researchers analyzed the results.

During the fourth and final year of the project, the model in its definitive version was included as standard in the organizational process of the training center. A selection of the monitored training courses was presented to the head managers of the organization during a formal meeting. Academic researchers introduced the model to the Regional Government that is intentioned to adopt it a regional level in the next years.

Figure 1.
The Action Research Project: step and actors involved.



5. THE TRAINING IMPACT EVALUATION FOR HEALTHCARE MODEL (TIE-H) MODEL

The main result of the project consists in the elaboration of a new model to evaluate the impact of a single training. The model, hereby called TIE-H (Training Impact Evaluation for Healthcare), consists of two steps. The first one acts in the planning phase of the training and the second one after a defined period from the end of the training.

5.1. First Phase – Planning

It consists in a reflection about the kind of impact expected from the training course, following the framework presented in Figure 2, which comprises three criteria, each encompassing three or four categories. Recognizing that a training program can have an impact on multiple categories simultaneously, the selection within each criterion should consider the category in which the impact is most prevalent.

Upon pondering on the type of training impact expected, the training referents outline the expected results, specifying the timeframe for monitoring them (referred to as T1), along with the indicators and the assessment tools. Subsequently, it is essential to define the expected results in terms of expected value of the indicators in T1 and, whenever feasible the initial value (referred to as T0).

Figure 2.
TIE-H Model – Criteria to define the training impact.

Area	Value	Innovation
❑ Individual	❑ Effectiveness	❑ Normative
❑ Team	❑ Service Quality	❑ Improvement
❑ Organization	❑ Engagement	❑ Strategic
	❑ Organizational culture	❑ Disruptive
Expected results *(describe using indicators, tools and expected value)*		
Training impact will be monitored on *(insert date)*		

The rationale behind the three criteria is to serve as a compass in defining the impact of training. In the context of healthcare training, there is often a lack of familiarity regarding the meaning of training impact. To facilitate this process of sensemaking, reflecting on each criterion allows for a more precise awareness of the training impact within the specific training context.

In the first criterion, a decision must be made regarding the focus of impact: whether it is on the individual, the team they belong to, or the broader organizational perspective. This classification is already present in literature about adult learning (e.g.; Marsick, 2009). It is important to note that while the individual attends the training and acquires new knowledge and competencies at the individual level, the impact is not limited to the individual alone. When the expected change is at the team level, it implies that the entire team's processes will be influenced by the training (e.g., team building). Similarly, when a training aims to improve a new process, it has an impact on the entire organization (e.g., implementing new norms on data privacy in the internal communication process).

In the second criterion, the reflection is on different types of impact: effectiveness, service quality, stakeholder engagement, and organizational culture. The training may aim to enhance the effectiveness of a specific process (e.g., reducing the duration of a medical treatment by training more physicians to use a specialized medical equipment) or improve the quality of services (e.g., reducing waiting lists). Additionally, there are trainings designed to engage patients or caregivers in the care process, resulting in observed impact in terms of "patient engagement" (e.g.; Graffigna & Barello, 2018). Finally, there are trainings dedicated to share new values within the organization.

In the third criterion, the training referent has to indicate the level of change expected through the training. It is important to recognize that not all training courses are intended to bring about radical innovation. In the healthcare sector, there is a long tradition on updating knowledge in line with new discoveries in scientific literature. However, there are cases where the expected impact can be more or less challenging.

Considering that a significant portion of trainings is planned to meet regulatory requirements (such as safety training), three additional levels have been identified: improvement, strategic and disruptive. When a training is mandatory due to legal or

regulatory obligations, it falls under the normative category. However, in other cases, the three levels can be selected based on the expected level of innovation: high (disruptive), moderate (strategic), or low (improvement).

5.2. Second Phase – Monitoring

The timing for conducting the impact evaluation is established during the first phase, typically 3 to 9 months after the conclusion of the training. The rationale in the choice is to have enough time to see the change in facts; it depends on different factors that each training referent can evaluate to fix the period. The training referent monitors the indicators using the predetermined tools and reports on the findings. The evaluation may reveal one of three scenarios.

In the first scenario (scenario #1), the monitored indicators demonstrate that the expected results have been achieved. This indicates that the training has successfully accomplished its intended impact, allowing for the reporting of results in terms of accountability.

In the second and third scenarios, the expected results have not been attained, as indicated by the indicators deviating from what expected. Consequently, the training referent must examine deeper into the analysis, often adopting qualitative methods, to uncover the underlying causes.

The model proposes two potential scenarios: scenario #2 suggests that the staff requires additional or different training, while scenario #3 suggests that obstacles within the organizational processes hinder the application of acquired competencies.

In scenario #2, a new training process should be planned, taking into account the impact evaluation of the previous training as a needs analysis for the subsequent training event. It may be necessary to address insufficient levels of competencies gained in the first training, train additional stakeholders, or design a different training program to align with organizational needs.

In scenario #3, even though the competencies appear to have been acquired, difficulties arise in their practical application, resulting in the expected results not being observed. This could indicate the need for protocol changes, organizational restructuring, or additional time to evidence the expected changes.

6. LIMIT AND CONCLUSION

By implementing the TIE-H model, the organization is equipped to evaluate the impact of specific trainings; it does not aim to evaluate the whole training process. It does not provide as output a quantitative indicator about how effective the process is. Indeed, it cannot be considered as an alternative of ROI or SROI indicators.

TIE-H model is a tool useful in the improvement process of the training. Indeed, it considers the impact as feedback to analyse if there is a need to acquire more competencies, if there are organizational processes to improve or any different aspects to be redefined in future edition of the training.

The specific trainings chosen for monitoring the impact are those deemed strategic for the organization, taking into account the capacity and resources of the training center. In this regard, the model provides ample flexibility for the management to determine which trainings deserve to be evaluated allocating adequate resources. It is important to underline that the process of evaluation requires specific competences and resources. No algorithm can automatically generate a relevant and meaningful assessment of training impact.

One strength of the model is that it starts from the planning phase: a crucial step that allows the training referent to clearly define the expected results and reflect on the expected changes that the training will bring. This process not only aids in the design of the training itself but also establishes the parameters for post-training monitoring.

A valuable lesson learned from this project is the importance of avoiding a judgmental perspective, which can be inadvertently conveyed through terms such as "evaluation" or "measure." Instead, we opted to use terms such as "monitor" and "assessment" to emphasize capturing changes without passing value judgments. Furthermore, we recognize the challenge in finding suitable measures to assess these changes, and therefore, we introduce the flexibility to utilize both qualitative and quantitative tools for monitoring the impact. It has to be recognized that the choice of good indicators can be considered as the main limit in the evaluation of training impact through TIE-H model. Another difficulty lies in the categorization of the training courses, where the training referents need to be trained and assisted, at least in the beginning.

This AR project has provided high value inside one organization and it indeed represents a limit of this study because it is not possible to sustain that TIE-H model will be suitable and beneficial to other healthcare organizations. Only testing the model in other healthcare organizations could confirm its broad applicability and contribute to further enhancements. And it is necessary that this testing into new organizations requires the involvement of the training referents through a participative approach. We are aware that the AR process has facilitated the acceptance of the new process, and may also constitute a critical factor for further application.

The model has been thought for healthcare sector the choice of indicators, areas and the whole process has been elaborated for this particular sector. and it can contribute to the scientific literature in this field where few other attempts are present. It is evident that foster studies are necessary to validate the model's effectiveness, particularly in diverse healthcare settings and different countries.

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AUTHORS INFORMATION

Full name: Sara Cervai
Institutional affiliation: Department of Social and Political Sciences University of Trieste
Institutional address: P.le Europa, 1 – Trieste, Italy
Short biographical sketch: Associate professor in work and organizational psychology at the Department of Social and Political Sciences of University of Trieste. Her main research fields belong to performance evaluation, training evaluation, organizational wellbeing. She coordinated and participated in several European projects. She is co-editor of the Journal of Workplace Learning.

Full name: Gabriele Blasutig
Institutional affiliation: Department of Social and Political Sciences, University of Trieste
Institutional address: P.le Europa, 1 – Trieste, Italy
Short biographical sketch: Associate professor in sociology of economics and labour at the Department of Social and Political Sciences of University of Trieste. He has been actively involved in academic pursuits, working closely with students and fellow researchers. His research focuses on the impact of technology in organizations aiming to address important challenges and contribute to the advancement of knowledge in his field.

Chapter #17

THE ROLE OF PSYCHOLOGICAL JOB DEMANDS AND SUPERVISOR SUPPORT IN PREDICTING EXHAUSTION
A study among Italian funeral directing during the Covid-19 pandemic

Annalisa Grandi, Marco Rizzo, & Lara Colombo
Department of Psychology, University of Turin, 10124 Turin, Italy

ABSTRACT
During COVID-19, the exponential increase in the mortality made critical the working conditions of funeral directing services (FDS) workers as a greater number of funerals had to be handled. Few studies to date have examined the psychosocial conditions of FDS during the pandemic. The present study aimed to increase the knowledge about this phenomenon in Italy, investigating whether psychological job demands, and supervisor support could predict work-related exhaustion in a sample of Italian FDS workers during the pandemic. The sample consists of 142 FDS workers, 82.4% men, mean age 41.77 years (SD = 20.73), mean seniority 13.14 years (SD = 11.97). The hierarchical regression results showed that psychological job demands were positively related to exhaustion, whereas supervisor support was negatively related to exhaustion. Regarding differences between groups, older workers, women, senior workers, and on-call workers had higher scores on psychological job demands; regarding supervisor support, women reported higher scores; no significant differences were found regarding exhaustion. This study offers new insights into the factors related to the wellbeing of death care workers, one of the professions most concerned with coping with the impact of the COVID-19. It also confirms the importance of supervisor support during difficult times in the workplace.

Keywords: funeral directing, exhaustion, COVID-19, psychosocial risks, JD-R.

1. INTRODUCTION

The recent COVID-19 pandemic has taken a toll on people's psycho-physical health (Brooks et al., 2020; Fabbri, Simione, Martoni, & Mirolli, 2022; Mannarini et al., 2022) and led to negative mental health impacts in various occupational settings (Grandi et al., 2022; Grandi, Sist, Martoni, & Colombo, 2021), particularly in the healthcare sector (Vizheh et al., 2020). Nevertheless, very little attention has been paid to those occupational groups that have had the most to do with the calamitous consequences of the pandemic. Death care workers in fact were involved in front-line – as healthcare and emergency workers – in order to guarantee the disposal of the bodies and the burials, and therefore helping to *rule* the chaos that the staggering number of deaths was engendering. During the recent pandemic, the exponential increase in mortality made the working conditions of these professionals critical, as a greater number of bodies (and funerals) had to be handled. Few studies to date have examined the psychosocial conditions of death care workers during the pandemic (Van Overmeire, Van Keer, Cocquyt, & Bilsen, 2021; Van Overmeire & Bilsen, 2020). The present chapter presents an investigation on this phenomenon in a sample of Italian funeral directing services (FDS) workers during COVID-19.

2. BACKGROUND

Death care work can be very demanding because workers in this field are frequently – if not daily – exposed to the sight of corpses (in varying degrees of decomposition) and the suffering of the bereaved (Cotrim et al., 2020; Grandi, Guidetti, Converso, Bosco, & Colombo, 2021; Guidetti, Grandi, Converso, & Colombo, 2022; Keith, 1997; Roche, Darzins, & Stuckey, 2022). Funeral directing is one of the most important professions in death care, along with crematoria, mortuaries, and cemeteries services. Funeral directing services professionals take care of all the bureaucratic procedures required in the event of death, the organization and management of the funeral ceremony and the transfer and burial of the body. In addition, they deal with bereaved families or relatives almost daily. All of these tasks can involve long hours and emotional stress (Forsyth & Palmer, 2006).

During the pandemic, the work of the FDS underwent several changes. First, stricter hygiene and safety practises were introduced for handling the bodies that were – or could have been – contaminated with the virus. The high number of deaths also made the management and storage of the bodies more difficult. In the funeral ceremony, the number of people present was reduced and new forms of "virtual" participation were introduced to maintain a kind of continuity in relation to the funeral process and thus allow the bereaved to process their grief. Finally, the high number of deaths has led to an exponential increase in workload and increased pressure related to the management of services, as queues in cemeteries and crematoria have increased the time required. All these new working conditions have increased the risk factors for FDS workers.

Psychosocial risk factors are indeed important issues for these workers to examine and address in order to maintain their occupational and psychological wellbeing. Previous studies have shown that working conditions in FDS can have negative effects on psychophysical health, such as anxiety and depression (Cegelka, Wagner-Greene, & Newquist, 2020; Goldenhar, Gershon, Mueller, Karkasian, & Swanson, 2001; Keith, 1997) and can lead to work-related stress (Bailey, 2010; Bartlett & Riches, 2007; Goldenhar et al., 2001; Kroshus, Swarthout, & Tibbetts, 1995) and occupational burnout (Guidetti et al., 2021; Smith, Dorsey, & Mosley, 2009; Tetrick, Slack, Da Silva, & Sinclair, 2000). Some protective factors have also been identified as important job resources that can offset critical work conditions, such as social and organizational support (Cegelka et al., 2020; Guidetti et al., 2021; Tetrick et al., 2000).

2.1. Theoretical Framework

Work has changed profoundly in recent decades, bringing new contractual forms, the massive use of technology and the request for ever greater flexibility. To understand these new work environments, it becomes important to use an adequate perspective to evaluate the different work-related factors. Bakker and Demerouti (2014) have moved in this direction, formulating the job demands-resources (JD-R) theory, a theoretical framework now widely validated and supported by copious evidence in the occupational field. This new approach goes beyond previous models, such as the demand-control model (Karasek, 1979) and the effort-reward imbalance model (Siegrist, 1996) which, according to the authors, considered a limited number of variables that not always showed to be relevant for all jobs. At the base of the JD-R theory is in fact the assumption that every profession is characterized by two main orders of factors: job demands and job resources. The former concern physical, psychological, social or organisational aspects of work involving considerable use of physical and/or psychological energy. The latter, job resources, are physical, psychological, social or organizational aspects of work that are useful in

achieving work goals, stimulate personal growth and learning of the individual and help reduce the negative effect of job demands. According to JD-R, it's important to maintain a balance between the two factors: job demands in fact can increase the risk of disengagement or exhaustion, while job resources have a buffering effect and maintain a good level of commitment and job satisfaction (Bakker & Demerouti, 2014).

Applying the JD-R approach to the funeral directing context, important job demands that characterise the profession are the psychological job demands, i.e. work methods such as fast work, frequent interruptions, little time, which can have an impact on the psychophysical health of the individual at work (Karasek et al., 1998). Among the negative outcomes most common in this occupation is exhaustion, the main component of burnout. It leads to a depletion of personal energies as a result of an imbalance between the demands and the resources available to the worker (Guidetti et al., 2021; Van Overmeire et al., 2021). Finally, among the most important resources is supervisors support, which seems to have a buffering effect in relation to job demands and exhaustion (Guidetti et al., 2021; Tetrick et al., 2000).

According to the theoretical framework of JD-R and the literature findings discussed so far, we will examine two hypotheses in this study:

Hypothesis 1 (H1): psychological job demands are significant and positively associated to exhaustion.

Hypothesis 2 (H2): supervisor support is significant and negatively associated to exhaustion.

3. METHODS

3.1. Participants and Procedure

A cross-sectional design with a self-report questionnaire distributed, via purposive sampling, to FDS employees in northern Italy (the area most affected since the beginning of the pandemic) was used to collect data. The sample is made up of small and medium-sized funeral directing agencies of the provincial capital and some neighbouring municipalities. Participation was voluntary, participants received no reward, and data protection was ensured in accordance with current EU Regulation (2016/679). The study was approved by the Bioethics Committee of the University of Turin (protocol code no. 0598340). In order to participate in the study, the employees had to read and sign the consent form. The researcher attended the meetings and presented the research project and the objectives of the survey in order to clarify any doubts the participants might have. The sample consists of 142 FDS workers, 82.4% men, mean age 41.77 years (SD = 20.73), mean length of service 13.14 years (SD = 11.97). Regarding marital status, 45.1% were married or cohabiting with a partner and 53.5% reported having children. Among the sample, 74.6% reported having daily contact with bereaved, 64.1% were exposed to the sight of corpses and 36.6% manipulated corpses on a daily basis.

3.2. Measures

The questionnaire contained validated measurement scales that are consistent and reliable according to the literature. It also contained a brief sociodemographic section.

Psychological job demands were measured with eight item from The Job Content Questionnaire—JCQ (Karasek et al., 1998) on a four-point Likert scale (0 = never, 3 = always); a sample item is "My job requires working very fast". Cronbach's alpha in this study was .83.

Supervisor support was considered as a job resource and measured with four items from the Social Support from Supervisor Scale (Caplan, Cobb, French Jr, Van Harrison, & Pinneau Jr, 1975) on a four-point Likert scale (0 = never, 3 = always); a sample item is "How much your supervisor can be relied on when things get though at work?". Cronbach's alpha in this study was .86.

Exhaustion was considered as outcome and measured with five items from the Maslach Burnout Inventory—General Survey (Schaufeli, Leiter, Maslach, & Jackson,, 1996) on a seven-point Likert scale (0 = never, 6 = every day); a sample item is: "I feel burned out from my work". Cronbach's alpha in this study was .89.

3.3. Data Analysis

Descriptive statistical analyses (means and standard deviations of the scales, see Table 1) were performed using IBM SPSS 27. Cronbach's α was calculated to assess the reliability of each scale. Pearson correlations between all variables were calculated. Hierarchical linear regression analysis was also conducted to investigate the role of psychological job demands and supervisor support as predictors of exhaustion. In the regression model, multicollinearity between variables was assessed using the variance inflation factor (VIF): no multicollinearity problem was found (VIF < 5). Analysis of variance (t-tests for independent samples and ANOVA) was used to analyze the differences between groups in the means of the variables.

4. RESULTS

As for differences between groups, psychological job demands were slightly below the average scale score ($M = 1.38$, $SD = .31$), with higher scores for women ($M = 13.44$, $SD = 4.97$), $t(33.73) = 2.69$, $p < .001$, Cohen's $D = .62$, older workers, $F(2, 139) = 4.07$, $p = .02$ ($M = 12.15$, $SD = 4.56$), on-call workers ($M = 11.82$, $SD = 4.73$), $t(128.27) = 2.49$, $p = .01$, Cohen's $D = .43$, and workers with higher job tenure, $F(2, 135) = 11.55$, $p < .001$ ($M = 13.46$, $SD = 4.25$).

Self-reported supervisor support was above the average scale score ($M = 1.97$, $SD = .15$), with higher scores for women ($M = 10.33$, $SD = 2.50$), $t(20.82) = 3.96$, $p < .001$, Cohen's $D = .93$.

Self-reported feelings of exhaustion were below the average scale score ($M = 1.99$, $SD = .53$); no significant differences were found.

Correlations were calculated between exhaustion, psychological job demands and supervisor support. All significant correlations were in the expected direction. Pearson coefficients are shown in Table 1. Exhaustion had strong positive correlation with psychological job demands ($p < .01$) and strong negative correlation with supervisor support ($p < .01$).

Table 1.
Correlations between the variables (N = 142).

Variables	M (SD)	1	2	3
1. Exhaustion	9.94 (7.85)	—	—	—
2. Psychological job demands	11.04 (4.85)	.36**	—	—
3. Supervisor support	7.86 (3.16)	- .33**	- .05	—

Note. * p < .05; ** p < .01

Hierarchical linear regression analyses (see Table 2) were conducted to investigate whether psychological job demands, and supervisor support could predict exhaustion at work. Exhaustion was considered the dependent variable; gender and job tenure were included in the model as control variables.

Gender and job tenure were introduced as control variables in Step 1, and no significant effects were found on exhaustion. In Step 2 psychological job demands was introduced and was found significantly and positively associated with exhaustion; the variable added to the model was good predictor of the dependent variable since there was a significant change in R^2 coefficient (13% explained variance). Finally, in Step 3 supervisor support was introduced. Among the variables, both psychological job demands (β = .58, p < .001) and supervisor support (β = -.75, p < .001) were – respectively – significantly positively and negatively associated with exhaustion. The further change in R^2 coefficient (8% explained variance) showed that the new variables were also good predictors of exhaustion. The F value showed a significant R^2 change associated with Step 2 and Step 3.

Table 2.
Hierarchical multiple regression (exhaustion = dependent variable).

1ST STEP (CONTROL VARIABLES)	***β***	**t**	***p***
Gender (1 = women)	- .03	- .31	.76
Job tenure	.15	1.65	.10
R^2=.03			
2ND STEP (DEMAND)			
Gender (1 = women)	- .11	- 1.25	.21
Job tenure	- .02	- .23	.81
Psychological job demands	**.40**	**4.07**	**< .001**
R^2=.13			
3RD STEP (RESOURCE)			
Gender (1 = women)	- .00	- .05	.96
Job tenure	.03	.35	.73
Psychological job demands	**.34**	**3.55**	**< .001**
Supervisor support	**- .30**	**- 3.35**	**.001**
R^2=.08			

5. DISCUSSION

The aim of the present study was to better understand the role of psychological job demands and supervisor support in the relationship with work-related exhaustion in a sample of Italian FDS during the COVID-19 pandemic. Given the lack of studies in the literature, the results contribute to new knowledge about this occupational field.

The first hypothesis of the study (H1) stated that there was a significant and positive relationship between psychological job demands and exhaustion. As we have seen, H1 was confirmed by the regression analysis, and this result is consistent with previous research on death care (Colombo, Emanuel, & Zito, 2019; Cotrim et al., 2020); as for the specific occupational group, this result is particularly interesting because FDS during the pandemic COVID-19 have not been previously studied in terms of psychological job demands, but only emotional job demands in relation to the occurrence of burnout (Van Overmeire et al., 2021). The second hypothesis of the study (H2) stated a significant and negative relationship between supervisor support and exhaustion and was also confirmed by the analyses. While the role of social and peer support has been examined in death care studies (Cegelka et al., 2020; Guidetti et al., 2021; Tetrick et al., 2000), supervisor support has been neglected with the exception of a recent study by Guidetti et al. (2021). Our findings confirm the role of this job resource as an important psychosocial factor that can help offset the negative effects of death care work and maintain workers' psychological and occupational wellbeing.

FDS workers fall into the categories of work considered essential to society, which is why they are always on duty even in times of crisis. The recent pandemic has highlighted the importance of their work, while at the same time tightening their working conditions, increasing the risk factors for their occupational health. Although the FDS have been working in the frontline, there have been few studies on this sector, unlike other categories of essential workers. The findings of the present study go towards filling the gap in the literature relating to this particular occupation, but much more research needs to be done.

6. CONCLUSION

This study offers new insights into the factors contributing to the wellbeing of funeral directing services workers, who are among the professions most struggling with the effects of the COVID-19 pandemic. It also confirms the importance of supervisor support during difficult times in the workplace. Nevertheless, some limitations must be pointed out, namely a small sample size and a cross-sectional design that does not allow for causal inferences. Differences with other occupational groups in the funeral sector (e.g. crematoria, mortuaries, cemeteries workers) as well as specific organisational factors related to death care would also be interesting to investigate in future studies. In order to learn more about the effects of psychosocial risks on this profession, it would also be useful to use qualitative approaches such as ethnographic studies.

Psychosocial risks are an important and topical issue for workers in the death care. Factors related to the characteristics of the work, such as the constant on-call, the workload, the levels of autonomy and control, the degree of organisational support, together with the overexposure to death and the suffering of the bereaved are possible precursors for the reduction of the quality of life of these professionals (Goldenhar et al., 2001; Turner & Caswell, 2020). Constant and careful monitoring of these antecedents is necessary to avoid consequences that may affect workers' psychophysical health, such as depression, anxiety, secondary traumatic stress, compassion fatigue and burnout, as well as their work

performance, such as reduced work ability and increased turnover intention (Colombo et al., 2019; Cotrim et al., 2020; Grandi, Rizzo, & Colombo, 2023; Guidetti et al., 2022; Linley & Joseph, 2005).

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AUTHORS' INFORMATION

Full name: Annalisa Grandi
Institutional affiliation: Department of Psychology, University of Turin
Institutional address: Via Verdi, 10 – 10124 Turin, Italy; annalisa.grandi@unito.it
Short biographical sketch: expert in Work & Organizational Psychology and Gestalt therapist. Her main research interests are related to work-related stress and organizational well-being, the identification of psychosocial risks and protective factors in workers who face death and suffering on a daily basis, the use of humor in the workplace, and professional self-care.

Full name: Marco Rizzo
Institutional affiliation: Department of Psychology, University of Turin
Institutional address: Via Verdi, 10 – 10124 Turin, Italy; marco.rizzo@unito.it
Short biographical sketch: is a post-doctoral research fellow in the Department of Psychology at the University of Turin, Italy. His interests range over social, community psychology and validation of psychological tests. His main works are acculturation of second-generation immigrants, Islamic religion, existential flexibility, prejudice, and sense of community.

Full name: Lara Colombo
Institutional affiliation: Department of Psychology, University of Turin
Institutional address: Via Verdi, 10 – 10124 Turin, Italy; lara.colombo@unito.it
Short biographical sketch: is a full Professor in Work and Organizational Psychology. Her main interests lie on well-being and quality of life in organisations and work-related stress assessment. Specific interests are about new and emerging risks and their impact on the quality of working life in the funeral and mortuary sectors.

Chapter #18

KIDSTIME AND MINDFUL SCHOOLS: SOCIAL INTERVENTIONS FOR CHILDREN AND ADOLESCENTS FROM FAMILIES AFFECTED BY PARENTAL MENTAL PROBLEMS

Henner Spierling[1] & Miguel Cárdenas[2]
[1]Agaplesion, Diakonieklinikum, Psychologist (Rotenburg), Germany
[2]Fundación Orienta, Psychiatrist (Barcelona), Spain

ABSTRACT
About one in five children lives with a parent with a mental illness. These children usually face many obstacles like stigma, social isolation and feelings of guilt. Many of them take a role as a young carer, thus taking over more responsibilities within and outside the family than they can really bear.
The workshop will introduce children of parents with mental illness (COPMI) as a group and explain the impact of parental mental illness on children. We will provide examples of approaches that can help children in this situation, using the Kidstime Workshop model as a case study. We will describe the approaches of the Kidstime practice model and explain how a combination of family therapy and systemic therapy influences, together with drama, can create an effective multi-family therapy intervention.
It will describe the impact of the Kidstime model and highlight the evidence in support of preventive approaches, as well as the barriers to securing investment for these interventions. The workshop also shows a concept of how to better address mental health in school context. In this way it supplies a generic approach to raise resilience within a whole school project. The workshop will conclude with recommendations for practice.

Keywords: parental mental illness, resilience, stigma.

1. INTRODUCTION

Dr. Miguel Cardenas and Henner Spierling present the Kidstime model: a multifamily-based social intervention with lots of creative elements for building children and families' resilience. Kidstime has been put into practice for several years in Spain and Germany, so there are multiple experiences and case studies to share – also, there is some evaluation data that may be presented.

Moreover, Mindful Schools is a whole school approach, funded by the EU as an ERASMUS+ project that empowers schools to address the topic of mental health within school contexts and to create a school atmosphere that strengthens resilience amongst students, their families and school staff.

Having a parent with a mental disorder increases the risk of social and behavioural problems in childhood and mental health problems in adolescence. In Australia, approximately twenty percent of children grow up in a home where at least one parent is diagnosed with a mental health problem (Maybery, Reupert, Patrick, Goodyear, & Crase, 2005), while in England this figure is estimated to be around two million (Parrott, Jacobs, & Roberts, 2008). In Spain, although we do not know the number of children living with parents with mental disorders, by population, the figure would probably be slightly lower than that of England.

2. SUMMARY OF KEY FACTS AND STATISTICS

• Over 3,8 million children in Germany live with a parent with a mental health problem

• Average of 4-8 children in an average classroom will be in this situation.

• 20–25% of the school population, similar figures in other EU-countries

• 70% likely to develop a mental health condition.

• Parental mental illness is one of the 10 adverse childhood experiences (ACEs), which has a lifetime impact on both physical and mental health.

• Parental mental illness (PMI) is a root cause of many other ACEs.

• WHO identifies PMI as one of the most important public health issues of our generation.

• Intervention late after the onset of an ACE is less likely to be effective.

• By focusing on clinically diagnosable mental illnesses, interventions are often too late to address ACEs.

• Many of the young carers (80%) are not identified, while rising thresholds for acute support are exacerbated by significant reductions in early intervention spending by local authorities.

Research into adverse childhood experiences, known as ACEs, identifies parental mental illness as one of the ten most powerful sources of toxic stress in young people. The presence of mental illness in a parent is known to negatively affect a child's cognitive and language development, educational achievement and social, emotional and behavioural development. It can lead to anxiety and guilt coming from a sense of personal responsibility. Where there is severe mental illness in a parent and no second parent who is well it can lead to neglect or abuse. These children are also at greater risk of bullying, a lower standard of living and financial hardship.

Data on the impact of the parents´ disease on their children are scarce and the usual intervention models usually lack prevention programs for this type of family. Often these boys and girls present stress associated with the fact of assume the role of caregiver of the father or mother with a mental disorder, especially in single-parent families. People with a mental disorder are one of the most stigmatized groups in our society, especially those with schizophrenia. These families often do not ask for help out of fear, guilt, or stigma about mental illness.

In Spain, Mental Health Services tend to provide separate follow-up to families between adult mental health services and the child and youth mental health network. There are almost no known experiences on similar multifamily group interventions in this type of families. Most important is the integrated and coordinated manner of working and building connections between the child and youth mental health network with the adult network.

3. RISK FACTORS AND VULNERABILITY TO MENTAL DISORDERS

The fact that having a father or mother with a mental disorder increases the risk in children of presenting problems in childhood (higher incidence of perinatal complications), developing social and behavioural problems, mental health and behavioural problems has been widely studied. suicidal or criminal in adolescence. Additionally, minors often present stress associated with the tasks of taking care of the father or mother with a mental disorder and the change of role, role reversal, especially in single-parent families with severe mental

illness (Huntsman, 2008). These children and adolescents often do not seek help out of fear, guilt, and stigma about mental illness.

There are comparative studies on severe mental disorders that have shown a greater risk of mental decompensation in minors who have a father or a mother with schizophrenia in relation to controls, being more frequent to suffer a pathology of the schizophrenia spectrum during adolescence or the beginning of adulthood (Niemi, Suvisaari, Tuulio-Henriksson, & Lönnqvist, 2003).

The children of fathers or mothers with borderline personality disorder associated with substance use are highly represented in child protection services and have problems in child development (Newman & Stevenson, 2005).

Among children and adolescents of parents with bipolar disorder, there is a higher percentage of behavioural problems, such as aggression, rule breaking, and attention problems (Dienes, Chang, Blasey, Adleman, & Steiner, 2002; Giles, DelBello, Stanford, & Strakowski, 2007).

The sons and daughters of adults with major depressive disorder have more problems in academic functioning, as well as in relationships with peers and with the family, and it seems that altered parental functions play an important role in this problem. Thus, in women with a major depressive disorder who present symptomatic and functional improvement at three and six months after the start of treatment, there is also a reduction in symptoms and an improvement in psychosocial functioning in their sons and daughters (Pilowsky et al., 2008; Swartz et al., 2008).

Greater knowledge of the mental illness on the part of the patient and the family decreases the risk of distress in the minor, while a serious mental disorder with greater severity of the illness and a greater number of decompensations increases the risk (Huntsman, 2008).

The family psychosocial factors that increase the vulnerability of minors are (Maybery et al., 2005; Huntsman, 2008; Logan, Moore, Manlove, Mincieli, & Cottingham, 2007):

- social isolation,
- child abuse,
- mental disorder in both parents,
- living in a single-parent family with mental disorder,
- disadvantaged socioeconomic level,
- young parents,
- substance abuse in the family,
- high family destabilization (bad relationship in the couple)

On the other hand, family psychosocial factors of good prognosis are

- having a mother with good mental health —that is, that the mental illness is in the father—, contact with health services,
- good maternal habits,
- social support,
- a good relationship between the couple,
- positive attitudes towards pregnancy,
- a high socioeconomic status,
- an older age in the infants
- the late onset of the disease

People with a mental disorder constitute one of the most stigmatized groups in our society, especially those who suffer from schizophrenia. Within the family, prejudices towards the disease are also present, in the form of behaviours of shame, secrecy and a feeling of guilt towards the cause of the disorder, causing isolation (Ochoa, Martínez, & Ribas, 2011; Logan et al., 2007).

3.1. Protective Factors

Contact with other people who have a mental disorder, and sharing experiences, facilitates changes in stereotypes (Cooklin, 2010). Some authors suggest that contact and familiarity between the general population and people with serious mental health problems may be the most important factor in reducing stigma. Therefore, carrying out a group intervention with sons and daughters together with fathers and mothers in which mental disorders are discussed openly is a good strategy to combat the stigma of the disease.

Another important concept to take into account in interventions in the population with mental illness is resilience, understood as a dynamic process of an evolutionary nature that allows minimizing or overcoming the harmful effects of adversity and, above all, feeling reinforced, transformed, given meaning to these experiences. In studies of boys and girls who suffer situations of family and social risk such as economic deprivation, abuse, and/or the presence of psychopathology in their parents, common aspects have been detected in those who, despite adverse conditions, have come to have successful personal development. These aspects have been grouped under the name of resilience and among them it is worth highlighting those related to the family, such as belonging to a high socioeconomic level, maintaining the conjugal union, having both parents alive, parental competence and a warm relationship with at least one primary caretaker.

Regarding the personal characteristics of the boy or girl, some of the resilient aspects consist of having an easy temperament, a high intellectual coefficient, the ability to plan and have problem-solving skills. Resilience is also strengthened by better coping styles, motivation to achieve, feelings of self-efficacy, autonomy and internal locus of control, empathic capacity, adequate management of interpersonal relationships and have a good sense of humour. Some resilient social and educational aspects are having access to a good support network, good schooling and belonging to social and religious groups (Fonagy. Steele, Steele, Higgitt, & Target, 1994; Kotliarenco, Cáceres, & Fontecilla, 1997).

3.2. Intervention Model

The use of a multi-family approach is now recognized as an effective intervention for the prevention of relapses in severe mental disorder and in schizophrenia in particular. It provides a new social context for the family and therefore offers new and positive ways in which family members will think about and respond to the person with the mental health problem. It also allows addressing social isolation and stigma. Mental Health services tend to follow these families separately.

We are aware of systemic interventions with single-family groups, although there are no clear data on multifamily group interventions, which would constitute a valuable opportunity to carry out preventive-type community interventions. Consequently, in the absence of timely preventive interventions, these boys and girls usually begin contact with Mental Health services only when changes in behaviour or school performance or other major problems appear (Cooklin & Barnes, 2004).

Ackerson (2003) published that the existing programs on parenting for the general public, aimed at people who have just had a child, are considered irrelevant and unnecessary for people with mental illness, in addition to having a high percentage of abandonment in this group. Maybery et al. (2005) has conducted focus groups with children and girls with a father or mother with mental illness. These children were asked what types of unmet needs they had. They identified the need to have more information about their family member's mental illness, to be able to be consulted and informed by the health professionals who care for their family member, to have a friend with whom they can talk and help on practical issues, for example, what to do when the relative is hospitalized (Maybery et al., 2005).

In 2013, the WHO launched the General Mental Health Plan 2013-2020, whose action plan focuses on four main objectives: strengthening leadership and effective management of Mental Health, provision of comprehensive Mental Health care services, and social services. Integrated and community-based, implement strategies for promotion and prevention in Mental Health and strengthen information, evidence and research systems.

To guarantee a global response in Mental Health, the plan introduces the notion of recovery, moving from the usual medical model to emphasize the generation of economic resources and opportunities for improvement in education, housing, access to social services and other social determinants of Mental Health (Saxena, Funk, & Chisholm, 2013). The plan stresses the importance of the protection and promotion of human rights and includes a leading role for the provision of community-based services and support. In this way, community Mental Health programs play an important role for preventive purposes.

In this manner, with the purpose of strengthening research, prevention and promoting the creation of programs that help improve community Mental Health and care for people with mental disorders, projects such as Kidstime workshops, which consist of the design of a support and information group for fathers and mothers with mental disorders and for their sons and daughters. These workshops were developed in England in 1999 by Alan Cooklin, a family psychiatrist and his colleagues, in order to help families whose parents have mental health problems. This program is a by now widespread example of the community-type intervention models. The program of Kidstime multifamily intervention, tries to develop and promote resilient attitudes in the whole family, especially in the sons and daughters of fathers and mothers who suffer from a serious mental disorder, with the aim of preventing possible disorders among the child population of this risk group.

This program is an example of the community-type intervention models that have been developed in this area. Kidstime seeks to detect and minimize the impact of the role change that often occurs in these children, such as parental behaviours or the role of caregivers (Spierling, 2020). With this workshop, we want to reduce the anxiety of the impact of the mental disorder, reduce the stigma towards it, and differentiate the role of the sick patient (in crisis) and that of the healthy father or mother (without crisis). It also makes it possible to prevent and identify behavioural or emotional difficulties that the children of these parents may have or possible situations of abuse, while helping to maintain a link between the parents and the Mental Health Services (Cooklin, 2010; Saxena et al., 2013; Cooklin, Bishop, Francis, Fagin, & Asen, 2012). In this way, we work with the family unit in a group format in an integrated and coordinated manner with professionals in Child and Youth Mental Health, as well as professionals from the adult sector in order to assess the global needs and deficiencies of the family.

4. OBJECTIVES

The main objectives in the Kidstime workshops focus on:

-Help parents suffering from mental illness to find means through the which the disorder and its

impact can be discussed between them and their children

-Help parents access or redirect their pride, confidence, and competence as parents

-Address fears, confusion, and lack of knowledge about the mental disorder and its treatments

-Help children and youth increase their understanding of information about their parents' mental disorder and parental behaviour associated with disease

-That children may experience a more positive response from their parents

These objectives add up to the positive effects of multifamily work in general and especially target the needs of children with mentally ill parents and their families (Behme-Matthiessen & Pletsch, 2020; Asen & Scholz, 2017).

5. METHODS

All methods involved in kidstime aim to encourage children and young people together with their parents to feel freer and to get involved in pleasant activities and to be able to share time together and to connect in a new way.

Especially by the use of drama methods, resilient attitudes are developed and fostered in the whole family and especially in the children of parents with mental disorders. Theatre plays – all led by the children – help the children to find their voice and to free emotions. It also helps to build metaphors and child-friendly explanations on mental illness, which in terms builds resilience. This is also helps to prevent possible disorders in the future.

The structure of the Kidstime workshops includes monthly workshops, which take place in the community, in non-sanitary facilities (such as a social centre, library), with two-hour sessions. These sessions are structured in three parts: a first multifamily part; in the second part, the groups are separated, a seminar is held with the parents and a psychodrama activity with the minors, which is usually recorded on video. In the third part, a closing multi-family group is held aimed at sharing what has been worked on in the separate groups and the video is viewed while a snack is offered. The referral of participating members to the workshops is carried out from the Adult Mental Health Centres, the Child-Youth Mental Health Centres, or from the social services and schools.

The experience provides a transitional space for families and professionals where the professional plays a different role than the therapist. An atmosphere of trust and equality is created and, through psychodrama techniques, using art as a resource, a space is fostered to talk about mental health problems and their impact on family life, emphasizing the impact on minors, to the vicissitudes of families and to find new ways to deal with the problems associated with parental mental disorder. It is a space where parental mental health problems and the needs of children and adolescents are clearly discussed, always keeping in mind the safeguarding of the well-being of minors. The use of play and psychodrama to communicate and teach children to address the issue of mental health, allows them to find a place to meet friends, play games, make movies, eat pizza and understand what is happening to their parents.

6. DISCUSSION

Through the experience, fathers and mothers seem to feel relieved after being able to speak in the group and later explain mental health problems to their sons and daughters. In families, bonds are strengthened by understanding these problems. In forming and finding a safe space and dealing with stigma, at some point, parents use a sense of humour when talking about their mental health issues, putting some distance from them, and expressing that they are ready to talk about it in community. In turn, the workshops allow professionals to work from a different perspective than usual, closer to the families, working together and thus acquiring a better understanding of the situation in each family

The Kidstime workshops are a multifamily group event on a monthly basis, whereas we try to avoid calling Kidstime a treatment or therapy, although it shows therapeutic results. This is particularly because we want to give the message to the children that they are invited to a positive experience (like a party!) rather than to correct something in themselves. This in turn is partly to address the fear of many of these children that they will automatically follow the mental health pathway of their parents, and partly as a way to define the atmosphere or culture of Kidstime as a fun and positive experience, despite the distressing content, which may be addressed. It also changes the definition and expectations of the staff.

There is a number of evaluation done on the kidstime workshops. As a general rule, individual feedback forms are completed by the adults and children after each workshop. A study of the German Kidstime Workshops found that 95% of families (similar reports from adults, adolescents and younger children) submitting evaluations stated they benefited from attending the workshops and wanted to continue attending. All family members stated they had learned something new about mental illness at the workshops and that the workshops helped them to talk about mental illness within and outside of their families. Watching and reflecting on the children's drama film, as well as the multi-family group format (particularly the feeling of solidarity among families) were viewed as helpful catalysts in enabling the open discussion of issues that may have been perceived as being too "shameful" to talk about outside of the group.

In Barcelona, a research was made with 65 parents who participated in the workshops. There were administered:

- Self-perception of Social Stigma Scale SSQ
- Rosenberg self-esteem scale
- CD-RISC Resilience Scale
- Inventory of Parenting Practices IPC
- SDQ

Satisfaction survey for children and adults, collecting a total of 173 surveys.

The results showed significant pre-post differences in the "involvement" and "expression of affection" subscales of the Parenting Guidelines Inventory and "Prosocial behaviour" of children measured with the SDQ and in adult self-stigma.

The results showed that Kidstime workshops are effective when it comes to enhancing the affective support of parents towards their children, improving the prosocial behaviour of boys and girls and reducing the stigma of parents affected by mental health problems.

6.1. Intervention in Schools

The Mindful School Project has been developed as a complement to the Kidstime Workshop, and it is based on the kidstime model and philosophy (Cooklin & Barnes, 2021; Frier, 2021). It offers Awareness raising for the whole school staff, lessons on mental illness and mental health plus ideas on how to develop a Mindful School atmosphere to support better the students most at risk when identifying young carers. Within an Erasmus+ project mindful schools has been running in Berlin, Barcelona and Reykjavik for 8th to10th grade in 2022 and is currently followed by a similar Project in primary school in Berlin, Barcelona, Reykjavik and Vienna.

In Barcelona a questionnaire was filled out before and after the lessons by 82 students. Results show, that a majority of almost 75% of the students reported increase in understanding of mental illness. A vast shift was represented by a number of 70% of the students that agreed to the statement that parental mental illness is not rare and thus a relevant issue, while the numbers were 4% before the lessons. There is also a lot of qualitative data from the teachers. The majority found the program helpful in supporting themselves as teachers as well as the students.

Experiences from the school in Reykjavik (Lougolaekjaerskoli) showed that „The introductory event in particular contributes to opening up the long overdue discussion of the topic within the teaching staff. Previously missing tools for students whose parents are mentally ill are communicated within the framework of the project. In the process, professionals are encouraged in the hope that they will be able to adequately support the children and young people." (feedback from teacher)

Experiences from the Berlin school (Green Campus) summarized that Theatre pedagogical exercises within the framework of the workshop offer students the opportunity to communicate their own issues in a playful way, to put themselves in other perspectives and to develop and try out alternative ways for action. Knowledge about support networks and mental illness is built up and deepened in a creative way. (feedback from teacher)

7. CONCLUSIONS

Kidstime workshops have proven to be effective when it comes to enhancing the affective support of parents towards their children, improving the prosocial behavior of boys and girls and reducing the stigma of parents affected by mental health problems. There is evidence that Kidstime workshops strengthen resilience in the face of developmental risks caused by parental mental illness.

The mindful school program aims to empower teachers and other professionals in the school system to support students in general and especially young carers. Evaluation shows that the students' perspective on parental mental illness has changed and their knowledge about it deepened. Safe spaces need to be created within schools to help the students talk honestly about their feelings. The program offers some approaches that can be further implemented in the school culture and should be embedded in wider social networks.

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AUTHORS' INFORMATION

Full name: Klaus Henner Spierling
Institutional affiliation: AGAPLESION Diakonieklinikum Rotenburg
Institutional address: Elise-Averdieck-Str. 17, 27356 Rotenburg (Wümme)
Email address: h.spierling@diako-online.de
Short biographical sketch: Klaus Henner Spierling is a psychologist working in a social paediatric centre in the northern parts of Germany and as a trainer and counsellor. He has a training in systemic therapy, multifamily therapy and trauma therapy and runs several kidstime workshops in Germany. He is a trainer for kidstime workshops and multifamily work with special expertise in clinical and school contexts.

Full name: Miguel Cardenas Rodriguez, Dr.
Institutional affiliation: CSMIJ Hospitalet Nord
Institutional address: C/ Torns 18 | 08904 L´Hospitalet de Llobregat , T. +34935954188 | F. +34 93 5954189
Short biographical sketch: Miguel Cardenas is a psychiatrist working in community child and adolescent mental health in CAMHS in Barcelona, Spain. He works in the Kidstime workshops in Spain since 2014. He also develops projects in community mental Health in Colombia

Section 4
Cognitive Experimental Psychology

Chapter #19

VISUOSPATIAL PROCESSING IN THE RESOLUTION OF THE CORSI BLOCK-TAPPING IN BILINGUAL AND MONOLINGUAL CHILDREN

Samira Bouayed[1], Annamaria Lammel[2], & Louise Goyet[3]
[1]PhD Student-Université Paris 8-Vincennes-Saint-Denis, Paragraphe Laboratory - EA349, France
[2]Ph-Université Paris 8 -Vincennes-Saint-Denis, Paragraphe Laboratory - EA349, France
[3]MCF -Université Paris 8 -Vincennes-Saint-Denis, Dysco Laboratory, France

ABSTRACT
Several studies (Grosjean, 2019) have shown that bilingualism provides an advantage in executive functions. Visuospatial Working Memory (vs WM) is a component of "working memory" responsible for the temporary storage and manipulation of visual and spatial information. The aim of this study is to identify and compare vs WM information processing strategies and to highlight different cognitive profiles between monolingual and bilingual children. The methodology of this research is situated within an experimental framework using the Corsi Block-Tapping Test (Corsi, 1972), which specifically assesses Visuospatial Working Memory. The test comprises two conditions: direct spatial memory and indirect spatial memory. In these tasks, the participant needs to tap the blocks shown by the experimenter in direct or indirect order. To gain a better understanding of the characteristics of the presumed cognitive functioning in Corsi Block-Tapping Test success, this study focused on analysing the nature of errors in the "direct" and "indirect" conditions of the Corsi Block-Tapping Test. This comprehensive error analysis allowed for a deeper exploration of how individuals approached Visuospatial Working Memory tasks and provided insights into their cognitive decision-making processes during the test.

Keywords: bilingualism, visuospatial working memory, cognitive profiles, executive functions.

1. INTRODUCTION

1.1. Bilingualism

The constant mobility of individuals has given rise to a cultural and cosmopolitan diversity that has peaked the interest of cognitive science studies in bilingual individuals. Bilingualism, as a complex linguistic phenomenon, can be conceptualized as an individual's competence or ability to communicate proficiently in two languages. This competence can result from early immersion in a bilingual environment or systematic learning of two distinct languages. Historically, bilingualism was often considered as a dichotomy between complete mastery of two languages. However, research (Grosjean, 2010) has highlighted the variability in levels of linguistic competence in each language and the flexibility of bilingualism, ranging from the coexistence of two distinct languages to a fluid continuum of language skills. Researchers have shown that bilingualism seems to facilitate cross-cultural communication and it also has positive effects on sensory and cognitive abilities. To explain this effect, a hypothesis (Bialystok & Martin, 2004) proposes that mutual interference between the bilingual child's two languages forces the child to develop ability to inhibit one language while using another and, in some ways, accelerate sensory and cognitive development (such

as attention, memory, imagination, inhibition, cognitive flexibility, programming, planning, and language skills). Another study has shown that bilinguals performed better than monolinguals on category tests (Bialystok, Craik, & Luk, 2008). Bilingual individuals are frequently exposed to two linguistic systems and must switch between languages based on the context. Bilinguals often develop superior inhibitory control, which refers to the ability to suppress irrelevant information or responses. As we delve deeper into bilingualism and its impact on cognitive functions, it becomes clear that bilingual competence goes beyond linguistic boundaries. After discussing its influence on language skills and inhibitory control, it's crucial to explore its broader effects on executive functions, especially in young children.

1.2. Bilingualism Advantages on Cognitive Functions

Previous studies have shown that in young children aged 6 years old, learning multiple languages simultaneously promotes the development of executive functions (Barac; Bialystok; Castro & Sanchez, 2014). Executive functions refer to a complex set of highly integrated and interdependent cognitive processes responsible for planning, regulating, managing, and adapting behaviours in response to environmental demands (Miyake & Friedman, 2012; Diamond, 2013). This advantage is reflected in bilingual children through enhanced cognitive processing speed, mental flexibility, and better resistance to interference (Bialystok, Craik, Klein, & Viswanatha, 2004; Bialystok, 2006; Bialystok & Feng, 2009) compared to monolingual children. It is suggested that the alternation between two systems of mental representation of languages (linguistic and cultural codes), in bilinguals could explain the different information processing strategies compared to monolinguals.

The cognitive benefits of bilingualism in children, it is important to connect this with our understanding of how individuals process information, especially in complex problem-solving scenarios. The Information Processing Model, developed by Newell and Simon (1972), provides a useful framework for examining cognitive mechanisms in such situations.

1.3. The information Processing Model in Cognitive Research

The Information Processing Model (Problem Solving Model) developed by Newell and Simon (1972) provides a solid conceptual framework for understanding how individuals process information when faced with complex problem-solving tasks. This model emphasizes the importance of cognitive mechanisms such as perception, memory, attention, and decision-making. It also considers problem-solving as an iterative process involving multiple distinct stages, such as problem understanding, strategy generation, action planning, and result evaluation.

2. OBJECTIVES, METHODS

The aim of the present study is to explore the effect of a language learning context on information processing and retrieval strategies in Visuospatial Working Memory (vs WM). The purpose is also to identify distinct cognitive profiles between bilingual and monolingual children aged 6 to 10 year-olds. To accomplish these objectives, participants took part in the Corsi Block-Tapping Test, specifically designed to assess Visuospatial Working Memory abilities. The choice of this test is motivated by its adaptability to a bilingual population as it does not require verbalization, enabling a more precise evaluation of executive skills in a multilingual context. To assess whether these differences vary by age, participants were divided into two age groups: a first group of participants aged 6 to 7 years and 11 months,

and a second group aged 8 to 10 years and 11 months. The selection of this age range is based on the theory of Pascual-Leone (Pascual-Leone, Goodman, Ammon, & Subelman, 1978), which claims that individuals transition from one stage of development to another by transcending their previous cognitive schemes. In this context, this age selection reflects critical periods where children are likely to develop new cognitive schemes allowing for a more sophisticated understanding and efficient management of executive functions. This choice is also driven by the desire to identify how this cognitive transcendence differs between bilingual and monolingual children, thereby shedding light on the potential advantages of bilingualism in the development of executive functions. Emphasis is placed on the analysis of participants' errors during the Corsi Block-Tapping Test resolution. The general hypothesis underlying this study predicts that, on one hand, bilingual children will make fewer errors than their monolingual counterparts during the test execution. On the other hand, it predicts that the nature of errors observed will be distinct between bilingual and monolingual groups, suggesting the adoption of different information retrieval strategies in visuospatial working memory.

2.1. Participants

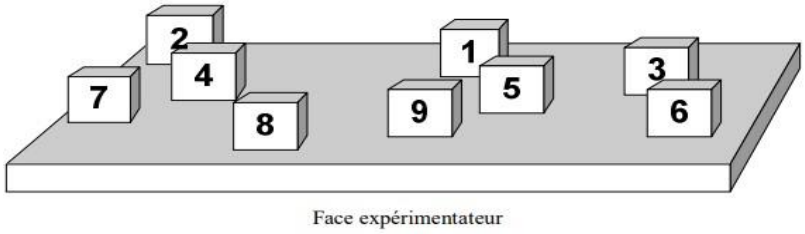
This study involved 66 children aged 6 to 7 years and 11 months (M = 7.5; SD = 0.86), including 33 bilingual subjects and 33 monolingual subjects. Additionally, 58 children aged 8 to 10 years and 11 months were recruited (M = 10.02; SD = 0.59), among whom there were 29 bilingual subjects and 29 monolingual subjects. The choice of the age range from 6 to 10 years is based on elements from the multidimensional model of Pascual-Leone (Pascual-Leone et al., 1978), a neo Piagetian model considers this age range as a developmental period characterized by increased neuroplasticity. During this developmental period, children's brains are particularly receptive to environmental stimuli and learning processes. According to this model, children aged 6 to 10 years are in the phase of concrete operations, during which their visual memory abilities gradually develop. These abilities stabilize around the age of 14 and reach full maturity around 19-20 years of age. During this developmental period, individuals demonstrate improved logical reasoning and problem-solving abilities in concrete contexts. Within the framework of Pascual-Leone's theory, cognitive development is divided into multiple dimensions, each corresponding to distinct age groups and stages of cognitive growth. Among these dimensions, Dimension 3 (with an average age range of 6-8 years-old) focuses on the use of mental strategies to solve more complex problems. The following dimension, Dimension 4 (approximately 8 to 10 years-old) concentrates on the integration of advanced mental operations and the increase in working memory resources to support the construction of complex knowledge and enhance problem-solving abilities (Pascual-Leone et al., 1978; Pascual-Leone, 1987; Pascual-Leone & Johnson, 2005). These dimensions progress in two-year increments from the age of 3 to a maximum of 7 years at the end of adolescence. To explore these developmental changes, an inter-age comparison of vs WM abilities was conducted within the present study.

2.2. Materials

The Corsi Block-Tapping Test was administered to the participants. This test was primarily designed to assess visuospatial working memory abilities, which refer to the capacity to recall and retain a specific amount of information over a given period (Corsi, 1972; Jones, Ferrand, Stuart, & Morris, 1995). The choice of the Corsi Block-Tapping Test is justified by its ability to measure Visuospatial Working Memory while being suitable for a bilingual population. This standardized test is also appropriate for different age groups. The Corsi Block-Tapping Test has been used in studies involving children of various ages,

demonstrating its validity in assessing Visuospatial Working Memory performance during development (Isaacs & Vargha-Khadem, 1989). The test apparatus consists of a white board on which 9 identical blue cubes (28x28x28 mm) are placed, following the original version (Corsi, 1972). The blocks are numbered from 1 to 9 and are visible only to the experimenter (cf. Figure 1). This task, referred to as spatial memory, comprises two conditions: direct visuospatial memory and indirect or reverse visuospatial memory. The experimental procedure in the current study is the same for both conditions (direct and indirect orders).

Figure 1.
Illustration of the original Corsi Tapping-Block task (Corsi, 1972).



2.3. Experimental Procedure

In this study, the subject sits facing the experimenter, separated by a table on which the test apparatus is placed. The experimenter sequentially taps out visuospatial pointing sequences using their index finger, starting with two blocks. For each sequence, two trials of the same length are presented. Subsequent trials are only offered if at least one of the first two trials is correctly reproduced. The pointing sequence is executed at a pace of one block per second. To prevent the subject from memorizing the block order as a visual pattern, the experimenter lifts their hand approximately thirty centimeters between each pointing sequence and never repeats the same gesture. After the experimenter has completed the pointing sequences, the subjects are immediately asked to replicate the same action.

The experimenter provides the following instruction for the direct order: "I am going to tap out a sequence of blocks on this board. When I finish tapping the blocks, I want you to tap the same blocks in the same order as me. After that, I will tap out more sequences. The length of the sequences will gradually increase." If the subject begins to execute the instruction before the experimenter finishes reading it, the following instruction will be read as follows: "Please wait until I have finished." The instruction for the indirect order is as follows: "I am going to tap out a sequence of blocks on this board. When I finish tapping the blocks, I want you to tap the same blocks, but in the reverse order of mine. After that, I will tap out more sequences. The length of the sequences will gradually increase" (instructions inspired by those proposed by Kessels, Van Zandvoort, Postma, Kappelle, & De Haan, 2000). The subject can self-correct in case of errors. The procedure used is adapted from the Wechsler Memory Scale (Wechsler, & Naglieri, 2009).

Three criteria for successfully completing the test (direct and reverse orders) are used to measure the scope of Visuospatial Working Memory in relation to:

(i) Precise Block Location: The designated block is correctly identified based on its position on the board. (ii) Direction of Path or Sequence: The direction of movement from one block to another is correct and matches the pattern presented by the experimenter.

(iii) Exact Number of Tapped Blocks: The exact number of blocks in the given sequence is correctly noted.

During the assessment, errors are recorded in three categories: (i) direction, (ii) location, and (iii) number errors, made by the participants. The experimenter counts the number of errors as follows:

(i). Direction: A direction or path error means that the subject recalls the correct blocks pointed out by the experimenter but not in the correct cube-to-cube direction. (ii). Location: A location error means that the subject does not remember the correct block (number visible to the experimenter). (iii). Number: A number error means that the subject does not remember the same number of blocks pointed out per level.

If two attempts of an item fail, the experimenter terminates the test.

Exploring the information processing and retrieval strategies employed by participants to solve spatial problems can be achieved through error analysis. According to Clément (2006), the discovery of solutions and the implementation of procedures depend on three elements: the situation, memory knowledge, and representation. "The situation" refers to the context in which the spatial problem is solved. In the context of the Corsi Block-Tapping Test, the situation encompasses elements such as the arrangement of cubes in space, specific task related constraints, as well as cues or information available in the environment. This dimension of situational analysis allows for the assessment of how participants interact with their environment in an attempt to solve the problem, including identifying errors related to the perception and understanding of the spatial configuration of the cubes. "Memory knowledge" is a fundamental element in error analysis. It involves considering how individuals mobilize their pre-existing knowledge, memory skills, and ability to access stored information in memory to solve the task. This dimension of analysis helps understand how errors can result from shortcomings in retrieving, manipulating, or properly using memorized information. "Representation" is a dynamic and transient construct that emerges from the interaction between the situation and the knowledge available in memory. It plays a crucial role in solving spatial problems such as the Corsi Block-Tapping Test. Representation can be considered a kind of mental model or cognitive structure used by participants to organize, interpret, and manipulate spatial information. Through an examination of the construction and utilization of mental representations by participants in solving spatial problems, the investigation aims to elucidate the specific methodologies employed in problem-solving approaches. Thus, by exploring information processing and retrieval strategies during the resolution of spatial problems, taking into account the elements mentioned by Clément (2006) such as the situation, memory knowledge, and representation, we can better understand the cognitive processes involved in these tasks and identify factors that influence individuals' performance.

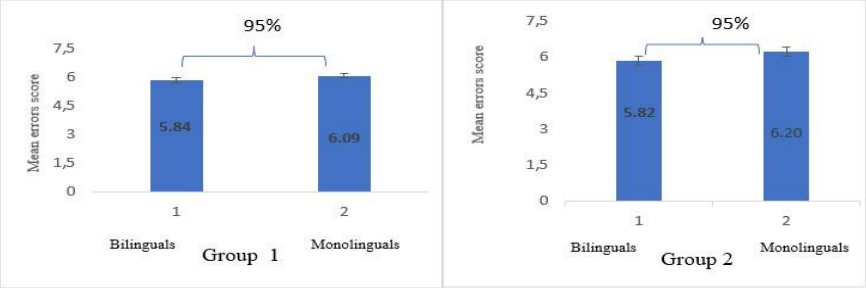
2.4. Analysis and Results

A comparative analysis of errors made in vs WM between bilingual and monolingual participants in the first group, has shown, a lower average error score for bilingual participants (M=5.84; SD=1.60) compared to monolingual participants (M=6.09; SD=1.42, Cf. Graph 1). The independent T. Test analysis reveals a significant difference (p=0.02) between the groups. These results suggest a positive influence of bilingualism on Visuospatial Working Memory performance at this young age.

In the second group, a comparative analysis of errors made in Visuospatial Working Memory (WM) between bilingual and monolingual participants also reveals a significant difference ($p = 0.01$). Bilingual participants exhibit an average error score of $M = 5.82$;

SD = 1.66, while monolingual participants have an average error score of M = 6.20; SD = 1.32 (cf. graph 1). These results suggest a positive influence of bilingualism on Visuospatial Working Memory performance at this later age.

Graph 1.
Mean Errors Score (error bars) in Corsi block-tapping test (Bilinguals Vs. Monolinguals aged 6-8 years-old (Group 1) and 8-10 years-old (Group 2)).



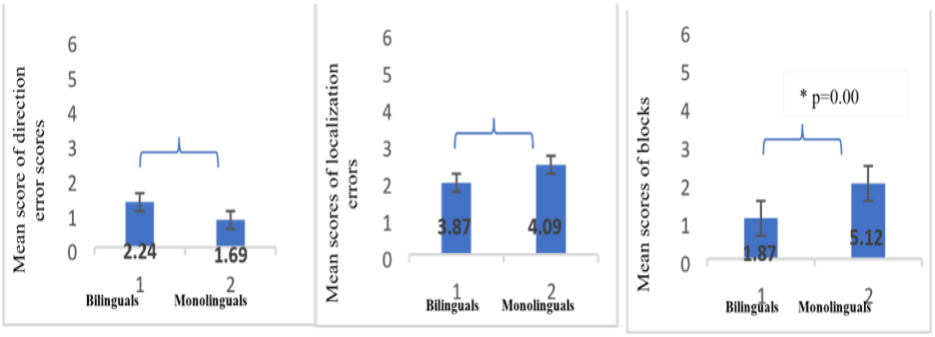
A second analysis focused on the errors made by the participants: errors in direction, errors in location, and errors in the number of pointed blocks in the sequences for each group of participants.

2.4.1. Group 1: Ages 6 to 7.11 years-old

Direction Errors analysis: The analysis of direction errors reveals interesting results. Bilingual participants have a higher average score for direction errors (M = 2.24; SD = 1.47) compared to monolingual participants (M = 1.69; SD = 1.44) (cf. Graph 2). The T-test indicates that the observed difference is not statistically significant (p = 0.13). However, it is important to note that the descriptive analysis of directional errors does not lead to a significant conclusion about the observed difference. Nonetheless, it may suggest that bilingual participants encounter more difficulties when it comes to mentally manipulating spatial information, such as the relative position of objects in space, distances, and orientations.

Location Errors Analyses: The analysis of location errors reveals no significant difference (T-test, p = 0.45). However, it's important to note that the analysis shows a slightly higher average of location errors in monolingual participants (M = 4.09; SD = 1.28) compared to bilingual participants (M = 3.87; SD = 0.99) (cf. Graph 2). Despite the lack of statistical significance, these results suggest an interesting trend. Monolingual participants appear to exhibit a tendency to make more errors when it comes to memorizing and reproducing spatial information compared to bilingual participants. This disparity could potentially be explained by considering the challenges monolingual participants may face in coordinating visual attention. In a localization task, monolingual participants must temporarily hold pertinent visuospatial information, such as the positions of objects to be located, in their working memory. However, due to the higher cognitive load on visuo-spatial working memory, monolingual participants may encounter difficulties maintaining this information in memory while effectively coordinating their visual attention. This challenge could be a contributing factor to the observed higher number of location errors.

Graph 2.
Mean Directional, localization and number error Scores in Corsi block-tapping test (Group 1 (Bilinguals Vs. Monolinguals aged 6- 8 years old).



2.4.2. Number Errors Analysis

The results of the analysis of block-counting errors are significant and show a marked difference in favour of bilingual participants, with a lower average score of block-counting errors (M = 1.87, SD = 1.38) compared to monolingual participants (M = 5.12, SD = 1.65), as indicated by the T-test ($p < 0.001$). These results suggest a positive influence of bilingualism on the manipulation of spatial information. The significant difference in block

counting errors strongly supports this conclusion, with bilingual participants displaying a notably superior performance compared to their monolingual counterparts. This implies that bilingual individuals may have a cognitive advantage when it comes to tasks involving spatial information manipulation.

2.4.3. Group 2: Ages 8 to 10.11 years-old

Direction Errors Analysis:

The analysis of direction errors reveals that bilingual participants have a higher average score for direction errors (M = 2.62; SD = 0.99) compared to monolingual participants (M = 1.24; SD = 1.13) (cf. Graph 3). These results indicate that bilingual participants encounter additional issues when it comes to following non-verbal directional instructions compared to monolingual participants, likely due to a higher cognitive load. Significant differences ($p < 0.01$) between the two groups were found in the T-test, underscoring the cognitive challenges faced by bilingual individuals in tasks involving non-verbal spatial information.

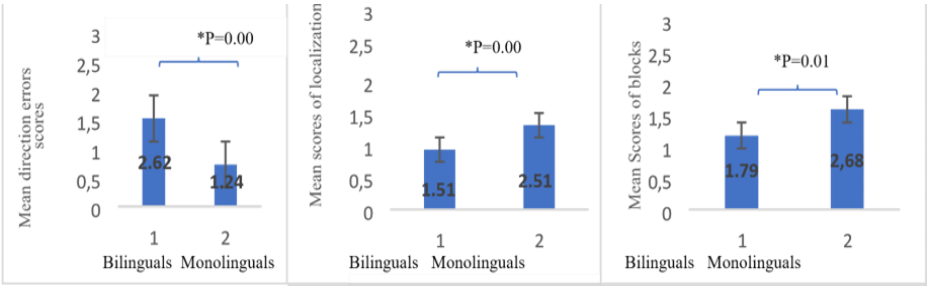
Location Errors Analysis:

The analysis of location errors reveals that monolingual participants have a higher average score of location errors (M = 2.51; SD = 0.89) compared to bilingual participants (M = 1.51; SD = 0.77) (cf. Figure 2). These results indicate significant differences ($p < 0.01$) between monolingual and bilingual participants. This suggests that monolingual participants face greater challenges when it comes to accurate spatial location tasks compared to their bilingual counterparts.

Number Errors Analysis:

The analysis of block-counting errors reveals that bilingual participants have a lower average score of errors in the number of pointed blocks (M = 1.79; SD = 1.15) compared to monolingual participants (M = 2.68; SD = 1.36) (cf. Graph 3). These results indicate significant differences (p = 0.01) between bilingual and monolingual participants. This suggests that bilingual participants exhibit a more accurate performance in counting pointed blocks compared to their monolingual counterparts.

Graph 3.
Mean Directional, localization and number error Scores in Corsi block-tapping test (Bilinguals Vs. Monolinguals aged 8-10 years old).



The data reveals that monolingual children exhibit a higher frequency of errors in terms of location and the number of pointed blocks, while bilingual children demonstrate an increased prevalence of direction errors, as shown in graph 3. These observed trends are likely influenced by various factors, including frequent language switching, which could play a determining role in the observed disparities. Language switching can influence the overall cognitive load of bilinguals. Indeed, frequent switching between two languages requires a degree of cognitive flexibility, which may potentially increase the cognitive load when performing tasks involving spatial information. The coordination of visual attention and the manipulation of spatial information require efficient use of working memory. Bilinguals may face an additional challenge due to the need to manage two languages and transition between them, potentially increasing the demand for cognitive resources associated with these visuo-spatial tasks.

3. FUTURE RESEARCH DIRECTIONS

The results of our research provide promising data, but a better understanding can be achieved by comparing them with subsequent studies conducted on a larger sample of children. The integration of new approaches, such as the complex tasks we have described, would also be desirable to enrich our understanding. Furthermore, a longitudinal study conducted over time could provide meaningful, and potentially definitive, insights into the subject. A comparison of linguistic characteristics between different languages could have been relevant and should be considered. To assess inhibition and verbal flexibility, the use of tests such as the Stroop test and Verbal Fluency Tasks could also be considered to gain a more comprehensive view of the cognitive processes involved. By considering these perspectives, we can deepen our knowledge and make a significant contribution to this field of research.

4. CONCLUSION/DISCUSSION

The current study extensively examined the results of comparative analyses of performance in Visuospatial Working Memory (vs WM) between groups of bilingual and monolingual individuals, divided into two distinct age groups. In the first group, consisting of children aged 6 to 7.11 years-old, significant differences were found in terms of errors made in vs WM between bilingual and monolingual subjects. Bilinguals exhibited a lower average error score, suggesting higher visuospatial ability in bilingual children at this early age. The significant difference was observed in the number of pointed block errors, with clear statistical significance. Bilingual subjects displayed a markedly lower number of cube-pointing errors compared to monolingual subjects. These results underscore the positive impact of bilingualism on spatial information manipulation in children of this early age cohort.

According to Pascual-Leone's theory, children in this age group are likely in a cognitive development phase where they are progressively acquiring more complex visuospatial skills. The benefits of bilingualism in reducing pointed block errors may reflect an enhancement in their ability to mentally manage spatial information, which is consistent with Pascual-Leone's developmental model.

In the second group, consisting of children aged 8 to 10.11 years-old, the analyses continued to reveal significant differences between bilingual and monolingual subjects in terms of directional, location, and number-pointing errors. Bilinguals showed a significantly higher average number of directional errors compared to monolinguals, suggesting that bilinguals may face additional challenges in following non-verbal management instructions, likely due to increased cognitive load. The analysis of location errors revealed a significant difference in favour of bilinguals, with a lower average number of location errors compared to monolinguals. This finding reinforces the idea that monolingual subjects may have specific challenges related to the coordination of visual attention, resulting in a higher frequency of location errors. Regarding the number of pointed block errors, the results showed a significant difference in favour of bilinguals, confirming the positive impact of bilingualism on spatial information manipulation in children of this older age cohort.

According to Pascual-Leone's theory, older children in this age range have generally reached a more advanced stage of cognitive development, meaning they can mentally manipulate more complex spatial information. However, bilinguals exhibited more directional errors, which could indicate increased complexity in their coordination of visual attention and their ability to follow non-verbal management instructions, suggesting a higher cognitive load.

The comparative analysis of Visuospatial Working Memory (vs WM) between bilingual and monolingual participants in two age groups yielded significant insights. In the younger age group (6 to 7.11 years-old), bilingual children demonstrated superior vs WM performance, as evidenced by a lower average error score. This difference was particularly pronounced in the number of pointed block errors. These results align with the theoretical framework proposed by Pascual-Leone, suggesting that bilingualism positively influences spatial information manipulation in early childhood.

In the older age group (8 to 10.11 years-old), bilingual participants exhibited distinct error patterns. Although they displayed a higher frequency of directional errors, bilingual participants surpassed their monolingual counterparts in both location and number-pointing accuracy. These findings indicate that bilingualism may introduce additional cognitive challenges, possibly related to language switching and the coordination of visual attention. However, they still excel in manipulating spatial information.

The research sheds light on the nuanced relationship between bilingualism and cognitive processes, particularly Visuospatial Working Memory. Understanding these differences can inform educational strategies and interventions. Educators may consider the advantages of bilingualism in enhancing specific cognitive skills when designing curriculum and activities.

Moreover, these findings have potential implications for cognitive development theories and bilingualism studies. They underscore the importance of considering age-related cognitive changes and the role of language switching in bilinguals. Future research could delve deeper into these aspects, potentially enriching our understanding of cognitive development.

This research opens avenues for further investigations, including longitudinal studies with larger cohorts and cross-linguistic comparisons. Additionally, the study highlights the relevance of assessing inhibition and verbal flexibility in bilingual children using tests like the Stroop task and Verbal Fluency task.

These results validate our hypothesis and demonstrate that language acquisition modifies the strategies used in a Visuospatial Working Memory task. Information retrieval strategies in Visuospatial Working Memory differ between bilingual and monolingual subjects, illustrating distinct visuospatial behavioural processing patterns between the two populations. It is important to note that this study does not conclude that bilingual children have better abilities compared to monolingual children in all tasks. Rather, the differences between the two groups are noticeable in specific tasks that involve information processing and resolution strategies in Visuospatial Working Memory. To conclude, this study contributes valuable insights into the cognitive effects of bilingualism, emphasizing the multifaceted nature of Visuospatial Working Memory and its relation to language skills. The results prompt us to explore the intricate dynamics of cognitive processes in bilingual individuals, with potential implications for educational and cognitive research.

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KEY TERMS & DEFINITIONS

Executive functions: are cognitive skills that allow us to act in an organized way to reach goals (there are three main ones: working memory update (MdT), mental flexibility and cognitive inhibition). These functions are closely linked and thus enable cognitive and behavioural control (Friedman & Miyake, 2012). These executive functions also play a main role in many cognitive activities, such as solving mathematical problems and understanding scientific concepts (Gathercole et al., 2019).

The Visuospatial Working Memory (vs WM): is a component of working memory, plays a crucial role in many cognitive activities. Visuospatial Working Memory (vs WM) allows visual information, such as objects, shapes, colours and patterns, to be temporarily stored in memory for processing and mental manipulation. It also allows the mental manipulation of spatial information, such as the relative position of objects in space, distances and orientations, which is essential for navigation and spatial orientation. The Visuospatial Working Memory (vs WM) plays a role in coordinating visual attention by keeping information about objects or locations we need to pay attention to in temporary memory, while filtering out visual distractions. It helps to solve spatial problems, such as searching for a hidden object in a complex environment, constructing a mental route or carrying out tasks that involve spatial relationships. Visuospatial Working Memory (vs WM) facilitates the integration of visual information with other sensory modalities, such as hearing and touch, to form a coherent representation of the world.

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AUTHORS' INFORMATION

Full name: Samira Bouayed
Institutional affiliation: Université Paris 8-Vincennes-Saint-Denis, Paragraphe Laboratory - EA349 (France)
Institutional address: Université Paris8-Vincennes-Saint-Denis -2 rue de la liberté 93526 Saint-Denis
Email address: Samira_ben@hotmail.fr
Short biographical sketch: I am a clinical psychologist in ESAT (Work Support and Support Facility), with a cognitive-behavioural and clinical neuropsychology approach. PhD Student in psychology at the University of Paris 8 - Vincennes Saint-Denis. My research focuses on the study of development and executive functioning in the bilingual subject. In addition, my research focuses on the study of the influence of bilingualism on the development of working memory and executive functioning. In other words, study how the code switching can develop performance of executive operation, especially the updating of working memory. Comparing bilingual and monolingual subjects in the execution of complex tasks that we observe and study the development and performance of executive functioning in children.

Full name: Annamaria Lammel
Institutional affiliation: Université Paris 8-Vincennes-Saint-Denis, Paragraphe Laboratory - EA349 (France)
Institutional address: Université Paris8-Vincennes-Saint-Denis -2 rue de la liberté 93526 Saint-Denis
Email address: anlammel@gmail.com
Short biographical sketch: I am Professor Emeritus of Developmental Psychology at the Université de Paris 8, and Director of Research at the Paragraph Laboratory. Since 2014 and the director of the "e-Laboratory Interaction between Climate System and Human System", at UNESCO. I am the lead author of the 5th and 6th Reports of the IPCC WGII 2014, 2022, and the nominated author for the next UN GEO-7 (until 2026). My research focuses on developing adaptive processes between climatic environments, cultures, and cognitive and behavioural models. I had conducted and directed empirical field research for several years with the Totonac indigenous population in the Gulf of Mexico, with an Inuit population (Canada), in New Caledonia (Small Islands), in French Guyana (Amazonia), in the region of Curuai (Amazon river) in Brazil, in the Pampa of Argentina, in several European countries, and in Paris and its agglomerations. At present, I participates in and coordinates several international research projects.

Full name: Louise Goyet, Ph.D. – Associate Professor
Institutional affiliation: Université Paris 8 -Vincennes-Saint-Denis, Dysco Laboratory (France)
Institutional address: Université Paris8-Vincennes-Saint-Denis -2 rue de la liberté 93526 Saint-Denis
Email address: Louise.goyet02@univ-paris8.fr
Short biographical sketch: Louise Goyet is a lecturer in Developmental Psychology at the University of Paris 8 - Vincennes Saint-Denis. Her research focuses on the study of language development in babies and young children (sound discrimination and lexical acquisition, production of semantic approximations). In addition, her research focuses on the study of the influence of emotional lexicon on the recognition and representation of basic and complex emotions in young children. In other words, to study how language helps the representation and categorization of emotions. It's through the use of different methodologies that we observe and study the perceptual and conceptual development of the baby and young child.

Chapter #20

STATES OF CONSCIOUSNESS: THEIR NATURE AND FUNCTION

Shulamith Kreitler
School of Psychological Sciences, Tel-Aviv University, Israel

ABSTRACT
The objective of the chapter is to clarify the nature and role of states of consciousness. The major tools are the constructs of consciousness, cognition and meaning and their interrelations. After clarifying the relations of consciousness with awareness and cognition, meaning is presented as the understructure of cognition. The next section deals with meaning – its definition, the meaning variables, its properties, its assessment, and the manifestations of meaning in the domains of cognition, personality and emotions. The following part is devoted to states of consciousness: their description, definition, properties, causes, their dependence on meaning-based relations, and their evocation as a function of enhancing the role of specific meaning variables. The potential contribution of states of consciousness for deepening an extending the control of action and experiencing of human beings are described.

Keywords: states of consciousness, awareness, cognition, meaning, focalization.

1. CONSCIOUSNESS AND AWARENESS

Human beings seem to have been always aware of consciousness and have wondered what it is, what it does, who has it, and what are its effects. Part of the difficulty to understand consciousness may be grounded in the fact that examining it requires using it. Another reason may be the multiple aspects that it has, from the points of view of psychology, sociology, and physiology – to mention just a few – which may be difficult to integrate. A convenient starting point is focusing on the aspect that is most prominent in the different definitions and approaches to consciousness. Even a cursory glance at synonyms of consciousness shows that the majority refer to cognitive processes or acts, such as apprehension, awareness, cognizance, realization, attention, alertness or cognizance.

Hence, it is not surprising that many of the more formal definitions of consciousness are affiliated with awareness, which is a prime manifestation of cognition (Dennett, 1996). Both the Merrian Webster dictionary and the Oxford dictionary define consciousness as the state of being aware of something. This conception has been adopted by prominent European philosophers, including Locke and Descartes, and has been elaborated and promoted by Freud (1981) and the psychodynamic approach to psychology, that has been generally accepted.

According to this prevalent and popular conception consciousness is considered as defined in terms of a perpendicular continuum, in which the upper end represents ordinary consciousness, with its highly valued features of awareness, manifested also as clarity, logical thinking, reason, control of drives, emotional regulation, realism and volition. The lower end represents unconsciousness, the location or state in which repressed contents, mostly of sexual or aggressive nature (Freud, 1981), or archetypal themes (Jung, 1964)

exist. In between the two poles there is the preconscious, which is the reservoir of the material that is accessible to voluntary recall but usually exists outside consciousness. Thus, while the top level characterizes consciousness with awareness and the low level characterizes unconsciousness with barred awareness due to repressions, the middle level characterizes preconsciousness with latent awareness (Freud, 1915). The tripartite structure is related also to the major personality factors. Thus, the ego is placed both in the top and medium levels, the superego in all three levels and the id only in the level of unconsciousness (Freud, 1981).

2. WHAT ABOUT THE STATES OF CONSCIOUSNESS?

States of consciousness are related to consciousness at least by their name, but it remains unclear where they belong, how they arise, and where they should or could be placed along the perpendicular axis of consciousness. In addition, it is customary to refer to the 'states' in the plural (e.g., Ludwig, 1966; Tart, 1978), but there has been no clear evidence that these are actually states of consciousness that differ from each other in major characteristics.

The literature about state of consciousness describes different kinds of states. The major distinctions between them are drawn in terms of the stimuli or triggers responsible for their evocation. The main ones are (a) physiological changes due to internal and external factors, such as illness, sleep, medications, or dehydration; (b) changes due to the application of psychological practices, such as hypnosis or meditation; and (c) ingestion of psychotropic chemical materials. The changes described as (a) – (b) are usually called states of consciousness while the changes described as (c) are often referred to as altered states of consciousness (see below States of consciousness: Kinds). However, the differences between the two kinds are neither sharp nor clear. Other related questions that need clarification concern the relation of all the described changes to consciousness and how many different states there are.

Examining the known states of consciousness reveals major differences between them for example in terms of features of illusions, irrationality, hallucinatory tendencies (Fischer, 1978; Tart, 1978) as well as the following characteristics: Salience and status of the self; sense of control and ability to control; clarity of thought; precision of perception in regard to external reality and environment; precision of perception in regard to internal reality and environment; emotional involvement; arousal; kind of cognitive processes activated; accessibility and inhibition of certain kinds of information (Kreitler, 2009). The differences between the states of consciousness and the variations in consciousness they evidence do not justify theoretically and methodologically lumping all of them indiscriminately into the "unconscious".

3. THE RELATIONS BETWEEN CONSCIOUSNESS AND COGNITION

Analyzing and characterizing the differences between the states of consciousness requires placing them in some kind of context. Cognition appears to be an adequate context, at least as a starting point. Why cognition?

Scanning the presented list of states of consciousness, even though it is likely to be partial, raises the question of what kind of system in the living organism could be responsible for such a diversity of effects. Cognition seems to be the only one system that could be considered as a candidate for this role. At least at present, on the psychological

level, cognition is the only structure that has been shown capable as a single system to promote, generate, enable and affect phenomena in all the named domains, ranging from perception to behavior, including all the involved cognitive processes, emotions, and personality traits.

Hence, it is not surprising that there is a rich literature reflecting the close relations that have been noted between consciousness and cognition. Some investigators have defined consciousness explicitly in cognitive terms, such as informational accessibility (Baars, 1988), attention (Graziano, 2020), or self-awareness (Nunn, 1996); or as the result of cognition, for example, high level processing in perception or language (Mandler, 1984); or as the object of specific cognitions, such as emotions, dreams, and intentional states (Flanagan, 1992); or by mean of its functions in regard to cognition, such as identifying inputs, learning, elaborating, recruiting contents for activating a goal, retrieving material from memory, decision making, analogy formation between new and stored contents, reflecting upon our own functioning, and providing the self-system information to use in its task of maintaining stability in the face of changing conditions (Baars, 1988, Chapter 10).

4. MEANING AS THE UNDERSTRUCTURE OF COGNITION

The above examples show that consciousness and cognition are related. But they leave us wondering about how this relationship takes place and what it means about the nature of each of these basic constructs. A large body of studies supports the suggestion that meaning is the construct that is likely to provide the missing link. The suggested hypothesis is that meaning is the system that provides the raw material of which the processes and contents of cognition are made.

Why meaning? There are several reasons for this claim. One reason is the contents of meaning. It includes all contents that play a role in cognition. Secondly, the contents of meaning are not only static but are manifested also as processes. Thirdly, it is not bound exclusively to the verbal mode of expression. Fourth, the use of meaning is flexible and adaptable to a variety of applications. Fifth, there is a large body of studies that shows its contribution to cognition and close involvement in the functioning of cognition. Sixth, meaning is elated also to personality, attitudes, emotions that also affect cognition (see below ***the manifestations of meaning in cognition, personality and emotions***).

The relations between meaning and cognition could be described as similar to the relations between chemistry and physics on the one hand and physiology on the other hand. While chemistry and physics can be applied for representing the material and processes of physiology, it is evident that physiology functions according to rules and formats that are physiological rather than those characteristic of chemistry and physic. Similarly, meaning may be used for representing the materials and processes of cognition, but cognition functions according to rules and formats that are purely cognitive and cannot be derived from the rules that characterize meaning.

Meaning provides the contents and processes for the implementation of the acts and operations on the level of cognition. Hence, meaning can be viewed as the infrastructure of cognition, whereas cognition can be viewed as the level on which meaning becomes manifest and activated. The activation is made possible through the materials provided by the meaning system, but it reflects the dynamics of cognition rather than of meaning (Kreitler, 2009, 2017).

This hypothesis is expected to shed light also on the relation of consciousness to cognition and on the nature of states of consciousness.

5. WHAT IS MEANING?

5.1. The Basic Assumptions and the Data

The definition of meaning in the framework of the meaning system has been reached by means of empirical studies, based on the following assumptions. First, meaning is communicable because most of the meanings we know and use have been learned from others, while there may be also genetically hereditarily transmitted and self-constructed meanings. Second, meaning includes an interpersonally-shared part which plays a major role in communication, and a personal-subjective part which is used mainly for expressing personal private meanings. Third, meaning may be expressed in a great variety of means and forms, both verbally and through non-verbal means, such as movements, drawings and images. Fourth, meaning is a complex multi-dimensional or multi-layered construct because it develops over long periods of time, often irregularly in a cumulative manner under the impact of diverse not necessarily compatible forces (Kreitler, 2022a, Chapters 2 &3; 2022b, Chapters 1&2).

These assumptions have enabled constructing methods for collecting and coding data in regard to meaning that have led to a new definition of meaning and a new methodology for its assessment. The data consisted of responses of several thousands of subjects differing in age (2 to over 90 years), gender, education and cultural background who were requested to communicate the interpersonally-shared and personal meanings of a great variety of verbal and non-verbal stimuli, using any means of expression they considered adequate. Analysis of the meaning communications showed that they presented a rich variety of contents in a great variety of forms, organized in terms of semantic molecules, each of which included two units of contents, one in need of meaning, which we called "the referent" the other called "meaning value" providing the meaning, which was organized and conceptualized in terms of five sets of meaning variables.

5.2. The Definition of Meaning

On the basis of the empirical results and theoretical considerations, meaning was defined as a referent-centered pattern of meaning values. The referent is the input, the carrier of meaning, which can be anything, such as a word, an object, a situation, an event, or even a whole period, whereas meaning values are cognitive contents assigned to the referent for the purpose of expressing or communicating its meaning. For example, if the referent is 'Computer', responses such as 'a machine' or 'can be programmed' or 'includes a keyboard' are three different meaning values. The referent and the meaning value together form a meaning unit (e.g., Computer – a machine). The specific functions of the components of the meaning unit may however change. A cognitive content may be a referent in one meaning unit and a meaning value in another, for example, Computer – has a keyboard; A keyboard – is a part of a computer.

The presented definition underscores the fact that meaning consists of cognitive contents, structured in a specific manner and fulfilling a specific function. The contents express different aspects of meanings; the structuring is expressed in different forms, such as direct or comparative, positive or negative; the specific function is expressing or communicating meaning.

5.3. The Sets of Meaning Variables

The five described sets of meaning variables characterize the cognitive contents in the meaning unit in terms of their contents, structural features and expressive mode.

(a) *Meaning Dimensions*, characterize the contents of the meaning values from the viewpoint of the specific information communicated about the referent, such as the referent's Sensory Qualities (e.g., Roses – red), Locational Qualities (e.g., Paris – in France), Range of Inclusion (e.g., Body - the head, and arms); (b) *Types of Relation*, characterize the immediacy of the relation between the referent and the cognitive contents, for example, attributive (e.g., Summer - warm), comparative (e.g., Spring - warmer than winter), exemplifying instance (e.g., Country - the U.S.); (c) *Forms of Relation*, characterize the formal relation between the referent and the cognitive contents, in terms of its validity (positive or negative; e.g., Car - is not a bicycle), quantification (absolute or partial; Apple - sometimes green), and status (factual, desired or desirable; Law - should be obeyed); (d) *Referent Shifts*, characterize the relation between the referent and the previous referent, for example, the referent may be identical to the former one, its opposite, a part of it or unrelated (e.g., Night – may be replaced by day, or midnight or window); (e) *Forms of Expression*, characterize the forms of expression of the meaning units (e.g., verbal, denotation, graphic) and its directness (e.g., actual gesture or verbal description of gesture). In addition, *Meta-Meaning variables*, characterize the attitude toward the meaning communication that has been assumed by the respondent or is indicated for the recipients (e.g., it is incomplete, it is a quotation, it is a metaphor). (Table 1 presents the full list of meaning variables a-e).

Table 1.
Major Variables of the Meaning System: The Meaning Variables.

MEANING DIMENSIONS[d]		FORMS OF RELATION	
Dim. 1	Contextual Allocation	FR	1 Propositional (1a: Positive; 1b: Negative)
Dim. 2	Range of Inclusion (2a: Sub-classes; 2b: Parts)	FR	2 Partial (2a: Positive; 2b: Negative)
Dim. 3	Function, Purpose & Role	FR	3 Universal (3a: Positive; 3b: Negative)
Dim. 4	Actions & Potentialities for Actions (4a: by referent; 4b: to referent)	FR	4 Conjunctive (4a: Positive; 4b: Negative)
Dim. 5	Manner of Occurrence & Operation	FR	5 Disjunctive (5a: Positive; 5b: Negative)
Dim. 6	Antecedents & Causes	FR	6 Normative (6a: Positive; 6b: Negative)
Dim. 7	Consequences & Results	FR	7 Questioning (7a: Positive; 7b: Negative)
Dim. 8	Domain of Application (8a: as subject; 8b: as object)	FR	8 Desired, wished (8a: Positive; 8b: Negative)
Dim. 9	Material	SHIFTS IN REFERENT[b]	
Dim. 10	Structure	SR	1 Identical
Dim. 11	State & Possible change in it	SR	2 Opposite
Dim. 12	Weight & Mass	SR	3 Partial
Dim. 13	Size & Dimensionality	SR	4 Modified by addition
Dim. 14	Quantity & Mass	SR	5 Previous meaning value
Dim. 15	Locational Qualities	SR	6 Association
Dim. 16	Temporal Qualities	SR	7 Unrelated
Dim. 17	Possessions (17a) & Belongingness (17b)	SR	8 Verbal label

Dim.	18 Development	SR	9 Grammatical variation
Dim.	19 Sensory Qualities[c] (19a: of referent; 19b: by referent)	SR	10 Previous meaning values combined
Dim.	20 Feelings & Emotions (20a: evoked by referent; 20b: felt by referent)	SR	11 Superordinate
Dim.	21 Judgments & Evaluations (21a: about referent; 21b: by referent)	SR	12 Synonym (12a: in original language; 12b: translated in another language; 12c: label in another medium; 12d a different formulation for the same referent on the same level)
Dim.	22 Cognitive Qualities (22a: evoked by referent; 22b: of referent)	SR	13 Replacement by implicit meaning value
TYPES OF RELATION[a]		FORMS OF EXPRESSION	
TR 1	Attributive (1a: Qualities to substance; 1b: Actions to agent)	FE	1 Verbal (1a: Actual enactment; 1b: Verbally described; 1c: Using available materials)
TR 2	Comparative (2a: Similarity; 2b: Difference; 2c: Complementariness; 2d: Relationality	FE	2 Graphic (2a: Actual enactment; 2b: Verbally described; 2c: Using available materials)
TR 3	Exemplifying-Illustrative (3a: Exemplifying instance; 3b: Exemplifying situation; 3c: Exemplifying scene)	FE	3 Motoric (3a: Actual enactment; 3b: Verbally described; 3c: Using available materials)
TR 4	Metaphoric-Symbolic (4a: Interpretation; 4b: Conventional metaphor; 4c: Original metaphor; 4d: Symbol)	FE	4 Sounds & Tones (4a: Actual enactment; 4b: Verbally described; 4c: Using available materials)
		FE	5 Sensory (5a: Actual enactment; 5b: Verbally described; 5c: Using available materials)
		FE	6 Denotative (6a: Actual enactment; 6b: Verbally described; 6c: Using available materials)

		FE	7 Visual media (7a: Actual enactment; 7b: Verbally described; 7c: Using available materials)

Note. The table does not include the meta-meaning variables.

[a] Modes of meaning: Lexical mode: TR1+TR2; Personal mode: TR3+TR4

[b] Close SR: 1+3+9+12 Medium SR: 2+4+5+10+11 Distant SR: 6+7+8+13

[c] This meaning dimension includes a listing of subcategories of the different senses/sensations: [for special purposes they may also be grouped into "external sensations" and "internal sensations"] e.g., color, form, taste, sound, smell, pain, humidity and various internal sensations.

Together the five sets of variables constitute the system of meaning. The list of variables is comprehensive in the sense that it includes many of the variables proposed by other investigators for the assessment of meaning, definitions of meaning and different kinds of meaning in the framework of various disciplines (Kreitler, 2014). These observations may serve as support for the theoretical validity of the meaning system, particularly since the system of meaning was constructed on the basis of an autonomous innovative theoretical and empirical approach rather than by an eclectic method.

5.4. Properties of Meaning as a System

As a system, meaning is characterized in terms of certain properties which play a role in regard to its interaction with other systems in the organism.

(a) Meaning is *an operational-active system*: Its special characteristics become manifest when the meaning assignment process is put into operation.

(b) Meaning is *a complex system*: It consists of a multiplicity of aspects and levels, including five sets of different meaning variables, representing more general or more specific contents, and different clustering possibilities.

(c) Meaning is *an open system*: It interacts with other systems in the organism (e.g., behavior, emotions, cognition), getting inputs from them and providing various outputs to them.

(d) Meaning is *a developing system*: It undergoes development and enrichment through its activation, by acquiring new constituents and new forms of activity, such as new meaning variables, new differentiations within meaning variables, new meaning values within the meaning variables, as well as new expressive modalities that produce new meaning values, new connections among constituents, new organizations of the whole system, and new schemes for meaning generation.

(e) Meaning is *a regressive system*: Its elements may be defined in terms of its other elements that belong to the system.

(f) Meaning is *a self-embedded system*: Each of its parts can act as an anchor point around which the rest of the system is organized, so that its structure is self-enfolding. This implies that the meaning system has a flexible organization that may assume different formats, and that it can be accessed from each of its constituent elements.

(g) Meaning is *a selective system*: It becomes manifest structurally and functionally, often partially, under the impact of selective principles or constraints, some more stable (e.g., culture, family background, personality dispositions, or profession) while others depend on the input and the context, all of which are responsible for the salience or weakness of some meaning variables.

(h) Meaning is a system capable of assuming *different functional formats*: It may appear both in static and dynamic forms. The same variables may be considered in a static format as representing or describing contents or in a different context as representing processes.

(i) Meaning is *a dynamic system*: It may undergo structural-organizational changes which may have functional implications, and are due to internal dynamics or external factors.

5.5. Assessment of Meaning

Meaning assessment consists in analyzing the given materials in terms of the meaning system, regardless of their source, original format, and mode of expression. In assessing meaning the material is first reduced to meaning units, each of which consists of a referent and a meaning value. Then each unit is characterized in terms of the meaning variables defined in the meaning system, namely, it is coded on one meaning dimension, one type of relation, one form of relation, one referent shift and one form of expression. For example, when the referent is "Airplane" and the meaning value is "has a motor", the coding on Meaning Dimensions is range of inclusion, on Types of Relation – attributive, on Forms of Relation - positive, on Referent Shifts - identical to input, and on Forms of Expression - verbal. Summing the codings in each set of meaning variables across all meaning units in the given meaning statement yields a summary representing the frequencies with which each meaning variable has been applied in that meaning statement, which may be a story, a letter, an email, or an art product (Kreitler, 2010).

The initial summaries refer to each of the sets of meaning variables separately, e.g., a summary of frequencies for meaning dimensions and for referent shifts, all of which have identical totals. In addition, there is the overall summary which includes all the meaning variables from the different sets that have appeared in the coding across all the meaning units of the specific meaning statement. The overall summary of frequencies of meaning variables in the given statement of meaning may be called the ‘meaning profile’ of that statement. When the meaning communication has been given in response to the standard set of stimuli of 11 words that constitute the Meaning Test (e.g., street, bicycle), the coding of the meanings produced in this manner yields the individual’s meaning profile. When the meaning profile is based on means of responses given by a group, characterized in some manner (e.g., gender, age, culture, profession) the meaning profile represents the group’s meaning profile (Kreitler, 2022a, Chapters 2 & 3).

6. THE MANIFESTATIONS OF MEANING IN COGNITION, PERSONALITY AND EMOTIONS

Meaning is a major player in the large arenas of cognition, personality, emotions, as well as culture, society, communication, education, health, and art (Kreitler, 2022a, 2022b). A large body of studies showed that there are correspondences between the meaning profiles of individuals and performance in a great variety of domains. In the present context examples will be provided in regard to manifestations of meaning in cognition, personality and emotions.

6.1. The Manifestations of Meaning in the Cognitive Domain

There is a lot of evidence that meaning variables used by an individual in regard to some situation or issue correspond to those that appear in one's meaning profile. For example, if the meaning profile of an individual includes metaphors, it is likely that that individual would use metaphors in one's communications and thinking. Similarly, when the meaning profile includes a meaning dimension like temporal qualities, that individual may be expected to notice more readily perceptual cues relevant for time, recall better items referring to time, have more associations referring to time, and reach faster solutions to problems involving temporal aspects (Arnon & Kreitler, 1984). The same principle of correspondence exists not only in regard to single meaning variables but in regard to whole meaning profiles of tasks.

Determining the meaning profile of a task is based on administering in a study the meaning test and some cognitive tasks to a group of subjects. Comparing the meaning profiles of the subjects who do well on that cognitive task with the meaning profiles of those who do poorly on it provides a list of meaning variables that differ significantly between the two groups. Some of the meaning variables are related to the task positively and some may be related to it negatively. The result is the meaning profile of the specific cognitive task that was used in the study.

Specific meaning profiles of tasks were identified by the described procedure. for example, for spatial navigation, art evaluation, curiosity, planning, creativity, cognitive conservation, problem solving, posing questions, memory, planning, learning to read, learning higher mathematics, interest and intuition (Casakin & Kreitler, 2011; Kreitler, 2022a, Chapter 10; Kreitler & Benbenishty, 2020; Weissler, 1993).

For example, the meaning profile of planning includes the meaning dimensions of action, function, temporal qualities, results, and manner of performance; and the relational variables either or, and both a and b. The meaning profile of creativity includes for example the variables that support the interpersonal mode of meaning (e.g., attributive and comparative types of relation) and the personal-subjective mode of meaning (i.e., the metaphoric-symbolic and the exemplifying-illustrative types of relation) (Kreitler & Kreitler, 1987a).

Meaning profiles for tasks are specific to the tasks to which they correspond. In the case of similar tasks, the meaning profiles may be similar. Thus, the meaning profile of curiosity corresponded to over 10 different tasks assessing curiosity (Kreitler & Kreitler, 1994). Similarly, the meaning profile for problem solving corresponds to some degree to tasks of different kinds of problem solving, such as puzzles, strategic problem solving, or problem solving of formal and logical problems (Kreitler & Kreitler, 1987a; Kreitler, 2022a, Chapter 10).

Thus, having identified a meaning profile of a cognitive act has several applications. First, it provides information about the cognitive processes underlying the cognitive act and supporting it. This enables predicting on the basis of the meaning profile alone whether an individual will be able to perform the cognitive act. The prediction requires comparing the meaning profile of the individual subject with the meaning profile of the cognitive task. The higher the degree of similarity or overlap between the two profiles, the higher the likelihood that the individual would perform well on the task.

Comparing the two meaning profiles also enables identifying the differences, i.e., specifying which meaning variables are included in the meaning profile of the act and are missing in the individual's meaning profile. The missing ones can be trained in a systematic manner so that the individual improves one's ability to perform the task (Kreitler, 2022c).

6.2. The Manifestations of Meaning in the Domain of Personality

It is expected that personality traits will correspond to meaning profiles, first because there are traits in the cognitive domain itself such as creativity, curiosity, imaginativeness and interest in novelty; an secondly, because cognition is a necessary even though insufficient component of common personality traits, such as conformity that requires the grasping of commonalities in behavior of others, or conscientiousness that requires cognition for organizing one's behavior considering accepted standards.

A great number of studies were performed for exploring the interrelations of the meaning system with personality traits. The procedure consisted of administering to the same group of subjects the Meaning Test and one or more standard measures of some personality trait. The meaning variables that differentiated significantly between the high and low scorers on the personality measure or measures of that specific trait were considered as constituting the meaning profile of that personality trait.

A body of research has shown that each of over 300 personality traits was correlated with a specific set of meaning variables (Kreitler, 2022a, Chapter 11; Kreitler & Kreitler, 1990). For example, the meaning profile of extraversion (as assessed by Eysenck's MPI and other measures) included the meaning dimensions sensory qualities of the external environment, actions, quantity and possessions, evoked emotions in others, and shifts in attention to different referents but avoidance of the sensory qualities in regard to one's body, consequences and results, judgments and evaluations and metaphors. This meaning profile reflects the focusing on reality and action while withdrawing from the internal environment that have been found in regard to extraversion by a great number of studies (Kreitler & Kreitler, 1990, pp. 136-143).

Meaning profiles have been identified also in regard to personality charateristics and dispositions other than traits, such as typologies (authoritarianism, anality), defense mechanisms, quality of life, meaningfulness of life, and value orientations (Kreitler, 2011a; Kreitler & Kreitler, 1993, 1997).

The meaning profiles of so many personality traits enabled specifying the features specific for the pattern of meaning variables corresponding to traits. This pattern was used for identifying other meaning profiles as representing traits or not and also enabled validating traits in systematic manner (Kreitler & Kreitler, 1990, 1997) in addition to deepening the insight into the dynamics of traits (Kreitler, 2022a, Chapter 11).

6.3. The Manifestations of Meaning in the Domain of Emotions

The assumption that has inspired the investigation of the meaning profiles of emotions was that the meaning system provides the cognitive foundations for emotions, namely, the cognitive raw materials and processes that are involved in the elicitation, selection and implementation of emotions. For example, a study that dealt with anxiety showed that correlations between the individuals' meaning profiles and scores on seven anxiety scales defined a pattern of meaning variables corresponding to anxiety, with specific features, different from those characterizing the patterns corresponding to personality traits (Kreitler & Kreitler, 1985). The pattern included, for example, low scores on the meaning dimension of action and high scores on the dimension of judgments and evaluations, state, cognitive qualities and the type of relation of metaphor. Another study showed that changing by a training procedure the frequency of the use of the meaning variables in the pattern of anxiety produced predicted changes in the individuals' state anxiety and in their performance on a logical problem solving task (Kreitler & Kreitler, 1987b). Patterns of meaning variables corresponding to fear (Kreitler, 2003), and to anger have also been identified (Kreitler, 2011b), as well as depression, happiness and joy, flow, peace of mind, empathy, humor and alexithymia (Kreitler, 2022a, Chapter. 12) and stress (Kreitler, 2022b, Chapter 4).

6.4. Meaning and Consciousness

Let us now consider and clarify the interrelations between the following major constructs: cognition, meaning and consciousness

The findings reported above are based on the interactive network in which cognition, meaning and the different particular examined kinds of activity are involved. The basic assumption is that meaning provides the contents and processes which are applied in the framework of cognition for the performance of the intended act which may be anything, e.g., cognitive, personality disposition, an emotion (see ***Meaning as the understructure of cognition***). A major implication of this situation is that what occurs with the involvement of cognition is determined to some extent by the inputs flowing in from the meaning level, or in other words, that which cognition can perform depends on what meaning makes possible to perform. However, the necessary materials may not always be accessible or available. The accessibility and availability of contents and processes enabling cognitive activities depend also on the state and dynamics of the meaning system (Kreitler, 2016).

As described above, meaning is a dynamic and active system. At any point in time the system of meaning is in a particular organizational-structural state. This state is defined in terms of the kind and number of meaning variables that are in a focal position and salient at the time, namely, they have an organizational primacy and a functional advantage for elicitation and involvement in different cognitive activities, whereas the other meaning variables are in the background in different states of inactivation (Kreitler, 1999, 2002, 2009; Rotstein, Maimon, & Kreitler, 2013). This assumption is similar by analogy to the tenet that each physical system is characterized at any point in time by a certain degree of temperature which determines for example the rate and extent of physical reactions that take place. Judging by its effects, the state of the cognitive system at any given point in time is what we could call consciousness.

Accordingly, consciousness is considered as the property reflecting the global state of cognition at any given time, in terms of the contents and processes that are potentially available at this given time. The potential availability of the contents a process depends upon the organizational structure of the underlying meaning system. The organizational state of the meaning system is the major determinant of what is called consciousness in regard to cognition at any given time (Kreitler, 1999, 2009, 2012a).

7. STATES OF CONSCIOUSNESS

7.1. States of Consciousness: Definition

Consciousness is in principle a dynamic quality submitted to changes. The changes are reflected on the cognitive level in terms of the prominence and availability of specific contents and processes. The changes are called states of consciousness. The changes represent formally changes in cognition, that are a function of variations in consciousness (Kreitler, 2018a).

7.2. States of Consciousness: Properties

States of consciousness are the changes in cognition that are a function of variations in consciousness. The changes vary in *extent*. Some of the changes are limited in extent, and involve basically the setting of several meaning variables in a focal position of dominance for a given period of time, required for supporting a certain action. Changes of this kind involve what may be called focalization. Other changes may involve large parts of

cognition, and may affect also emotions, personality traits, the perception of reality, the sense of self and behavior, as well as physiological manifestations, such as heart rate.

The changes that correspond to states of consciousness vary in *duration*. Some are brief, lasing seconds or hours, while some last for longer periods (Kreitler, 2006).

The changes vary in their *experiential effects*. The meaning system is mostly in a state that enables it to support all ongoing cognitive activities and adjust to the required changes. This is due, on the one hand, to the stability of the meaning system and, on the other hand, to the similarity in the type of the cognitive tasks in which one is engaged. Therefore, it is mostly unnecessary to consider the consciousness of the cognitive system or become aware of the contributions of the meaning at a particular point in time. Hence, the changes underlying the states of consciousness may be attended by more or less noticeable experiential effects. The latter depend largely on awareness on the part of the individual but not exclusively. Some of the changes are attended by awareness on the part of the individual, while some are not. Awareness may depend on the extent of the changes and the deviation of their effects from the habitual. Some of the changes may be noted by the individuals when they occur but others may be noted only post-factum (e.g., the state of consciousness in sleep or in anesthesia). Some states of consciousness may be noted or experienced by the individuals themselves while others may be noted or identified by eternal observers (e.g., the state of consciousness of intoxication by some drug).

7.3. States of Consciousness: Causes and Antecedents

There are several sets of reasons for changes manifested as states of consciousness. They differ in their origin, extent, and effects.

(a) One major set of reasons is due to the dynamics of the meaning system itself or in response to the needs of the organism in view of externally-induced changes, such as confronting new tasks and massive amounts of new information for example, reorganizing when a mass of new contents has become available, developing structural complexity, complementing a rudimentary or fragmentary view of reality, adjusting to a new set of cognitive tasks due to cultural changes (e.g., migration) or change of occupation (e.g., working place, profession) (Kreitler, 1999; 2022d). These requirements may be dealt with on the functional level without requiring changes in the structure of the cognitive system. But in some cases the change may be so large or critical in terms of amount and significance that it may require structural changes in the cognitive system, such as defining new meaning variables or new clusters of existing meaning variables or new organizations that may be identified as evolutionary changes (Kreitler, 2002; Maimon & Kreitler, 2013).

(b) The set of reasons based on the normal circadian cycle of sleep and wakefulness, with the different regular variations in depth of sleep, dreaming, and high levels of clarity in full wakefulness.

(c) A third set is of a psychological nature. It includes the reasons representing the effects of special emotional and cognitive states of 'going beyond oneself ', such as flow, insight, oceanic feeling, inspiration, or creativity. This set may include also emotional states like ecstasy, and love.

(d) Another set of reasons is due to temporary physiological effects, related to pathological states (e.g., fever, intoxication, temporary neurological conditions, fainting, reduced blood pressure), psychological shock, or external conditions that may affect physiological functioning, such as reduced sensory stimuli, reduced oxygen supply, sleep deprivation, starvation, and extreme temperatures.

(e) A fifth set of reasons is due to the ingestion of drugs mostly for medical objectives, such as drugs intended for treatment of different diseases (e.g., cardiological,

cancer), anesthesia for surgery, for induction of sleep, for relaxation, barbiturates, or analgesics for the reduction of pain.

(f) A sixth set of reasons is due to the medical factor. It is based on cognitive changes attending different diseases or disease states, related for example to neurological diseases or diseases affecting neurological aspects, coronary heart disease (e.g., heart failure), or cancer, diabetes (e.g., fainting, diabetes shock), toxic effects, epilepsy, accidents involving the brain, high fever, infections, or epilepsy (Kreitler, Weissler & Barak, 2013).

(g) A seventh set of reasons is due to psychopathological diseases or states, such as depression, euphoria, anxiety, schizophrenia, psychotic attacks, and other mental disorders as well as mystical experiences and possibly near-death experiences.

(h) An eighth set of reasons is due to ingesting chemical or other substances applied for evoking special experiences, such as psychoactive drugs, alcohol, stimulants, opioids, psychedelics, dissociatives, delirants, LSD, methamphetamines, ecstasy MDMA, opiates etc. Some of the evoked effects are attended by pleasurable experience, some are invigorating, some have sympathomimetic effects, while others are stimulants.

(i) A ninth set of reasons represents different techniques that have been used in different cultures for hundreds of years for inducing experiences attended by changes in consciousness, such as specific bodily postures, repetitive movements, monotonous singing tones, repetition of specific words or syllables, music, dancing, meditation, guided imagery, shamanistic practices etc. (Kreitler, 2012b).

The list of sets of reasons for changes in consciousness responsible for a great number of identified and potential states of consciousness suggests that states of consciousness are an habitual kind of experience for a great number of individuals who may be expected to be familiar with them or at least some of them to different degrees.

7.4. States of Consciousness: Meaning-Based Relations

An important venue for understanding the nature of states of consciousness and for their generation is based on analyzing the states of consciousness in terms of meaning changes.

There are no specific limits in regard to the potential possible changes in the meaning system. Consciousness is a constant feature of cognition, because cognition is always in a specific state. However, there may be different states of consciousness, due to different organizational transformations in meaning. In each state different cognitive contents and processes are available and others that are not available to the same extent. The availability of the contents and processes determines what kind of cognitive acts can be performed on better or poorer levels.

As noted, the changes in consciousness are a function of changes in meaning. Many if not most of the changes in meaning affect the cognitive system and are reflected in it even if cognition is not the major origin of the causes for the changes ut rather physiological changes or external factors (see ***States of consciousness: Causes and antecedents)***.

A great number of studies showed that specific meaning variables are related to specific cognitive acts, supporting the performance of these acts (see ***The manifestations of meaning in the cognitive domain;*** Kreitler, 2022a, chapter 10). However, in order to clarify the role of meaning variables of this kind in regard to states of consciousness it is necessary to clarify the following two issues. First, is it possible to promote specific meaning variables at least temporarily into a focal position in cognition so that they will be applied in performing the intended cognitive acts? Second, in case the promotion of specific meaning variables into a focal position is possible, does it involve a change in consciousness experienced by the individual?

8. FOCALIZATION OF MEANING VARIABLES

The process whereby specific meaning variables are promoted into a focal position constitutes a part of the procedure of training meaning (Kreitler, 2022a, Chapter 13). It is called focalization. The major principles are selecting specific meaning variables, performing the training in regard to each meaning variable separately, basing the training on the active involvement of the trainee. Selecting the meaning variables for a specific training session may be done by examining which meaning variables differentiate significantly between the meaning profiles of subjects who do well on the specific task and those who do not do well on it (Kreitler, 2022c).

The main steps of the training itself are increasing the number of meaning values relating to the specific meaning variable by eliciting meaning values in the desired meaning variable, for example, by using adequate stimuli (e.g., verbal, visual, musical); elaborating the meaning of the meaning variable itself, by assigning to it meanings in term of the different meaning variables in the system of meaning; and applying the trained meaning variable in several cognitive acts, for example, memory, evaluating. Each step is performed in line with standard systematic rules. The training may last from 3 to 10 minutes per meaning variable.

A series of studies was done in order to examine whether it is possible to perform a focalization of specific meaning variables. The promoted meaning variables in the different studies were selected on the basis of previous results of studies about their relation to specific acts. In each case, promoting the meaning variables was accompanied also by administering the cognitive acts of interest, after completing the training of the meaning variables (Kreitler, 1999, 2009, 2013b).

The following studies demonstrate the experimentally achieved results of focalizing specific meaning variables. Three kinds of such studies are described, differing in the extent of the meaning variables involved in the focalization experiment. After each study care was taken to dissipate the effects of the focalization. In regard to each study mentioned in A., B., and C), the psychological effects are specified prior to the citation of the meaning variables that were involved in the focalization.

8.1. A. Examples of Studies in Which Specific Kinds of Meaning Variables Underwent Focalization

Specific kinds refer to meaning variables of one set, such as types of relation or shifts of referent.

(a) Considering complexities and different contextual and circumstantial constraints, and of the impact of situational factors were related to focalizing the complex forms of relation (FR4, FR 5, FR 6, FR 7, FR8, Table 1);

(b) Dynamic-operational thinking, solving fast and well problems involving technical issues and action plans were related to focalizing the meaning dimensions representing dynamic aspects of meaning (mainly functions, action and manner of operation, Dim 3, Dim 4, and Dim 5, Table 1);

(c) Sticking to the facts of reality, good concentration, controlled attention, focusing on the existing or provided information were related to focalizing minimal (close) shifts of referent (SR1, SR3, SR9, SR12, Table 1);

(d) Critical thinking, negating, avoiding were related to focalizing of the negative forms of relation (FR1b, FR2b, FR3b, FR4b, FR5b, FR6b, FR7b, FR8b, Table 1);

(e) Good performance in verbal memory, verbal expression, problem solving of verbally stated problems were related to focalizing the verbal forms of expression (FE1, Table 1);

(f) Good performance with nonverbal materials, creative thinking, metaphorical and symbolic thinking were related to focalizing of the nonverbal forms of expression (FE2, FE3, FE4, FE5, FE6, FE7, Table 1);

(g) The tendencies to "go beyond the information given", shifts of attention, rich associations, creative approach, losing focus were related to focalizing of the distant shifts of referent (SR6, SR7, SR8, SR13, Table 1);

(h) Understanding analogies, constructing comparisons and preferring analogies to other presented forms of presentation were related to focalizing of the comparative types of relation (TR2a, TR2b, Table 1);

(i) Understanding metaphors, generating metaphors, preferring metaphors to other presented forms of presentation were related to focalizing of the metaphoric and symbolic types of relation (TRb, TRc, TRd, Table 1);

(j) Expressing oneself by means of examples of different kinds, preferring illustrative instances to other forms of presentation were related to focalizing of the exemplifying-illustrative types o relation (TR3a, TR3b, TR3c, Table 1).

8.2. B. Examples of Studies in Which Clusters of Meaning Variables Were Submitted to Focalization

Clusters refer to meaning variables of more than one set, for example, types of relation of two kinds (e.g., TR3 and TR4) or forms of relation and meaning dimensions.

(a) ***The personal-subjective and the interpersonally-shared modes of meaning***: Several studies were devoted to promoting the exemplifying-illustrative and metaphoric-symbolic types of relation (TR3, TR4, Table 1) that were conceptualized as supporting the personal-subjective mode of meaning. The results were compared with those in another set of studies that were devoted to promoting the attributive and the comparative types of relation (TR1, TR2, Table 1) that were conceptualized as supporting the interpersonally-shared mode of meaning. The findings showed that focalizing the personal-subjective mode of meaning as compared to focalizing the interpersonally-shared mode of meaning resulted in better performance on visual memory tasks, identifying embedded figures, completing incomplete gestalts, recounting of bizarre experiences, scores of fluency, flexibility and originality in creativity tests, identifying correctly facial emotional expressions and the production of more associations in general and of personal associations in particular, and preferring expressionist and symbolic art to representative or abstract art (Kreitler & Kreitler, 1972, 1983). But on the other hand, the focalization of the personal-subjective mode of meaning resulted in longer reaction time, worse performance on judging the validity of logical syllogisms, lower scores on evaluating and comparing the size of circles and of lines, and of reality testing and emotional control in the Rorschach test (Kreitler, 2013a; Kreitler, Kreitler, & Wanounou, 1988).

(b) ***The concrete and abstract approaches***. Focalization of the concrete approach was attained by promoting five meaning dimensions referring to sensory aspects (i.e., Dim. 19a sensory qualities, Dim. 13 size and dimensions, Dim. 9 material, Dim. 11 state, Dim. 15 locational qualities); the illustrative type of relation (TR3a examples of items, TR3b situations, and TR 3c dynamic scenes); simple forms of relation (Forms of relation FR1, FR3); close shifts of referent (referent shifts 1,3,9,12 as defined in Table 1). Another set of studies dealt with the focalization of meaning variables supporting the abstract approach by promoting the following five meaning dimensions supporting abstract thinking (i.e., Dim. 1

contextual allocation, Dim. 2a subtypes, Dim. 6 causes, Dim. 7 results, Dim. 21a judgments and evaluations); the comparative type of relation (TR 2a similarity, TR 2b difference, TR 2c complementariness); complex forms of relation (FR4 conjunctive, FR5 disjunctive); shifting to distant referents (shifts of referent 6,7,8,13 as defined in Table 1). The findings showed that focalizing the meaning variables supporting the concrete approach concrete as compared to focalizing the meaning variables supporting the abstract approach resulted in made more mistakes in switching on the sorting test, lower scores on the logical reasoning test, provision of fewer general labels for photos, and better scores for memory of visually presented items and in describing oneself in terms of references to actional-dynamic and sensory aspects (Kreitler, 2017).

8.3. C. Examples of Studies in Which Meaning Variables Corresponding to Personality Tendencies Were Submitted to Focalization

The following examples refer to focalization of meaning variables forming specific meaning profiles corresponding to specific personality tendencies. One study was devoted to focalizing several of the meaning variables supporting *humor* (Kreitler, 2018c). The major meaning variables that underwent focalization included the meaning dimensions contextual allocation, function, manner of operation, structure, who is involved in the situation, what is affected, feelings and emotions, cognitive qualities; both the personal-subjective and the interpersonally-shared modes of meaning; and small shifts of referents (Dim. 1, Dim. 3, Dim. 5, Dim. 10, Dim. 8a, Dim. 8b, Dim. 20, Dim. 22; TR1+2, TR3+4, SR 1+3+9+12, Table 1).

Another study was devoted to focalizing several of the meaning variables supporting control of empathy (Kreitler, 2018b). The main meaning variables that underwent focalization were the active agents in a situation, cognitions, judgments and evaluations, emotions evoked in oneself or observed in others, sensory qualities, sensory experiences, examples and illustrations, metaphors, declarative statements, positive statements, nonverbal expressions mostly gestural, and inputs close to those presented (Dim. 8a, Dim. 22, Dim. 21, Dim. 20a, Dim. 20b, Dim. 19a, Dim. 19b, TR3, TR4c, TR1a, FR1a+FR2a+FR3a, FE3, SR1+3+9+12, Table 1) (Kreitler, 2018b).

8.4. States of Consciousness and Focalizations

The three types of focalization studies showed that focalization of meaning variables is possible and produces the expected results of the predicted changes in the performance of the cognitive acts. These results enable proceeding into the second above outlined phase, which was examining whether focalization involves a change in consciousness experienced by the individual. This crucial issue was examined by analyzing the responses subjects provided to the following questions included in a questionnaire administered to all subjects following their participation in a focalization study. The questions were: Following the study in which you have participated, did you experience anything unusual or some change (a) in your thinking in general? (b) in the way you looked at things or how things seemed to you? (c) in the way you felt about yourself? The alternative responses were ‘yes’, ‘no’ or ‘not sure’. The questions were administered on a voluntary basis. Support was offered when requested or necessary.

The questionnaire was administered after 9 studies, which included five randomly selected studies of the focalization studies involving specific meaning variables, after the two studies in which the modes of meaning and of concrete and abstract approaches (involving focalization of clusters) and after the study of empathy (involving the focalization of the variables of a meaning profile). The findings were very clear-cut: 61%

of the responses given to any of the three questions (a-c) following the focalization studies of clusters or meaning profiles indicated experiencing some change or something unusual following participation in the study. Further interviewing in some cases showed that the change was relatively weak but noticeable. The reported experiences referred mostly to thinking in general, to perception of reality, to fling oneself, and in some cases to emotions or moods. Notably, in no case no similar responses were given after participating in the focalization studies of specific meaning variables.

The conclusion supported by the reported finding is that focalization of meaning variables may be attended by changes in experiencing that could be considered as representing a potential for states of consciousness. The change in experiencing occurs only after medium or large scale changes in meaning variables and not after changes in a small or minimal number of meaning variables. The reason is probably that changes in a small or minimal number of meaning variables are habitual and individuals have a chance to get accustomed to them so that even when they are detected they do not evoke any particular experience. Notably, a similar observation was made in regard to deviations from reality that were experienced as such mainly when they were of at least a medium or large degree but not when they were small or minimal (Kreitler, 2018a, 2022a, 2022e).

9. SOME GENERAL CONCLUSIONS

The chapter focused on the following three major constructs: meaning, cognition and consciousness. They were discussed from different points of view which highlighted their interrelations, and the resulting interactions. The discussion showed that they form a network in which each serves a particular role and benefits from the reciprocal functioning with the other constructs. Meaning provides the contents and processes for the activities of cognition, whereby consciousness represents the overall state of cognition as powered by the contributions of meaning. All three constructs are in a dynamic state to different degrees, dependent functionally on each other. Cognition deals with the applications, meaning – with the provision of the materials, and consciousness represents the situation as a whole. As such consciousness has the possibility to check which actions are possible, evaluate those that are activated and identify those that may be performed or are required to be performed. As noted, specific actions may benefit from the availability of particular contents and functions of cognition.

The dynamism of these three constructs is reflected on the level of activities and in addition on the level of development. All three constructs are involved not only in changes in the limited arena of functioning but also in transformations in a larger more encompassing sense. Cognition is involved in acquiring new schemes and forms of activity in the cognitive arena proper but also in regard to other domains, including personality traits and dispositions, emotions, attitudes, values, behaviors, and physiology. Meaning is involved in acquiring new meaning values in existing meaning variables, forming new meaning variables and generating new clusters of meaning. Consciousness in its turn is involved in promoting new possibilities of actions in all domains – cognition and others - checking the possibilities, given the limitations of cognition and the potentialities provided by meaning.

This is the point at which states of consciousness acquire a special importance. The states of consciousness are the means that connect consciousness with the individual, allowing him/her to evaluate the possibilities of acting or responding in view of the requirements of the situation, thus enabling the promotion of necessary and possible focalization. States of consciousness become the tool for control by applying awareness.

The possibilities of focalization are in principle unlimited, and are restricted only by knowledge and motivation of the individual. Focalizations may be applied in regard to the evocation and control of positive or negative emotions, stress, flow, creativity, empathy problem-solving, memory, concentration, relaxation, and peace of mind – just to cite a few examples. Having learned the procedure of focalization, one may activate it in order to produce the selected action or state of mind. It is evident that the transformational changes in meaning are a powerful factor with a broad range of effects in human functioning and behavior and well-being. When they are activated in a self-generated manner they are likely to broaden appreciably the level of activity and the freedom of action of human beings.

Acquiring the procedure of self-generated focalizations would constitute a serious progress in the self-control of human beings who could tune themselves to produce the optimal state of consciousness for the task at hand.

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AUTHOR INFORMATION

Full name: Shulamith Kreitler
Institutional affiliation: Shool of Psychological Sciences, Tel-Aviv universty
Institutional address: Ramat Aviv, Tel-Aviv, Israel 69978
Short biographical sketch: In Tel-Aviv University since 1962, Professor of psychology at Tel-Aviv University. Ph.D. Summa cum Laude from the University of Bern, Switzerland in psychology, psychopathology and philosophy. Professor at Princeton University (1968-9), Harvard University (1974-6) and at Yale University (1980-82, 1985-1987), and Senior Researcher at the Interdisciplinary Center for Research in Mathematical and Experimental Psychology in Buenos Aires (1980) and at the Educational Testing Service in Princeton. At present she is an Emeritus Professor at Tel-Aviv University and serves as head of the Psychooncology Research Center at the Sheba Medical Center, Tel-Hashomer. Major research contributions have focused on cognitive psychology and its roles in diverse domains, including problem solving, creativity, reasoning, decision making, artistic production, behavior, mental and physical health. Major innovations have focused on two theories with broad applications which are known as the theory of meaning, which provides the understructure for knowledge production and dynamics, and the theory of cognitive orientation, which provides the understructure for the generation and change of behavior and physical disorders. Published over 250 articles in scientific journals, and 22 books about meaning (most recently The Spheres of Meaning and The Construct of Meaning), psychology of the arts, creativity, personality and is at present preparing a book about the psychological risk factors for physical and psychopathological disorders.

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