

Days of Applied Psychology 2024  
BOOK OF ABSTRACTS



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DAYS OF APPLIED PSYCHOLOGY 2024

# BOOK OF ABSTRACTS

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Department of Psychology  
Faculty of Philosophy  
University of Niš, Serbia

**20th International Conference  
DAYS OF APPLIED PSYCHOLOGY 2024**

**BOOK OF ABSTRACTS**

Niš, Serbia | 27th–28th September 2024

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## **KEYNOTE LECTURES**



# **PSYCHEDELIC THERAPY FOR MENTAL HEALTH DISORDERS – PROMISES AND CHALLENGES**

David Erritzøe

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Abstract. The talk gives an overview of what is happening in recent years in psychedelic medicine and what all the fuzz – or even hype - is about. More specifically the following aspects will be introduced: What compounds are in focus, how do we use them in trials/clinic, for what (mental health) indications, and how strong do early clinical data look? Furthermore, some data will be shown on possible neuromechanistic actions behind their effects. Lastly, some of the challenges that the field has on the path towards large-scale implementation of this novel treatment paradigms will be discussed - hopefully via discussion with others in the room.

Keywords: psychedelics, psychedelic medicine, mental health, psychological disorders

# THE ROLE OF GUT MICROBIOTA AND HIPPOCAMPAL PLASTICITY IN ALZHEIMER'S DISEASE: LESSONS FROM FAECAL MICROBIOTA TRANSPLANTATION STUDIES

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*Abstract.* Cognitive impairment in the form of dementia and Alzheimer's disease is currently a leading cause of disability worldwide. The hippocampus is responsible for learning, memory and regulation of emotion and it is also one of the first and primary brain regions to be affected in Alzheimer's. Alzheimer's patients display a decrease in diversity of microbiota, which is recognised as a potential hallmark of healthy ageing. Thus, determining associations or causal roles between gut microbiota, hippocampal function and Alzheimer's disease is becoming an area of interest. To determine if a gut microbiota signature in Alzheimer's played a role in cognitive symptoms and neuroplasticity, we transplanted faecal microbiota from Alzheimer's patients into microbiota-depleted young adult rats. We found impairments in behaviours reliant on adult hippocampal neurogenesis, an essential process for certain memory functions and mood, resulting from Alzheimer's patient transplants. The severity of impairments correlated with clinical cognitive scores in donor patients. Discrete changes in the rat caecal and hippocampal metabolome were also evident. Results suggest that symptoms of Alzheimer's can be transferred to a healthy young organism via the gut microbiota and thus that symptoms of the disease may be, in part, caused by alterations in microbiota in the gastrointestinal tract. Hippocampal neurogenesis is highlighted as a converging central cellular process regulating systemic circulatory and gut-mediated factors in Alzheimer's. Exposure to lifestyle factors throughout the lifespan such as stress, diet, and exercise influence hippocampal neurogenesis and cognitive function. Like the hippocampus, the gut microbiota are very responsive to lifestyle and environmental factors and so could be a peripheral route through which these factors impact upon changes in hippocampal function and behaviour to contribute to the development of Alzheimer's.

*Keywords:* microbiota-gut-brain axis, Alzheimer's disease, microbiota transplant, hippocampal neurogenesis

# THE CORROSIVE ROLE OF NEOLIBERAL IDEOLOGY IN SOCIO-ECOLOGICAL CRISES: EXEMPLARY FINDINGS FROM APPLIED PSYCHOLOGY

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*Abstract.* The political-economic theory of neoliberalism has evolved into the hegemonic ideology of capitalism, penetrating all areas of life. The concepts of political, social, and phantasmatic logics describe how neoliberal ideology manifests across societal institutions, work organizations, and psychological processes. A three-dimensional conceptualization underlies the neoliberal ideological beliefs questionnaire (NLI). The three dimensions operationalize (with 8 items each) internalized political-economic attitudes concerning: a) individualism (self-reliance and self-interest); b) competitiveness (need to dominate and outperform); and c) instrumentality (economic value reflecting human worth). Extending preceding research, exemplary findings from three studies relating to social and ecological crises are presented. The first two are quantitative. Study 1 examines relationships between NLI, system justification, climate-protective behavior, and estimated carbon footprint in a convenience sample ( $N = 344$ ), controlling for demographic variables and environmental constructs. Neoliberal ideologies are confirmed as system-justifying attitudes detrimental to climate-protective behavior, which, along with income, determines the carbon footprint. Study 2 reports relationships between NLI and moral disengagement and political activism regarding refugees and migration issues in an independent sample ( $N = 276$ ). Controlling for demographic variables, moral disengagement mediates a negative relationship between NLI and prosocial engagement (distributing materials, signing petitions, discussions, protests). Study 3 qualitatively investigates internalization of neoliberal ideologies among economically disadvantaged groups. Interviews with ( $N = 9$ ) individuals in precarious life situations and long-term unemployment confirm that some respondents aggressively support neoliberal ideologies of individualism, instrumentality and competitiveness that contradict their social interests. This includes individualistic explanations for poverty and success, rejection of government redistribution, and internalized inferiority. Reduction of cognitive dissonance, epistemic and existential motives (order, security) reinforce this self-marginalizing consciousness. In conclusion, psychodynamic functions and implications of neoliberal ideologies in sustaining and escalating current social and ecological crises are discussed and avenues for future research explored.

*Keywords:* Neoliberal Ideology, System Justification, Environmental Behavior, Prosocial Engagement, Refugees, Precarity





# **WORKSHOP**



## **EXPLORE HOW YOUR NARCISSISTIC TRAITS CAN POSITIVELY AFFECT YOUR LIFE**

Dora Popova Uzunovski

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*Abstract.* This workshop offers an interactive exploration of narcissistic traits, providing insights into their impact on personal and professional relationships. The workshop aims to foster self-awareness, enabling participants to identify their own narcissistic tendencies and understand their origins. Through Alexander Loven's theory of narcissism, self-assessment tools, and group discussions, attendees will gain insights into the spectrum of narcissism, distinguishing between healthy self-regard and detrimental narcissism. We will use the Narcissistic Personality Inventory (NPI) by Raskin & Hall for measuring the narcissistic traits and gestalt techniques (empty chair), through which every attendee can assess his or her narcissistic personality and explore it. By examining the effect of these traits on decision-making, communication, and behavior, participants will improve strategies to mitigate negative effects, enhancing their emotional intelligence and interpersonal effectiveness. These strategies involve developing a stronger connection with oneself and engaging in clear self-reflection on how to manage and control narcissistic behavior as part of their self-image, rather than the self. This workshop will last approximately one hour and will provide a clearer picture of the distinction between narcissism as a characteristic trait and toxic narcissism as a disorder. Participants will also have the opportunity to explore their narcissistic traits, enabling them to consider how to utilize them positively (e.g., for professional self-promotion, enhancing self-confidence in social situations, and fostering body positivity).

*Keywords:* narcissistic traits, self-image, influence.



## **ROUND TABLE**



## **PUBLISH AND FLOURISH: NAVIGATING THE WORLD OF ACADEMIC PUBLISHING JOURNALS**

Dora Popović<sup>1</sup>, Petar Čolović<sup>2</sup>, Vladimir Hedrih<sup>3</sup>, & Mirta Blažev<sup>4</sup>

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<sup>3</sup> Editor-in-Chief of Psihologija journal, Serbia

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*Abstract.* The roundtable „Publish and Flourish: Navigating the world of academic publishing journals“ serves as a platform for exchanging information between the editorial teams of scientific journals and the academic community. Three local journals in the field of psychology will present their work, discuss the challenges they face and outline their plans for the upcoming period. The discussion moderator will then introduce selected topics related to the publishing process in psychology, on which journal editorial teams will share their insights. In the final part of the roundtable, participants will have the opportunity to ask specific questions of interest. This roundtable will provide attendees with a deeper understanding of the publishing process in local scientific journals, facilitate information exchange among journal editorial teams and offer insights into the needs and priorities of potential collaborators—authors, reviewers and future editorial members. Special emphasis will be placed on engaging young researchers to successfully navigate the challenging yet rewarding world of academic publishing.

*Keywords:* scientific journals, publishing, dissemination





## **POSTER SESSION**



# EFFECTS OF EXPRESSIVE WRITING AND MEDITATION ON TEST ANXIETY: EVIDENCE FROM CLASSROOM AND AN ONLINE EXPERIMENT

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*Abstract.* Test anxiety, the fear and wariness over underperformance in evaluative situations, negatively impacts students' psychophysical health and wellbeing. To help mitigate ruminative thoughts and anxiety, interventions like expressive writing and meditation are often recommended. While expressive writing involves freely writing about feelings and experiences associated with a stress-inducing situation, meditation focuses on breathing to achieve a state of relaxation and mindfulness. However, recent literature challenges the efficacy of expressive writing and meditation, as the effects on students' academic performance and anxious feelings vary across different populations and treatment periods. This study aims to further investigate the effectiveness of these interventions, while considering underexplored individual characteristics like emotional expressiveness and suppression in a real exam and an online experiment. The first study involved 49 psychology students. Participants went through 5 minutes of control period in weeks 1 and 3, expressive writing in week 2, and meditation in week 4. After each intervention, they took a graded quiz and rated their anxiety (on a three-item scale) and quiz difficulty level. It should be noted that only 24 students stayed through the final week of the experiment and completed all treatments. Results show that ambivalence over emotional expressiveness (AEQ),  $r(48) = .38, p = .003$ , and emotional suppression (ERQ–Expressive Suppression facet),  $r(48) = .27, p = .03$ , positively correlate with the baseline test anxiety levels (TAI short scale). Students did not experience significant changes in their anxiety level after engaging in expressive writing ( $t(23) = -0.50, p = .69$ ) and meditation ( $t(23) = 0.97, p = .17$ ) compared to the control period. Self-perceived quiz difficulty significantly moderated students' anxiety level ( $p < .001$ ) while neither emotional suppression ( $p = .18$ ) nor ambivalence over emotional expressiveness ( $p = .82$ ) had the same significant effects. The second study was a randomized experiment conducted online on Prolific.org. 183 participants were recruited and randomly allocated to either expressive writing ( $n = 55$ ), meditation ( $n = 64$ ) or control reading ( $n = 64$ ). Test anxiety was assessed at three different timepoints: pre treatment/control, post treatment/control and post-quiz. Both meditation,  $F(2, 126) = 39.08, p < .001$ , and expressive writing,  $F(2, 108) = 45.75, p < .001$ , showed significant effect on the level of test anxiety over time. However, there were no significant differences between groups ( $p = .65$ ) and no significant group by time interactions ( $p = .38$ ); only time reported a significant reduction on test anxiety outcome ( $p < .001$ ). Consistent with study one, these results were moderated by students' perceptions of how difficult the test was ( $p = .002$ ), but not by their level of emotional suppression or expressiveness ( $ps > .10$ ). In conclusion, the present

study joins recent studies in questioning the effects of expressive writing and meditation, especially short-period ones in the education contexts. Meanwhile, emotional suppression and expressiveness' effects on test anxiety are inconclusive and require further investigation. Moving forward, we plan replicate study one on another class and recruit more participants for the online study once additional funding is secured.

*Keywords:* Test Anxiety, Emotional Suppression, Emotional Regulation, Expressive Writing, Meditation

# ON THE HISTORY OF MORAL PSYCHOLOGY: INTUITION AND EMOTION AS THE ULTIMATE COMPASS?

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*Abstract.* In his seminal 1751 work *An Enquiry Concerning the Principles of Morals*, the philosopher David Hume offered a descriptive account of human morality. Arguing that morality was determined by feelings, he defined the moral sciences as the study of “whatever mental action or quality gives to a spectator the pleasing sentiment of approbation”. The study of moral psychology has progressed immensely since then, and unfortunately Hume’s *Enquiry* is now often studied as moral philosophy rather than genuine psychology. Nevertheless, modern research retains the *Enquiry*’s central question: How and why do people make the moral judgments that they do? In this paper, we first explore the various theories of moral psychology that have been developed over the past few centuries, such as Piaget and Kohlberg’s stages of moral developments, Bandura’s social cognitive learning theory and Jonathan Haidt’s social intuitionist model, before outlining the reasons for their rise - and fall - in popularity. Ultimately, we show that modern theories have unexpectedly converged on a Humean model of moral psychology, where we attempt to explain moral judgments and behavior by appealing to innate emotional reactions and intuitions rather than rational reasoning.

*Keywords:* Moral psychology, Social Intuitionist model, Humean model

## THE NARCISSISTIC EXPERIENCE OF FRUSTRATION

Predrag Vojvodić & Vesna Gojković

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*Abstract.* Narcissism presents in two forms: grandiose and vulnerable. Grandiose narcissism expresses itself as grandiosity and dominance, through explicit aggression. Vulnerable narcissism manifests through negative affect, feelings of inadequacy, and self-victimization. The common core of both forms of narcissism is antagonism, which manifests itself differently in times of frustration. Grandiose narcissism tends to externalize frustration, while vulnerable narcissism tends to internalize frustration. Different presentations of narcissistic dysfunction may be triggered by different types of frustrating stimuli. The aim of our research was to discover whether grandiose narcissism (Rivalry, Admiration) and vulnerable narcissism predict different types of frustration. 250 Serbian women ( $M_{age}=47.58$ ,  $SD_{age}=15.17$ ) and 50 Serbian men ( $M_{age}=47.42$ ,  $SD_{age}=17.15$ ) completed online questionnaires: the Frustration Discomfort Scale (Discomfort Intolerance  $\alpha=.83$ ; Entitlement  $\alpha=.83$ ; Emotional Intolerance  $\alpha=.74$ ; Achievement  $\alpha=.85$ ), the Narcissistic Admiration and Rivalry Questionnaire (Admiration  $\alpha=.83$ ; Rivalry  $\alpha=.69$ ), and the Narcissistic Vulnerability Scale ( $\alpha=.77$ ). Four multiple regression analyses were conducted. The predictors were admiration, rivalry, and vulnerable narcissism. The criteria were four dimensions of frustration intolerance. Emotional Intolerance (EI) ( $R=.51$ ,  $R^2=.25$ ,  $F(3,296)=35.09$ ,  $p<.01$ ), Entitlement (E) ( $R=.51$ ,  $R^2=.25$ ,  $F(3,296)=34.65$ ,  $p<.01$ ) and Achievement (A) ( $R=.42$ ,  $R^2=.17$ ,  $F(3,296)=21.58$ ;  $p<.01$ ) were significantly predicted by vulnerable narcissism (EI:  $\beta=.48$ ,  $p<.01$ ; E:  $\beta=.35$ ,  $p<.01$ ; A:  $\beta=.30$ ,  $p<.01$ ) and admiration (EI:  $\beta=.19$ ,  $p<.01$ ; E:  $\beta=.24$ ,  $p<.01$ ; A:  $\beta=.31$ ,  $p<.01$ ). Discomfort intolerance ( $R=.40$ ;  $R^2=.15$ ,  $F(3,296)=19.25$ ,  $p<.01$ ) was significantly predicted only by vulnerable narcissism ( $\beta=.33$ ,  $p<.01$ ). Thus, our study suggests that the experience of frustration within a narcissistic framework is dominantly shaped by vulnerable narcissism, followed by admiration. In this context, vulnerable narcissism, even though hidden, may escalate into explicit antagonism. However, intolerance for difficulties and inconveniences triggers the frustration experience in vulnerable narcissism, but not in grandiose narcissism. It appears that sensitivity to frustration exposes the unseen, harmful nature of vulnerable narcissism.

*Keywords:* frustration discomfort, grandiose narcissism, admiration, rivalry, vulnerable narcissism

# CONTRAST SENSITIVITY AND OCULAR MICROTREMOR IN A MODEL EXPERIMENT TO STUDY THE EFFECT OF CHANGES IN GRAVITY ON VISUAL PERCEPTION<sup>1</sup>

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*Abstract.* Microgravity causes a redistribution of the load between sensory systems towards an increase in the role of the visual system. The visual system is represented by many channels, the main ones being the magno- and parvocellular channels. They differ in sensitivity to contrast and spatial-frequency characteristics of the stimulus. Magnocellular channels are specific to the perception of low, parvocellular channels - high spatial frequencies. Neurons of these channels give rise to the dorsal and ventral cortical pathway. The theory of tremor modulation signal (Lyapunov, 2018) describes the relationship between contrast sensitivity and ocular microtremor (OMT). Therefore, we assumed a change in these parameters in the model experiment. “Dry” immersion (DI) is one of the most effective models of microgravity. DI reproduces three basic effects of weightlessness: physical inactivity, support withdrawal and elimination of the vertical vascular gradient (Tomilovskaya et al., 2019). The volunteers (10 males,  $30.8 \pm 4.6$  years) were selected by a medical commission. Each volunteer underwent DI for 7 days, during which they were immersed in a bath with water the temperature of which was  $33.0 \pm 0.5^\circ\text{C}$ . The surface of the water was covered with a floating waterproof fabric, the area of which was more than 2 times the area of the water surface. The daily routine included 8 h of sleep, 3–4 meals, a medical supervision program and experimental studies. The volunteers could also use their computers and smartphones, to read the books during their free time. Contrast sensitivity was measured using Gabor elements with spatial frequencies ranging from low (0.4 cycles/degree) to high (10.0 cycles/degree). The parameters of OMT (the amplitude and frequency) were recorded using an optical system providing high-frequency video recording (Shoshina et al., 2023). Measurements were taken the day before the immersion (BG), on the 1st, 3rd, 5th, and 7th days of DI (DI1, DI3, DI5, DI7), as well as the next day after its completion (R1). Statistical analysis using the Wilcoxon signed-rank test showed the significance of differences in contrast sensitivity upon the transition from gravity to microgravity conditions (BG and DI3) in the range of low spatial frequencies ( $Z = -2.19$ ,  $p = 0.02$ ) and in the range of high spatial frequencies ( $Z = -2.48$ ,  $p = 0.01$ ). A statistically significant reduction in the OMT amplitude was detected in comparison with the background in DI1 ( $Z = -2.004$ ,  $p = 0.045$ ), DI3 ( $Z = -3.06$ ,  $p = 0.002$ ), DI5 ( $Z = -3.39$ ,  $p = 0.001$ ), and DI7 ( $Z = -3.46$ ,  $p = 0.001$ ). After the completion DI, the values of amplitude returned to background levels ( $Z = -0.285$ ,  $p = 0.77$ ). Thus, under DI conditions, changes in the processes of visual perception are

<sup>1</sup> Supported by Russian Science Foundation (Project No. 22-18-00074).

observed at the subcortical (OMT is controlled by neurons of the brainstem nuclei) and cortical levels. At the cortical level, there is a mismatch between the interaction of the dorsal and ventral systems. Evidence has been obtained that the parameters of visual perception are objective indicators of the functional state when changing gravitational conditions (gravity-microgravity-gravity).

*Keywords:* ocular microtremor, contrast sensitivity, “dry” immersion, microgravity



## STRESS INTENSITY IN MOTHERS OF PREMATURELY BORN CHILDREN

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*Abstract.* Premature birth leads to the abrupt interruption of the development of organs and tissues in the fetus, which can result in significant morbidity or even mortality for the child. Consequently, parents, especially mothers, can face high-intensity stress that can negatively impact their overall health, their relationship with the child, and the functioning of the entire family. The research sample consisted of 369 mothers of prematurely born children most of whom were over 35 years old ( $M=36.98$ ,  $SD=7.17$ ) with most of the children being at the age of 2 ( $M=2.96$ ,  $SD=2.32$ ). The goal of the research was to determine the intensity of stress among the mothers of these children and to identify the need for support. Data on stress intensity was collected using the Parenting Stress Index Short Form PSI/SF scale. The data shows that mothers in this research generally experience a lower level of stress ( $M=19.08$ ,  $SD=6.88$ ). However, a higher level of stress was identified in mothers with a lower socioeconomic status ( $H=8.59$ ,  $df=2$ ,  $p<0.01$ ), also in mothers whose child had a diagnosed developmental disorder as a result of premature birth ( $U=1065$ ;  $p<0,01$ ). A higher level of stress was observed among mothers whose child underwent special treatments ( $U=12205$ ,  $p<0.01$ ); as well as in mothers who emphasized that they need additional support from defectologist ( $H=77.04$ ,  $df=10$ ,  $p=0.01$ ), psychologist ( $H=87.16$ ,  $df=10$ ,  $p<0.01$ ) or combination of both ( $H=123.52$ ;  $df=10$ ;  $p<0.01$ ). This research emphasizes the importance of self-assessment of the need for support, as a crucial step towards identifying vulnerable subgroups within this sample, which can serve as an important guide in the formation of support for the mothers of these children. Timely detection of the need for support can prevent damage to the individual's health and provide the child with the opportunity to reach their maximum developmental potential.

*Keywords:* Stress, premature birth, support

## PERSONALITY TRAITS AND STRESS COPING STRATEGIES

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*Abstract.* Personality traits play an important role in almost all aspects of an individual's life, so the question arises as to whether it is possible to use them to predict coping strategies with stress. Therefore, the aim of the research was to examine whether personality traits (activity, aggression-hostility, impulsive sensation seeking, neuroticism-anxiety, sociability) can predict coping strategies with stress (task-focused coping, emotion-focused coping, avoidance-focused coping). The sample was convenient and consisted of 291 respondents ( $N_{\text{female}} = 72.5\%$ ). The sample consisted of high school students and students, average age 19.19 years ( $SD = 1.37$ ). The ZKPQ questionnaire for measuring basic personality traits and the Coping Inventory for Stressful Situations (CISS) were used to operationalize the mentioned constructs. A significant predictor of task-focused coping was activity ( $\beta = .21, t = 3.08, p = .002$ ), while the model explained 6% of the criterion variance ( $R^2 = .06, F(5,224) = 2.76, p = .019$ ). When it comes to emotion-focused coping, personality traits explained 38% of the variance ( $R^2 = .38, F(5,223) = 27.80, p < .001$ ). Significant predictors were aggression-hostility ( $\beta = .16, t = 2.92, p = .004$ ) and neuroticism-anxiety ( $\beta = .56, t = 10.25, p < .001$ ). Significant predictors of avoidance-focused coping with stress were impulsive sensation seeking ( $\beta = .23, t = 3.06, p = .002$ ) and sociability ( $\beta = .16, t = 2.17, p = .031$ ), while the model explained 10% of the variance criteria ( $R^2 = .10, F(5,224) = 4.73, p < .001$ ). It can be concluded that coping with stress focused on emotions is partly based on personality traits. Understanding this connection empowers individuals to develop coping mechanisms that best suit their unique tendencies. This self-awareness fosters resilience and overall well-being.

*Keywords:* personality traits, stress coping strategies.

**Thematic session**  
**MENTAL HEALTH AND INDIVIDUAL DIFFERENCES**



## DEVELOPMENT OF A TEST FOR LEARNED HELPLESSNESS

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*Abstract.* Learned helplessness is defined as a lack of control over situations, which negatively impacts an individual's emotional, motivational, and cognitive processes, developed through learning. Despite numerous experimental findings, there is a notable absence of psychometric tests to measure this phenomenon. This study aimed to develop a psychological test to assess learned helplessness in humans. Drawing on existing literature, five primary indicators were identified: cognitive, behavioral, emotional, attributional style, and lack of motivation. Seventeen corresponding sub-indicators were also identified, leading to the formulation of five to fifteen questions for each sub-indicator, resulting in a 119-item pilot test. The pilot test was administered to a small sample ( $N=5$ ) primarily to evaluate the clarity of the questions. Subsequently, a larger sample of 51 psychology students (aged 18-34,  $M=19.4$ ) was tested for course credit before their Statistics exam, under the presumption that many students might exhibit learned helplessness in relation to this course. An item analysis was conducted, assessing item endorsement (difficulty), distribution characteristics (discriminability), homogeneity, and reliability. Following this analysis, 35 items were excluded, resulting in a final version with 84 items. Additionally, four sub-indicators were removed due to an insufficient number of remaining items (less than 30% of the original items). The final test demonstrated high reliability (Cronbach's  $\alpha > 0.9$ ), a mean item endorsement of 3.4 (on a 1-6 Likert scale), and acceptable skewness and kurtosis values. Validity was assessed using factor analysis with PCA and varimax rotation, which extracted two factors explaining approximately 50% of the variance in learned helplessness. Given the context of psychology students and their potential learned helplessness related to the Statistics course, it was hypothesized that lower grade expectations in Statistics could serve as a measure of criterion-related validity. However, the correlation between the test scores and this criterion was low (ranging between 0.1 and 0.2). This study represents an initial step in the development of a learned helplessness test. Further research is required to fully interpret the two identified factors and to validate the test across different populations, given its general nature.

*Keywords:* Learned helplessness, psychometric test, item analysis, psychology of learning, psychometrics.

# PRELIMINARY FINDINGS ON MEASUREMENT INVARIANCE OF SHORT AMBIGUITY INTOLERANCE SCALE (SAIS-7) IN GERMAN AND SERBIAN SAMPLES

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*Abstract.* Empirical research didn't lend definite support to the multidimensionality of the ambiguity intolerance (AI) construct. Taking this into account, the Short Ambiguity Intolerance Scale (SAIS-7) was constructed to measure overall AI that is brief but also encompasses a wide range of behaviors that could be described as AI. This questionnaire exist in Serbian, English, Bulgarian, and Greek and it is currently adapted for Russian and Persian languages. The goal of this study was to explore the structure of this scale on a German sample and its' measurement invariance to the Serbian version. The sample in this study is convenient, and the data was collected through an online questionnaire. The link to the questionnaire was shared in Facebook groups, on Reddit and on Instagram. The sample consisted of 200 participants from Serbia (24.5% were male, age ranged from 18 to 72 ( $M_{age} = 32.60$ ;  $SD_{age} = 14.21$ ), and 117 participants from Germany (39.3% were male, age ranged from 16 to 54 ( $M_{age} = 26.97$ ;  $SD_{age} = 7.75$ )). The results of CFA with the proposed one-factor solution conducted by using the DWLS estimator in the Serbian sample showed a satisfactory fit to the data ( $\chi^2(df) = 17.939(11), p = .083$ ; CFI = .988, TLI = .978, SRMR = .055, and RMSEA (90%CI) = .056 (.000-.102)). In the German sample, the proposed model showed a almost perfect fit to data ( $\chi^2(df) = 5.859(11), p = .883$ ; CFI = 1.000, TLI = 1.000, SRMR = .042, and RMSEA (90%CI) = .000 (.000-.047)). The scale showed satisfactory reliability of internal consistency in both, Serbian ( $\alpha = .716$ ) and German sample ( $\alpha = .724$ ). The results indicated configural and metric invariance of SAIS scale on these samples but scalar invariance was not achieved. The results are discussed in light of sample size and possible overfitting in the German sample. Further research on a larger sample, including the examination of additional measures of convergent validity and the nomological network, is needed to confirm the validity of the instrument for use on the German sample.

*Keywords:* SAIS, ambiguity intolerance, measurement invariance

# TEMPERAMENT AND INTERNET ADDICTION AMONG SERBIAN ADOLESCENTS

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*Abstract.* Internet addiction is characterized by excessive or poorly controlled preoccupations, urges, or behaviors regarding computer use and internet access that cause impairment or distress. This study aimed to examine the relationship between temperament type and the level of Internet addiction among adolescent students in Serbia. The sample included 1669 students, aged 11 to 17 ( $M_{\text{age}}=15.09$ ;  $SD=1.75$ ). Temperament type was assessed using the standardized Serbian adolescent version of the Temperament Evaluation of Memphis, Pisa, Paris, and San Diego-Auto (A-TEMPS-A). We used the Internet Addiction Scale (IAS) to determine the degree of Internet addiction. Classification of internet addiction categories was made according to the score obtained on the IAS test, as follows: 0-19 = no signs of internet addiction; 20-39 = low level of internet addiction; 40-69 = moderate level of internet addiction and 70-100 = high level of signs of addiction, i.e., existence of internet addiction. The A-TEMPS-A answers classified each respondent into one of the following five temperament types: depressive, cyclothymic, hyperthymic, irritable, or anxious. The highest percentage of respondents in our study (61%) belonged to the hyperthymic type of temperament; 31% of the respondents had a depressive type of temperament; 5.9% had a cyclothymic temperament; 1.7% had an irritable temperament; and the smallest percentage of respondents (0.4%) had an anxious temperament. The type of temperament was statistically significantly related to the level of signs of internet addiction ( $\chi^2=181.9$ ,  $p<0.001$ ). Respondents without signs of addiction or with a low level of addiction mostly had a hyperthymic type of temperament (79.8% and 60.0%, respectively). Among respondents with a moderate level of addiction, the most represented was the depressive type of temperament (50.1%), which was also the case with respondents with a high level of Internet addiction (57.1%). Multivariate logistic regression analysis for predicting Internet addiction showed that temperament type, as well as age, were statistically significant predictors of Internet addiction. By increasing the number of years by 1 year, the risk of developing Internet addiction decreases by 11.3%. A hyperthymic type of temperament decreases the risk of Internet addiction by 70.9% compared to a depressive type of temperament. The significance of our findings should be emphasized since they may be used by professionals to develop focused interventions and prevent teenage internet addiction.

*Keywords:* adolescents, internet addiction, temperament

# LOCUS OF CONTROL AND BODY ESTEEM AS PREDICTORS OF SOMATIC PROBLEMS

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*Abstract.* The motivation for conducting this research is the lack of research that examines that interrelationships of these concepts. The main objective of this study was to examine whether locus of control and body esteem are statistically significant predictors of somatic problems, in students. The specific objectives were to examine the association between locus of control, body esteem and somatic problems. Also, the specific objectives were to examine whether there were statistically significant gender differences in the expression of locus of control, body esteem and somatic problems. The gender comparison was carried out because of the results of previous studies that indicate differences between male and female people, where a higher level of external locus of control and higher level of somatic problems was found in women. There are conflicting findings of research with regard to gender differences in body - esteem, so we wanted to examine this in our work as well. The research was conducted live during March 2023. The sample was consisted of 108 students (16 male, 92 female), at the Faculty of Philosophy in Niš. The applied instruments are: Roter's IE scale, The Body - Esteem scale for Adolescents and Adults (subscales are: appearance, weight, attribution) and Croatian version of PHQ - 15 somatic problems questionnaire. We used the overall score of The Body - Esteem scale, without the subscales, in order to avoid multicollinearity. The predictor variables are the locus of control and body - esteem, and the criterion variable are somatic problems. There is a positive correlation between the locus of control and somatic problems ( $r = .246$ ). Our model explains 6.6 percent of the variance in somatic problems ( $R^2 = .066$ ). Since the research was conducted on a small sample, we interpret the corrected R square ( $R^2 = .049$ ), that is 4.9 percent of the variance. The model is statistically significant ( $F = 3.728, p = .027, p < .05$ ). A significant predictor of somatic problems is locus of control ( $\beta = .245, p = .011, p < .05$ ). Female respondents ( $M = 13.21$ ) have a more external locus of control than male respondents ( $M = 9.00$ ) and this difference is statistically significant ( $p = .000$ ). There are no statistically significant differences in the body - esteem with respect to gender ( $p = .627, p > .05$ ). It has been found that female respondents have a higher level of somatic problems ( $M = 10.30$ ) than male respondents ( $M = 5.88$ ), and this difference is statistically significant ( $p = .002, p < .05$ ). The disadvantage of this research paper is the unequal sample of male and female respondents. Also, if we repeat the research, we would include the age of the respondents. In this case, the variables age and gender would be controlled in a hierarchical regression analysis. The advantage of this research work is the planning of workshops with students for whom the results have shown that they exhibit a higher level of somatic problems (female students).

*Keywords:* locus of control, body esteem, somatic problems, students.



# EXPLORING THE RELATIONSHIP BETWEEN DANCE, RESILIENCE, GENDER AND MENTAL HEALTH: A STUDY ON THE MEDIATING ROLE OF SUBJECTIVE WELL-BEING

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*Abstract.* Examining the relationship between dance and mental health is young field of research and previous studies show a certain contradiction, while very few examine resilience in that relationship. This study hypothesized that subjective well-being (SWB) mediates the effect of resilience on anxiety, with dance and gender moderating this mediation. The sample consisted of 201 respondents (75% women) aged 17 to 52, with an average age of 27. Regarding dancing, 55% did not dance, 18% danced recreationally, and 27% danced professionally. We used subscale Anxiety from the Depression Anxiety Stress Scale (DASS-21), the Brief Resilience Scale (BRS) and the Short Scale of Subjective Well-Being (KSB). The moderated mediation model was significant ( $F(4,188) = 17.19, p = .00, R^2 = .27$ ). The results showed a significant direct negative effect of resilience on anxiety ( $b = -.19, t = -3.35, p = .00$ ) and an indirect effect through SWB ( $b = -.12, 95\%$ , Boot CI : [LL =  $-.26$ , UL =  $-.01$ ]), indicating partial mediation. Furthermore, the results show statistically significant interactions of resilience and dance ( $b = -.26, p = .04$ ), resilience and gender ( $b = -.36, p = .05$ ) (borderline significance), dance and gender ( $b = -1.50, p = .01$ ), as well as statistically significant interaction between resilience, dance and gender ( $b = .38, p = .01$ ). Interactions show that the highest positive effect on SWB has increasing resilience among female dancers. The initial premise suggested that resilience negatively affects anxiety through an increase in SWB that amplifies this effect, which was confirmed by the results. However, there is no statistically significant effect of resilience on anxiety in male professional dancers ( $b = .01, 95\%$ , Boot CI : [LL =  $-.17$ , UL =  $.09$ ]). Professional dancers showed higher resilience levels than recreational and non-dancers, which is in support of previous research. An explanation can be found by referring to The Broaden and Build Theory, which is associated with dance in the literature, and explains that positive emotions drive the development of thoughts, activities, and relationships, fostering growth, resilience, and better health. Personal resources, which can result from this process, contribute to the development of more adaptive coping strategies, enhancing problem-solving abilities and improving responses to stressful situations. A proposed direction for further research would involve a comprehensive investigation into gender differences among professional dancers, focusing on their experiences of distress and the various factors influencing these experiences.

*Keywords:* dance, gender, well-being, resilience, anxiety

# THE APPLE DOESN'T FALL FAR FROM THE TREE: PARENTAL PERSONALITY FACTORS BEHIND CHILDREN'S DISINHIBITION, OPPOSITIONALITY, HYPERACTIVITY, AND ATTENTION CONCENTRATION

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*Abstract.* The aim of this study was to explore the associations between uninhibition, oppositionality, hyperactivity and attention concentration in children with special education needs. Our research question was: which parental characteristics mediate or moderate the relationship between uninhibition and behaviour regulation. We used a package of questionnaires, the first part of which was completed by the children and the second part by their parents. Children's behavioural manifestations were assessed by using the parent version of the Conners Questionnaire for Children's Behaviour and the Children's Interests and Preferences Questionnaire. Well-being were assessed by using the Well-being Index, resilience by using the Child and Youth Resilience Scale and the Parent Resilience Questionnaire, finally, emotion regulation using the Child Cognitive Emotion Regulation Questionnaire and the abbreviated adult version. We hypothesized that higher levels of parent's well-being and resilience will attenuate the relationship between children's uninhibition and oppositionality, hyperactivity and attention concentration problems, and thus act as protective factors. It was hypothesized as well that high levels of parent's and children's maladaptive emotion regulation will act as a mediating factor between children's uninhibition and the outcome variables, as oppositionality, hyperactivity and lower attention concentration. The study involved children ( $N = 52$ ), who's intellectual abilities were in the normal range, aged 9-14 years, and lived with special education needs, and a parent, who was living in the same household. Their compliance with the inclusion criteria was controlled by the professional documentations of children as well. We used mediation and moderation models to test the hypotheses. The research findings highlighted the particular importance of parental characteristics, as we had previously hypothesized that parental personality factors could be seen as moderating and mediating factors. These findings support the need to pay particular attention to the family and parental background of the individual in the diagnosis and treatment of these disorders.

*Keywords:* behaviour, well-being, resilience, emotion regulation, parent

**Thematic Session**  
**EDUCATIONAL PSYCHOLOGY, ATTACHMENT,**  
**RELATIONSHIPS AND DEVELOPMENTAL PSYCHOLOGY**



# EXPLAINING THE LINKS BETWEEN ROMANTIC ATTACHMENT AND FERTILITY VIA MATING BEHAVIOR AND REPRODUCTIVE MOTIVATION

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*Abstract.* Attachment theory describes different ways in which people relate to others: secure, anxious and avoidant. Evolutionary theory predicts secure attachment as adaptive and the goal of this research is to examine the links between attachment and evolutionary fitness (operationalized as fertility – number of children) including the potential moderating role of participants' sex. Assuming that associations between attachment and fertility can be explained via mating behavior (relationship length, number of partners) and reproductive motivation, our hypothesis was that positive associations between secure attachment and fertility can be partly attributed to longer romantic relationships and higher reproductive motivation. The sample was collected using the snowball technique. 953 participants (56.3% males;  $M_{age} = 34.70$ ;  $SD = 11.93$ ) from Serbia participated. Attachment style was measured via short form of the Experiences in Close Relationships Inventory (Lafontaine et al., 2016), mating and reproductive behaviors using Childbearing motivations scale (Guedes et al., 2015) and analyzed using regression analysis in SPSS and RStudio. Results were also analyzed via network analysis in JASP, because it is very useful in examining direct and indirect links between the variables. Associations between variables were estimated via partial correlations and EBICglasso was used as a penalization method. Regression analysis suggested that males with low avoidance have more children than the ones with highly expressed avoidance. The opposite stands for females - where high avoidance is associated with more children. Network analysis confirmed the negative association between avoidant attachment and number of children in men. Furthermore, avoidance in men was indirectly negatively related to number of children via lower parental motivation and shorter relationship duration. Regarding women, higher anxiety was only indirectly negatively associated with number of children via shorter romantic relationships. Conversely, high avoidance in women had no direct or indirect associations with number of children. To sum up, insecure attachment style is negatively associated with fertility as a crucial aspect of evolutionary fitness, especially avoidant attachment in men - confirming the theory that secure attachment style is adaptive even in contemporary humans.

*Keywords:* attachment styles, reproductive motivation, fertility, mating

# EFFECTIVENESS OF DIGITAL INTERVENTIONS IN IMPROVING COUPLE RELATIONSHIPS: A SYSTEMATIC REVIEW<sup>2</sup>

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*Abstract.* In recent years, digital interventions have emerged as a promising avenue for improving couple relationships, offering a convenient and accessible alternative to traditional in-person therapy. This systematic review aimed to provide an overview of research studies on digital couple interventions and to answer the research question of their effectiveness. On August 7, 2024, a comprehensive search was conducted in the Scopus and Web of Science databases. Titles, abstracts, and keywords were reviewed to identify relevant studies. The inclusion criteria were randomized controlled trials that involved digital interventions targeting couples or individuals in relationships and measured relationship satisfaction. Only studies published in English were considered. Studies were excluded if they lacked a control group or involved in-person interventions. From a total of 144 search results, 53 duplicates were identified and excluded. Of the remaining studies, 15 randomized controlled trials met the inclusion criteria. The findings show that digital interventions significantly improve relationship satisfaction, with effect sizes ranging from small to large. Couples experienced greater satisfaction compared to control groups, and these improvements were often sustained at follow-up. However, more randomized controlled trials with a variety of online interventions are needed to conclusively determine their effectiveness. The current findings are limited by the fact that several eligible studies utilized the same digital intervention, which may not fully capture the potential range of available online interventions.

*Keywords:* couples, digital interventions, effectiveness, relationship satisfaction, systematic review

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# EMOTIONAL EXHAUSTION AMONG TEACHERS IN THE REPUBLIC OF SRPSKA: A TYPOLOGICAL ASSESSMENT OF PREVALENCE THROUGH LATENT CLASS ANALYSIS

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*Abstract.* Empirical data from many countries, including economically advanced ones, indicate a concerning decline in interest in teaching professions, occurring alongside a dramatic drop in perceived societal status. Teaching is recognized as a profession associated with significant and continuous stress, leading to burnout and consequent job changes. Our study aimed to determine the prevalence of emotional exhaustion, a core constituent of burnout, among teachers in the Republic of Srpska using a typological approach. The sample consisted of 809 elementary and secondary school teachers (77.5% female, average age  $M = 42.8$  years, average length of service  $M = 15.5$  years). Participants were administered a battery of self-assessment instruments online, which included four items frequently measuring emotional exhaustion. As expected, factor analysis on these items revealed essential unidimensionality ( $\lambda_s > .80$ , ECV = .92, ordinal hierarchical  $\omega = .90$ ). Nevertheless, we employed latent class analysis using the R package polCA to recover a latent typological structure and estimate the prevalence of burnout. Based on a combination of substantive and statistical criteria, a final model was defined, consisting of four classes in ordinal relation. One class could be distinctly identified as the emotionally exhausted (16.6% of the sample), while the largest class (41.0%) could be defined as the pre-exhausted. These two classes were significantly different from each other and from the other two classes in terms of perceived stress levels, job (dis)satisfaction, inability to balance work and family obligations, and consideration of job change (all  $ps < .001$ ). Emotional exhaustion scores correlated significantly with years of service ( $r = .10$ ,  $p < .01$ ) and were reported higher by women ( $d = 0.29$ ,  $p < .01$ ). We discuss the results in the context of the state of the teaching profession in the region and the need to integrate typological and dimensional approaches to gain a fuller understanding of the investigated phenomena.

*Keywords:* burnout, emotional exhaustion, teachers, job satisfaction, latent class analysis

## **EXTENDED TENURE IN SCHOOL LEADERSHIP: ARE THERE ONLY BENEFITS?**

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*Abstract.* The school principal is a pivotal figure in enhancing student achievement (Beatriz et al., 2008; Hallinger, 2011; Robinson et al., 2008), second only to teachers (Leithwood et al., 2008). Therefore, the tenure length of a principal is of significant importance. Research suggests that a tenure of 5 to 7 years is optimal for implementing innovations and realizing their effects (Fullan, 2001). Additional studies indicate that frequent principal turnover negatively impacts teacher retention and student performance (Bartanen et al., 2019). Despite the clear benefits of long-term principalship, the potential drawbacks must also be considered. This paper presents a case study of an elementary school in Serbia that had the same principal for 21 years. This long tenure became a defining feature of the school, associated with its overall quality (Baucal & Pavlović Babić, 2016). The aim of this study is to examine the school's functioning during the first year after the resignation of its long-standing principal. Data for the case study were gathered through school documentation, participant observation and 20 interviews with current school leadership and teachers. The collected data is analyzed using thematic analysis within the theoretical framework of Cultural-Historical Activity Theory. The analysis combined a top-down approach (from theoretically defined aspects of the activity system to data) and a bottom-up approach - from patterns in the data where the empirical content of the aspects of the theoretical model was identified. The arrival of the acting principal, first, and then his actions, which were perceived as acting in the interest of the individual, not the school, produced system instability and contradictions, which are seen as the "motivating force of change and development" (Engeström, 1999). Reorganization within the system meant, first of all, awareness of the contradiction, and then the organization and joint action of the collective in order to resolve the contradiction. The election of a new principal whose actions are in line with the previously established goal/purpose of the system/school led to balancing the system. However, although the new school principal shares the school's mission and vision, he is not the former principal, i.e. he has a different/is just establishing work practice, thus leading to new tensions within and between elements of the system. The study contributes to the discourse on the role of school principals within the educational system by providing an in-depth look at the transition period following a long-term principal's departure. By examining both the benefits and potential challenges of extended principal tenure, this research offers valuable insights into the impact of leadership stability on



school performance and school community dynamics. The findings highlight the complexities of leadership continuity, offering evidence-based recommendations for educational policy and practice.

*Keywords:* principal turnover; case study; cultural-historical activity theory

## MENTALIZING CAPACITY AS A PREDICTOR OF GENERAL PSYCHOLOGICAL DISTRESS IN ADOLESCENTS

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*Abstract.* Mentalizing is the imaginative mental activity of an individual by which he/she interprets his/her own or others' behavior based on intentional mental states such as needs, intentions, motives, desires, reasons, etc. The aim of this paper was to find out whether hypermentalizing and hypomentalizing are predictors of general psychological distress in high school adolescents. The sample included 314 students from the High School of Culinary Arts and Tourism in Vrnjacka Banja, Serbia, aged 14 to 19 ( $M=16.53$ ,  $SD=1.10$ ). Hypermentalizing and hypomentalizing were measured by RFQ-8 (Reflective function questionnaire; Fonagy et al, 2016), which was previously translated in Serbian. Within RFQ-8, hypermentalizing is referred to certainty about the estimation of mental states, while hypomentalizing is referred to uncertainty about that estimation. The overall score of the Serbian language version of the DASS-42 was used as a marker of general psychological distress (Depression, Anxiety and Stress Scale; Lovibond and Lovibond, 1993). Socio-demographic features – gender, age, father's and mother's education – were examined using a questionnaire created for this research. Regression analysis was used as a method. The results showed that the prediction model was significant and the predictors explained 28% of the variance of general psychological distress (adj.  $R^2=0.28$ ,  $p<0.01$ ). As expected, hypomentalizing ( $\beta=0.41$ ;  $p<0.01$ ) and gender ( $\beta=0.12$ ;  $p<0.05$ ) were significant predictors of general psychological distress with a positive sign. These findings indicated that when in adolescents hypomentalizing was increasing, their general psychological distress was also increasing, and that girls had more general psychological distress than boys. Hypermentalizing was a significant predictor with a negative sign ( $\beta=-0.12$ ;  $p<0.01$ ). This finding showed that when certainty about estimation of mental states was increasing, general psychological distress was decreasing. It can be concluded that it is desirable to improve the capacity for mentalizing of adolescents in order to reduce their general psychological distress.

*Keywords:* adolescents, mentalizing, general psychological distress

**Thematic Session**  
**PERCEPTION**



# THE CHANGES OF THE PERCEPTION OF THE SLOPE OF THE LINE IN THE CONTEXT OF THE AMBIGUOUS FIGURE

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*Abstract.* It is known that the interpretation of an ambiguous figure influences the effectiveness of solving cognitive problems (search the differences task, stimulus detection) (Filippova, Moroshkina, 2015; Karpinskaia, Vladykina, 2009). The perception of orientation depends on many environmental factors, but we suggested that the interpretation of the context influence the result. Ten participants (4 men and 5 women, age 19-42) estimated the slope of the line in the context of the ambiguous figure “pyramid-corridor”. All of them used both variants of the interpretation during the experiment: 5 persons had the instruction to see the “pyramid” in the first part, and the “corridor” in the second part, while the other 5 had to see it as a “corridor” in the first part, and after that changed to “pyramid”. The subjects sat in front of the computer screen and they saw the red line in the context of the “pyramid-corridor” image. The line was located in the low right part of the picture near the right diagonal. The diagonal could be interpreted as the angle between the right wall and the floor (corridor version) or the right rib of the pyramid (pyramid version). The participant could change the orientation of the line by pressing the key “left-right”. The task was to make the line parallel to the diagonal. Each person had 50 trials in each part of the experiment (100 trials in total). We compared the true tilt angle of the diagonal and the perceived angle of the line (that was made by the person). The dependent variable was the orientation of the line (angle), and the factor was the interpretation of the ambiguous figure (pyramid or corridor). The true tilt angle of the right diagonal of the image was  $-38^\circ$ . When perceiving the image as a “corridor”, subjects underestimated this angle ( $-33.5^\circ \pm 0.62^\circ$ ,  $t(10) = 24.06$ ,  $p < 0.0001$ ); when perceiving the image as a “pyramid”, subjects overestimated it ( $-41.6^\circ \pm 1.6^\circ$ ,  $t(10) = 7.39$ ,  $p < 0.0001$ ), the values of underestimation and overestimation are different from each other ( $t(10) = 14.22$ ,  $p < 0.0001$ ) (Student’s t-test). The hypothesis about the influence of the interpretation of the ambiguous figure on the perception of the line orientation was confirmed. The results are consistent with the experiments, which demonstrate the role of consciousness and stimulus interpretation in psychophysical tasks. Supported RSF № 22-18-00074

*Keywords:* ambiguous figure, line orientation and slope, perception

# PERCEPTUAL SET IN PRESCHOOL AND PRIMARY SCHOOL CHILDREN BASED ON THE ILLUSIONS OF PONZO AND MULLER-LYER<sup>3</sup>

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*Abstract.* The perceptual set is a mental readiness to perceive stimuli in a particular way based on previous experiences. Since classical studies of Uznadze and Piaget the perceptual set effect of really different pairs of stimuli was shown for adults as well for children. Meanwhile, although children perceive visual illusions, the data about set effects using the illusory stimulus in children are absent. In the presented experimental study on a sample of 26 children ( $6.4 \pm 0.1$ ), the possibility of forming a set effect using the Ponzo (pairs of horizontal segments of equal length surrounded by converging lines) and Muller-Lyer (pairs of horizontal segments of equal length terminated with 'arrowheads' that extend inward or 'arrow tails' that extend outward) illusion was investigated. Pairs of horizontal segments differing by their length were used for comparison. We studied the set of these three types of stimuli on each child. Each of 3 series consists of two stages: set stage and test stage. Set stage consists of 10 pairs of segments (really different, Ponzo, or Muller-Lyer) and the test stage consists of five pairs of equal horizontal segments. All segments were black and were displayed on a white screen. The length of the horizontal segments ranges from 50 to 500 mm, and the thickness of all lines was 1 mm. At the set stage, subjects viewed stimuli which appeared sequentially on the screen each 2 seconds. The equalization method was used in the test stage: the subject was asked to make the segments equal, giving the experimenter verbal instructions to reduce or increase the lower segment. As soon as the subject concluded that the segments became equal, he/she said "stop" and the next stimuli appeared. Despite that initially the presented horizontal segments were equal, children often misalign their lengths due to perceptual set effect. The difference between the lengths of the segments was recorded. The effect of the perceptual set was evaluated by the average value of five control pairs discrepancy. A series of stimuli with really different segments and a series of Muller-Lyer illusion showed a significant effect of the perceptual set ( $-0.54 \pm 1.21\%$ ,  $W(26) = -2$ ,  $p = 0.02$  and  $-0.43 \pm 0.78\%$ ,  $W(26) = -75$ ,  $p = 0.01$ , respectively) while the Ponzo illusion did not cause the perceptual set ( $-0.003 \pm 1.59\%$ ,  $W(26) = -2$ ,  $0.05 \leq p$ ). Thus, we reveal the illusory perceptual set in preschool and primary school children. Since there is evidence that the Ponzo and Muller-Lyer illusions may have differences in the mechanisms of formation, this may be reflected in the perceptual set effect based on different types of illusions.

Keywords: geometric illusions, perceptual set effect, children

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# EYE MOVEMENTS IN EVALUATING HORIZONTAL SEGMENTS OF THE MÜLLER-LYER AND PONZO ILLUSIONS<sup>4</sup>

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*Abstract.* The Müller-Lyer and Ponzo illusions are similar: both illusions contain two horizontal equal segments, but the upper segment appears longer to us. However, they may have different mechanisms of formation that are reflected at the oculomotor level. The Müller-Lyer illusion is thought to be caused by a low-level filtering mechanism in the visual system, whereas the Ponzo illusion may be related to high-level mechanisms for maintaining size constancy. The aim of our experiment was to investigate eye movements accompanying task solving in the context of the Ponzo and Müller-Lyer illusions. Forty participants ( $24.7 \pm 4.56$ ) took part in the study, and three conditions were presented while viewing the stimuli: two parallel lines with vertical serifs creating a right angle of  $90^\circ$ , (control condition); the Müller-Lyer illusion with an acute angle of  $23^\circ$  and an obtuse angle of  $157^\circ$  with respect to the center line; and the Ponzo illusion with vertical lines that converged and framed the central sans-serif segments. For each condition, there were three variants: segments of equal length; the top segment was 15% longer; the bottom segment was 15% longer. Each participant viewed 100 stimuli divided into 6 blocks. Stimuli were presented for 1 s in a randomized order. Participants were tasked to rate the segments as equal or different by pressing the appropriate key on the joystick (i.e., there were a total of 2 response options); there were no additional viewing instructions. Eye movements were recorded using an EyeLink 1000 device, and the correctness of responses was determined. Depending of the normality of distributions checked by d'Agostini-Pearson test, the significance of differences was estimated by Friedman criterion or one-factor ANOVA with repeated measures. Further, only the perception of stimuli with equal central segments will be considered. The results showed that subjects were more likely to make errors when estimating segments in the Ponzo and Müller-Lyer illusion compared to the control condition ( $p < 0.0001$ ). This indicates an illusory effect. The duration of fixation in the control condition was significantly different from the duration of fixation on stimuli with Müller-Lyer illusions ( $p = 0.0097$ ) and Ponzo illusions ( $p < 0.0001$ ). The saccade durations in the control condition were also significantly different from those in the Müller-Lyer ( $p < 0.0001$ ) and Ponzo ( $p = 0.0276$ ) conditions. Moreover, less prolonged saccades were in the Ponzo illusion condition. Saccade amplitude differed ( $p = 0.0346$ ) between the control and Müller-Lyer conditions. Heat maps of eye movements also revealed differences between the three types of stimuli. The results support the hypotheses about the various mechanisms of the formation of Ponzo and Müller-Lyer illusions.

*Keywords:* Eye movements, Geometric illusions, Visual perception

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<sup>4</sup> Funding for this work: Grant of the Russian Academy of Sciences "Psychological mechanisms of perception-action mismatch during task solving under conditions of visual illusions" No. 22-18-00074.

## FEATURES OF CONTRAST SENSITIVITY AND OCULAR MICROTREMOR IN SCHIZOPHRENIA SPECTRUM DISORDERS: A PILOT STUDY<sup>5</sup>

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*Abstract.* Schizophrenia, schizoaffective and schizotypal disorders are combined into a group of schizophrenia spectrum disorders. Differential diagnosis of these nosology's with similar symptoms requires a subtle approach. Visual perception impairment in schizophrenia has been repeatedly demonstrated, but there are no data on such impairments in schizotypal and schizoaffective disorders. Changes in visual perception indicators are potential markers of mental disorders, objective markers of differential diagnosis, including disorders with similar symptoms. Visual contrast sensitivity is a fundamental characteristic of perception. It reflects the processes of both low-level and high-level information processing (Shoshina et al., 2021). According to the tremor modulation signal theory (Lyapunov, 2018), visual contrast sensitivity is interconnected with the characteristics of ocular microtremor (OMT). OMT has a frequency of about 87 Hz and an amplitude of 20-40 arc/s. The purpose of the study is to study the characteristics of contrast sensitivity and OMT in schizophrenia spectrum disorders. The study involved 20 healthy controls (28.8(9.7) years), 20 patients with schizophrenia (27.7(5.0) years; illness duration 7.0(3.4), 13 patients with schizoaffective disorder (25.5(6.3) years; illness duration 10.9(8.9) years) and 18 patients with schizotypal disorder (24.0(9.8) years; illness duration 7.61(7.9) years). All patients received 2nd or 3rd generation antipsychotics. The chlorpromazine equivalent was in schizophrenia 412(195), schizotypal disorder - 469(199) and schizoaffective disorder - 480(186). Contrast sensitivity was determined by presenting Gabor elements with a spatial frequency of 0.2 to 10.0 cycles/deg. OMT was recorded using high-speed video recording using an original optical system (Shoshina et al., 2023). A decrease in contrast sensitivity in the range of medium and high spatial frequencies was found for all groups of patients compared to the control. The average OMT data indicates a decrease in frequency and an increase in OMT amplitude in schizophrenia. In schizotypal and schizoaffective disorders, only the average OMT amplitude was higher than in the control. Analysis of the OMT spectrum indicates an increase in OMT amplitude across the entire frequency spectrum in schizophrenia, in schizoaffective disorder - in the range from 40 Hz; in patients with schizotypal disorder - in the range of up to 50 Hz and from 100 Hz. We take into account that drugs used in the treatment of schizophrenia can affect the characteristics of OMT. However, it should be noted that all groups of patients received treatment. The values of the chlorpromazine coefficient for different groups did not differ. Nevertheless, we cannot claim that the observed effects are due to the disease and not the drugs. We evaluate changes

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in contrast sensitivity as evidence of a mismatch in the interaction of large-scale neural networks - dorsal and ventral pathways of information transmission to the prefrontal cortex. The OMT is controlled by nuclei embedded in the reticular formation of the brainstem. Therefore, we consider the observed characteristics of the OMT as evidence of changes in the activity of the reticular formation of the brainstem. The OMT parameters may possibly serve as potential markers for the differential diagnosis of diseases with similar symptoms.

*Keywords:* contrast sensitivity, ocular microtremor, schizophrenia, schizoaffective disorder, schizotypal disorder.

# DO THE MÜLLER-LYER AND PONZO ILLUSIONS HAVE THE SAME OR DIFFERENT MECHANISMS? AN ERP RESEARCH<sup>6</sup>

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*Abstract.* Although geometric illusions of size, such as Müller-Lyer and Ponzo illusions, have a long history of research, the question of their mechanisms still remains not answered. At the same time, studies, especially neuroimaging, where two or more geometric illusions are used as stimuli are quite rare. The objective of our study was to analyze the electrophysiological correlates of the perception of Müller-Lyer and Ponzo illusions. 29 volunteers (13 women, 22,1 y.o.) participated in the study. The stimuli were images of the Müller-Lyer and Ponzo illusions, as well as an image with segments of equal length bounded by vertical lines (control condition), presented for 1000 ms in random order. The participant was to answer by pressing one of two joystick buttons whether the two horizontal lines in each image are equal or different in length. EEG was recorded using BrainVision amplifier with 64 ActiChamp active electrodes. The percentage of correct answers for the control condition was significantly higher than for both illusions. The illusions did not differ significantly from each other in the number of correct answers. The amplitude of the N2 component in F1, F3, FC1, FC3 was significantly higher in responses to the Ponzo illusion compared to the Müller-Lyer illusion ( $p < 0.0001$ ). In FC3, the N2 amplitude in the control condition was also greater than in responses to the Müller-Lyer illusion ( $p < 0.05$ ). The anterior N2 component is associated with the process of perceptual comparison of stimuli or their elements: greater N2 amplitude is caused by more different stimuli or stimulus elements. Our results may then reflect differences in the mechanisms of these illusions at the perceptual level. The absence of significant differences in the participants' behavioral responses to the illusions may be a result of the correction of these differences by high-level processes – interpretation, attitude, and others.

*Keywords:* Müller-Lyer and Ponzo illusions, event-related potentials, high-level processes

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## OBJECTIVE CHARACTERISTICS OF COGNITIVE FATIGUE: OCULAR MICROTREMOR AND CONTRAST SENSITIVITY

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*Abstract.* Cognitive fatigue is a well-known state experienced by many individuals. It can be defined as a psychophysiological condition characterized by a decrease in cognitive performance and an increased perception of fatigue. Of particular importance is research into fatigue caused by working long hours in challenging conditions, where maintaining attention and alertness is critical to avoid accidents and injuries. Technologies such as eye-tracking, pupillometry, blink registration and electrooculography are increasingly used to objectively assess fatigue. However, there is a gap in research concerning ocular microtremor (OMT) and contrast sensitivity under cognitive fatigue, which is why they became the focus of this study. The absence of such data is primarily due to the technical difficulties of recording ocular microtremor, as modern eye trackers lack the resolution to capture these eye micromovements. Nevertheless, this type of research is important as OMT reflects the involuntary high-frequency impulse activity of the brainstem nerve centers, which are subject to the influence of fatigue. Thus, we hypothesized that ocular microtremor and contrast sensitivity could serve as objective criteria for cognitive fatigue. Participants ( $N = 22$ ; 16 female, 6 male; mean age = 23.81,  $SD = 5.22$ ) performed mental calculations for one hour as a fatigue-inducing task. Ocular microtremor and contrast sensitivity were measured in a non-fatigued state – before the beginning of the experiment and after – in a fatigued state. VAS-F questionnaire and the methods of visual-motor reaction and Landolt rings were utilized as additional metrics. Statistical analysis using the Wilcoxon test showed that in the fatigued state there was a significant decrease in the frequency of OMT in the range of 40-50 Hz as well as significant changes in the mean amplitude calculated for the frequency ranges of 50-60 Hz and 100-110 Hz. Cognitive fatigue was also accompanied by a significant decrease in contrast sensitivity of intermediate spatial frequencies: 1.0 cycle/deg and 2.0 cycle/deg. The results of this study make it possible to consider OMT and contrast sensitivity as potential biomarkers to reliably detect cognitive fatigue, leading to a better understanding of its underlying processes and improving workplace safety and productivity.

*Keywords:* cognitive fatigue, ocular microtremor, contrast sensitivity, vision



**Symposium**  
**A PSYCHOLOGICAL PERSPECTIVE ON INFERTILITY:**  
**EXPLORING CHALLENGES AND SUPPORT SYSTEMS -**  
**INSIDEME PROJECT**



## **A PSYCHOLOGICAL PERSPECTIVE ON INFERTILITY: EXPLORING CHALLENGES AND SUPPORT SYSTEMS - INSIDEME PROJECT<sup>7</sup>**

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*Abstract.* This symposium explores the psychological experiences of women and couples facing infertility, drawing on findings from the InsideMe project. The project utilizes a Self-Determination Theory (SDT) framework to investigate how infertility challenges a woman's sense of well-being and identity. Infertility can threaten basic psychological needs for autonomy, competence, and relatedness, potentially leading to feelings of helplessness, isolation, and a crisis of reproductive identity. The InsideMe project team not only validated instruments for measuring various aspects of identity, but also constructed a groundbreaking tool to specifically assess reproductive identity, a concept gaining traction in scientific research. Social support from partners, family, and friends emerges as a crucial factor. Perceived support buffers the negative effects of infertility, while a lack of support can exacerbate feelings of loneliness and exclusion. The prominence of pro-natalist values, emphasizing childbirth as a central part of womanhood, can further contribute to a reproductive identity crisis. Furthermore, the symposium examines how women cope with the emotional rollercoaster of infertility, including the disappointment of unsuccessful conception attempts. Various coping strategies are identified, such as excluding negative emotions, justifying failures, and maintaining a positive outlook with a focus on future attempts. The project also presents a psychosocial support program designed for couples undergoing IVF treatment. This group-based program equips participants with tools for emotional regulation, navigating social interactions in the context of infertility, and aligning their actions with personal values. By combining cognitive-behavioral techniques with humanistic therapeutic approaches, the program aims to improve emotional well-being and support couples on their journey towards parenthood. In total, this symposium offers a comprehensive perspective on the psychological aspects of infertility, highlighting the challenges faced by individuals and couples, the significance of social support, and the potential benefits of psychosocial interventions.

*Keywords:* infertility, self-determination theory, reproductive identity, social support, psychosocial support.

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## REVISED IDENTITY STYLE INVENTORY (ISI-5): VALIDATION IN SERBIAN EMERGING ADULTS<sup>8</sup>

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*Abstract.* The aim of the study was to validate the Serbian version of the Revised Identity Style Inventory (ISI-5; Berzonsky et al., 2013), a measure developed to assess Berzonsky's identity style model, which refers to the way self-relevant information is cognitively processed. ISI-5 consists of three nine-item scales measuring informational, normative, and diffuse-avoidant identity processing styles. Moreover, ISI-5 also has a nine-item commitment scale. The research sample consisted of 385 emerging adults - mostly undergraduate humanities and social science students from one Serbian University (78.4% female, Mage = 21.60, SDage = 2.73). Given the complex structure of ISI-5, we used Exploratory Structural Equation Modeling (ESEM) with the geomin oblique rotation and WLSMV estimation method in lavaan package in R. We applied ESEM to three scales referring to identity styles following a parent study by Berzonsky et al. The original structure of the ISI-5 (without the commitment scale) fell short of adequate fit (WLSMV  $\chi^2(273) = 813.79$ ,  $p < .001$ ; RMSEA = .073, 90% CI [.068 – .079], SRMR = 0.061, CFI = .895, TLI = .865). After four correlated residuals between item pairs of the same corresponding scales (items 13 and 30, 23 and 32, 10 and 14, 28 and 31) the fit of the ISI-5 was improved (WLSMV  $\chi^2(269) = 652.16$ ,  $p < .001$ ; RMSEA = .062, 90% CI [.056 – .068], SRMR = .054, CFI = .926, TLI = .903). Although based on modification indices, all correlated residuals were justified by similar item content of the respective item pairs. The standardized factor loading ranged from .38 to .85 for the informational style, from .36 to .73 for the normative style, and from .21 to .73 for the diffuse-avoidant style. The Cronbach's alphas for the four scales ranged from .75 to .81. The correlations between the three identity style scales with the commitment scale are significant and in the same direction as those reported in the parent study. Findings replicate the validity of the 27-item three-factor model of ISI-5 which was documented in previous studies. Results of this study suggest that the Serbian version of the ISI-5 is a promising tool for evaluating these identity styles/processing orientations in Serbian emerging adults, which could expand research on identity in this cultural context. Some limitations of ISI-5 in the Serbian context are, however, identified - we found support for a modified model with four correlated residuals. Also, one item loading of diffuse-avoidant style fell below the .30 threshold.

*Keywords:* ISI-5, identity styles, Serbian validation, ESEM, emerging adulthood

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<sup>8</sup> This research was supported by the Science Fund of the Republic of Serbia, 1568, Identity Crisis in Women Facing Infertility: Mixed Methods Approach – InsideMe



# PSYCHOMETRIC PROPERTIES OF THE REPRODUCTIVE IDENTITY QUESTIONNAIRE - IN VITRO FERTILIZATION MODULE (RIQ-IVF) IN A SAMPLE OF WOMEN UNDERGOING IVF<sup>9</sup>

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*Abstract.* Athan defines reproductive identity (RI) as a person's self-definition in the sphere of reproductive experiences. This concept refers to how a person subjectively interprets reproductive events in their life. The Reproductive Identity Questionnaire - In Vitro Fertilization module (RIQ-IVF) is developed based on both theoretical concepts of Athan and qualitative analysis of interviews with women undergoing IVF. It aims to measure the aspects of the reproductive identity of women with difficulty in conceiving a child. RIQ-IVF has two scales - RI Crisis comprised of eight items (sample item, "Since I don't have children, I feel less successful in my role as a woman (compared to women with children)."), and Change/Personal Growth comprised of four items (sample item, "The path of reproduction has been for me the path of a great inner change."). The sample consisted of 159 women undergoing IVF (Mage = 39, SDage = 5.01). The mean number of IVFs was 3.21 (SD = 2.11) although some (N = 47) were undergoing their first procedure. Following the parent study on the psychometric properties of the RIQ-IVF, we used Structural Equation Modeling (ESEM) with geomin oblique rotation and MLR (FIML) estimation method in lavaan in R. The RIQ-IVF two-factor structure did not fit adequately (MLR  $\chi^2$  (43) = 140.58,  $p < .001$ ; RMSEA = .119, 90% CI [.099 - .140], SRMR = .041, CFI = .906, TLI = .855). However, following the parent study, we allowed for correlated residuals. The correlated residual with the highest modification index was exactly the one reported as such in the parent study - between items eight "The infertility experience has made me a sad person, there is little that can really cheer me up." and nine "Not being a mother seems to have become my central personality trait." After specifying this correlated residual, the model fit improved (MLR  $\chi^2$  (42) = 79.04,  $p < .001$ ; RMSEA = .074, 90% CI [.051 - .098], SRMR = .031, CFI = .964, TLI = .944). The standardized factor loadings for RI Crisis ranged from .57 to .89, while they ranged from .52 to .87 for the Change factor. The latent correlation between the two factors was .25. The Cronbach's alpha for the RI Crisis scale was .93 while for the Change scale, it was .83. The correlations of RI Crisis ( $r = .64$ ,  $p < .001$ ) and Change ( $r = .17$ ,  $p = .032$ ) with the self-stigma scale of the Infertility Stigma Instrument (ISI-F) are like those reported in the parent study both in terms of size and direction. In conclusion, the RIQ-IVF has a robust two-factor structure with promising psychometric properties. Based on the study's findings we can encourage its use and refinement in future research.

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<sup>9</sup> This research was supported by the Science Fund of the Republic of Serbia, 1568, Identity Crisis in Women Facing Infertility: Mixed Methods Approach - InsideMe

*Keywords:* reproductive identity, in vitro fertilization, questionnaire, RIQ-IVF, ESEM

**A PROPOSED STUDY PROTOCOL: EXPERIENCING INFERTILITY FROM  
A SELF-DETERMINATION <sup>10</sup>THEORY PERSPECTIVE**

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*Abstract.* Self-Determination Theory (SDT) offers a comprehensive framework for understanding human motivation, behavior, and personality. The InsideMe project explores how fertility challenges women's well-being and sense of identity through the lens of SDT. Difficulties in conceiving can compromise the fulfillment of basic psychological needs for autonomy, competence, and relatedness. Infertility often imposes a sense of loss of control over one's body and life trajectory, undermining the need for autonomy. The absence of conception, or the inability to carry a pregnancy to term, can diminish feelings of competence. Additionally, infertility can strain relationships, impacting the need for relatedness. Tensions may arise in various interpersonal relationships, including those with partners, family, friends, and coworkers. Several factors within the social context influence need satisfaction, with support from proximal social contexts (immediate interpersonal relationships) being a key factor. According to SDT, social context affects well-being (WB) through the satisfaction of basic needs. WB in SDT is defined through meaning, self-realization, and in terms of the degree to which a person is fully functioning. The study will adopt this approach. Furthermore, SDT examines the complex—dynamic and reciprocal relationship between basic needs and identity. In the InsideMe project, we hypothesize, in line with many recent studies on identity within the SDT framework, that the level of need satisfaction will affect the sense of identity. The proposed model suggests that social support affects need satisfaction, which in turn has effect on the sense of identity, leading to outcomes in WB. We aim to recruit a sample of women with and without fertility difficulties. The data will be analyzed using structural equation modeling (SEM), with multi-group SEM to test differential relations among the studied variables across the two samples. The theoretical significance of this study lies in testing the postulated relationships between variables. The practical significance of the research is in developing evidence-based recommendations for creating programs to support the well-being of women facing infertility.

*Keywords:* infertility, self-determination theory, social support, well-being, identity

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<sup>10</sup> This research was supported by the Science Fund of the Republic of Serbia, 1568, Identity Crisis in Women Facing Infertility: Mixed Methods Approach – InsideMe

# PROMINENCE OF PRO-NATALIST VALUES AND SOCIAL SUPPORT AS PREDICTORS OF REPRODUCTIVE IDENTITY CRISIS IN WOMEN FACING INFERTILITY<sup>11</sup>

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*Abstract.* Reproductive identity (RI) represents the awareness of one's reproductive potential, reproductive desires, and related activities undertaken to achieve the desired reproductive identity. Some women who wish to become mothers, faced with infertility may experience a reproductive identity crisis. Thus, it is important to understand the factors correlated with RI crisis in women facing infertility. Based on the literature we decided to examine the role of the prominence of pro-natalist values and social support in the prediction of RI crisis in 158 women facing infertility aged 25 to 47 ( $M = 39.08$ ,  $SD = 4.99$ ). Reproductive Identity Crisis subscale from Reproductive Identity Scale, Pro-natalist Values Scale, The Multidimensional Scale of Perceived Social Support, and a questionnaire to obtain socio-demographic variables were used. Results of hierarchical regression analysis indicate that the first model with the level of education, age, and place of living (town/village) as predictors was statistically significant ( $R = .26$ ,  $R^2 = .07$ ,  $F(3, 151) = 3.62$ ,  $p = .015$ ). Only the level of education showed as a significant predictor ( $\beta = -.234$ ,  $p = .004$ ) of the RI crisis. In the second model, pronatalist values and dimensions of social support were added. The model was statistically significant ( $R = .49$ ,  $R^2 = .25$ ,  $F(7, 147) = 6.86$ ,  $p < .001$ ;  $\Delta R^2 = .18$ ,  $\Delta F = 8.73$ ,  $p < .001$ ), and pro-natalist values ( $\beta = .20$ ,  $p = .014$ ), support of family ( $\beta = -.43$ ,  $p = .001$ ), and support of friends ( $\beta = -.20$ ,  $p = .046$ ) were statistically significant predictors. The results indicate that social context is important for a better understanding of the RI crisis of women facing infertility whereby the perception of social support is shown as a protective factor. On the other hand, the prominence of pro-natalist values predicts RI crisis of infertile women.

*Keywords:* reproductive identity crisis, prominence of pro-natalist values, social support, infertility

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<sup>11</sup> This research was supported by the Science Fund of the Republic of Serbia, 1568, Identity Crisis in Women Facing Infertility: Mixed Methods Approach – InsideMe

## WOMEN FACING INFERTILITY: DEALING WITH FAILURE TO CONCEIVE<sup>12</sup>

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*Abstract.* In this qualitative study, we aimed to examine how women facing infertility deal with unsuccessful conception, as manifested by the onset of menstruation or a negative beta hCG test. Fourteen women facing infertility, aged 27 to 42 ( $M = 33.87$ ,  $SD = 5.52$ ), participated in the research. The duration of their fertility issues ranged from 1 year and six months to 11 years. Data were collected using semi-structured interviews. The interviews were conducted one-on-one in person and lasted between 20 to 70 minutes ( $M = 42.21$ ). An inductive thematic analysis was applied to the collected data. Three themes emerged: Exclusion of Negative Emotionality, Justifying Failure, and “Let’s Try Again.” For most women, the failure to conceive triggered a range of negative emotions, which varied in duration and intensity (e.g., disappointment, sadness). However, women dealt with failure to conceive in different ways. Some women tried to exclude negative emotions and stated that the failure did not upset or disappoint them, and that they did not consider it particularly important. Also, women tried to understand why the failure occurred and found various justifications (e.g., excessive activity, lack of rest, not following doctor’s advice, lifting heavy objects). Moreover, some women viewed the failure merely as a temporary setback toward their desired goal, followed by a renewed attempt at conception - “let’s try again.” All identified themes represent strategies for dealing with failure to conceive, aimed at maintaining mental stability and health. The combination of strategies used is unique to each woman facing infertility. Psychological support, if necessary, should be provided in accordance with the individual’s response to failure.

*Keywords:* infertility, failure to conceive, coping strategies, thematic analysis

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<sup>12</sup> This research was supported by the Science Fund of the Republic of Serbia, 1568, Identity Crisis in Women Facing Infertility: Mixed Methods Approach – InsideMe

## PSYCHOSOCIAL SUPPORT PROGRAM FOR COUPLES UNDERGOING IVF – PROJECT INSIDEME<sup>13</sup>

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*Abstract.* The psychosocial support program was developed within the InsideMe project, leveraging previous knowledge, experience, and new scientific insights into the psychological aspects of infertility. It is intended for couples preparing for or undergoing IVF, conducted in groups of 6 to 10 people (3 to 5 couples), though participation is not conditional on both partners attending. The program consists of 5 weekly sessions, each lasting 120 minutes, preferably synchronized with the IVF process, which typically lasts about a month. Identified through research in the InsideMe project, the program's themes are as follows. First Session: Focuses on creating a safe and accepting atmosphere, and discussing participants' reproductive stories. This includes considering different partner reactions to reproductive experiences and their impacts on the relationship. Second Session: Dedicated to emotions, recognizing and understanding them, and establishing better emotional control. This session ends with relaxation through breathing exercises. Third Session: Dedicated to problems with thoughts and ways to resolve these problems through various cognitive defusion techniques. This session ends with a mindfulness exercise. Fourth Session: Addresses interactions with the environment in the context of infertility. It helps participants identify what bothers them most in social interactions related to infertility and determine the best and most effective forms of support. This session includes a brief assertiveness training to enhance potential assertive responses to private and inappropriate comments or questions from others, as well as assertive support seeking. Fifth Session: Discusses personal values and whether participants are living in accordance with them, exploring neglected values, reasons for neglect, and ways to change. It also addresses changes in reproductive identity resulting from their experiences. The session concludes with formulating advice and support messages for couples facing similar issues. This psychosocial support program combines techniques from cognitive-behavioral therapy, primarily Acceptance and Commitment Therapy (ACT), and humanistic therapeutic modalities. These were selected by the program's authors based on therapeutic experience and evidence of their effectiveness from various studies.

*Keywords:* psychosocial support program, infertility, IVF, emotional regulation, social support.

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**Thematic Session**  
**ORGANIZATIONAL AND SOCIAL PSYCHOLOGY**





## **DRAMA AT THE WORKPLACE: PREDICTION OF CERTAIN ASPECTS OF JOB SATISFACTION WITH NEED FOR DRAMA**

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*Abstract.* This study aimed to examine the role of the need for drama in predicting certain aspects of job satisfaction in order to better understand the relationship between these concepts which could be used in the practice field of organizational psychology. The need for drama is a maladaptive personality trait where an individual impulsively manipulates others while perceiving themselves as a victim and it consists of three factors: interpersonal manipulation, impulsive outspokenness, and persistent perceived victimhood. Job satisfaction is a construct that assesses a person's level of satisfaction with their job. The sample consisted of 218 participants, male ( $n=120$ ), female ( $n=96$ ), and unknown ( $n=2$ ), aged between 19 and 62 years ( $M=31.02$ ;  $SD=6.12$ ). The majority of individuals in this sample work in the IT industry ( $n=115$ ; 52.75%). We used the Need for Drama Scale and its dimensions - interpersonal manipulation, impulsive outspokenness, and persistent perceived victimhood, and the Job Satisfaction Scale and its dimensions related to social interactions - contingent rewards, coworkers, supervision, and communication. To test our hypotheses, four hierarchical regression analyses were performed, where sex and age were kept under control. The results showed that the dimension of need for drama - persistent perceived victimhood is a statistically significant predictor for all examined job satisfaction variables. Persistent perceived victimhood explains 12.6% variance of contingent rewards ( $R^2 = .126$ ,  $F(5, 212) = 6.126$ ,  $p < .001$ ), 13% variance of coworkers ( $R^2 = .130$ ,  $F(5, 212) = 6.333$ ,  $p < .001$ ), 10.9% variance of supervision ( $R^2 = .109$ ,  $F(5, 212) = 5.202$ ,  $p < .001$ ), and 12.2% variance of communication ( $R^2 = .122$ ,  $F(5, 212) = 5.910$ ,  $p < .001$ ). We concluded that with the need for drama, we can predict certain aspects of job satisfaction. These insights can contribute to a deeper understanding of the need for drama in a workplace context. They can help improve organizational practices and employee relations by considering candidates' behaviors related to the need for drama during the selection processes or when organizing workshops and team-building activities. This can foster healthier work environments, better employee relations, and enhanced job satisfaction.

*Keywords:* need for drama, persistent perceived victimhood, job satisfaction, workplace

## ASSESSING SOCIAL GENERATIVITY IN SERBIA<sup>14</sup>

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*Abstract.* This study aims to adapt and validate the Social Generativity Scale (SGS), a six-item measure of social generativity within the Serbian context. Utilizing a large, diverse sample of Serbian citizens ( $N = 2306$ ; 67.5% female, 30.2% male, 2.3% identified as other genders; age ranged from 18 to 79 with  $M_{\text{age}} = 28.1$ ,  $SD_{\text{age}} = 12.4$ ), we examined the scale's psychometric properties, including its structural validity and measurement invariance across gender and age groups. Furthermore, we explored the nomological network and relationships between social generativity and relevant demographic, temporal, personality, and prosocial behavior factors. The results of CFA with proposed one factor solution conducted by using Maximum Likelihood (ML) estimation showed good fit to the data ( $\chi^2(df) = 66.454(8)$ ,  $p < .001$ ; CFI = .989, TLI = .980, SRMR = .015, and RMSEA (95%CI) = .056 (.044-.069)). Results indicate that the SGS also a reliable instrument for measuring social generativity in Serbia ( $\alpha = .85$ ;  $\omega = .86$ ). This scale can be used across different age groups, apart from mean comparisons. The scale exhibited scalar measurement invariance across gender, enabling direct comparisons between male and female participants. Our findings are in line with expected relationships of social generativity with certain personality traits, future orientation, and positive well-being. This research contributes to a growing body of knowledge on generativity and offers a foundation for future interventions aimed at enhancing social responsibility and fostering a sense of purpose within Serbian communities.

*Keywords:* Social Generativity Scale, community engagement, measurement invariance, Serbia.

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<sup>14</sup> This study was supported by the Ministry of Science, Technological Development and Innovations of the Republic of Serbia (Contract No. 451-03-66/2024-03). This study is prepared as a part of the project Popularization of science and scientific publications in the sphere of psychology and social policy, conducted at the University of Niš – Faculty of Philosophy (No. 336/1-6-01).

# TRUST IN INSTITUTIONS AND FUTURE TIME ORIENTATION SHAPE SOCIAL GENERATIVITY THROUGH LIFE PROJECT AND SOCIOPOLITICAL CONTROL<sup>15</sup>

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*Abstract.* Social generativity reflects the urge to positively influence society and support the well-being of future generations. Considering its positive implications, identifying the factors that foster Social generativity represents an important aim. Based on literature review, we took into consideration the roles of Future Time Orientation and Trust in Institutions. Also, in a more exploratory manner, we examined the effect of the Sociopolitical Control, a concept related to beliefs about one's capabilities and efficacy in social and political systems. We also explored the role of Life Project, which represents a vision of someone's desired future and the steps he/she takes to make it a reality. More specifically, the aim of our study was to examine the mediating role of a Life Project in the relationship between Future Time Orientation and Social Generativity, and to examine the mediating role of Sociopolitical Control in the relationship between Trust in Institutions and Social Generativity. The following instruments were used: Future Time Orientation Scale (Future Impact  $\alpha = .80$  and Distance  $\alpha = .75$ ), Trust Toward Authorities Scale ( $\alpha = .69$ ), Life Project Scale ( $\alpha = .85$ ), the Sociopolitical Control Scale (Leadership Competence  $\alpha = .65$  and Policy Control  $\alpha = .74$ ), and The Social Generativity Scale ( $\alpha = .85$ ). The sample consisted of 2306 participants, citizens of the Republic of Serbia. Of these, 67.5% were female, 30.2% were male, and the remaining 2.3% identified as other genders. Participants' age ranged from 18 to 79 ( $M = 28.1$ ,  $SD = 12.4$ ). To explore the possible indirect effects, a GLM Mediation module from Jamovi software was used. The results indicated that Future Impact, a subscale of Future time orientation, achieved an indirect effect on Social Generativity through the Life Project variable ( $\beta = .12$ , 95% CI [.13, .021]; direct effect  $\beta = 0.020$ , 95% CI [.09, .019]). Also, the effect of Trust in Institutions on Social Generativity was mediated by the sense of Policy Control ( $\beta = .02$ , 95% CI [.02, .05]; direct effect  $\beta = 0.010$ , 95% CI [.21, .33]), although this effect could be considered rather small. By partially mediating the examined relationship, it is possible that defined life project provides people with a more coherent future perspective, making it easier for them to act in a generative way. Also, the more people trust in authorities, the more they might perceive themselves as having control over the opportunities to change the society through generative acts. The results were further interpreted in accordance with the theoretical background and then the practical implications for sustaining social generativity were discussed.

**Keywords:** Social Generativity, Trust in Institutions, Future orientation, Sociopolitical

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## **AN ANALYSIS OF THE PSYCHOLOGICAL AND EDUCATIONAL DETERMINANTS OF ENTREPRENEURIAL INTENTIONS AMONG STUDENTS FROM BALKAN COUNTRIES**

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*Abstract.* Cultivating the entrepreneurial intention among university students plays an important role for the stable social and mature economic development of any modern community. Entrepreneurial intention is considered as an effective tool to counteract the various problems, as it is directly related to self-employment (Al-Mamary et al. 2020). The concept has been the focus of interest in the academic, educational and as well the wider economic community for many years. A series of research studies are interested in the differences of the conceptual definition, and more recently in the relational effects of numerous educational, psychological and other antecedents that have a significant contribution on the formation and the development of student entrepreneurial spirit. Literature review postulates that entrepreneurial self-efficacy and resilience are of particular relevance as key factors that may affect the pursuit of entrepreneurial initiatives (Bullough et al, 2014; Chen et al. 2015). The aim of this research is to analyze the determining potential of psychological variables (resilience, life satisfaction, self-efficacy of students) and educational variables (stimulating university environment, university learning and external enablers) for development of entrepreneurial intentions among students in the Balkan countries. The study is conducted on a convenient sample of a total of 4488 students from universities in Slovenia ( $n=254$ ), Croatia ( $n=1822$ ), N. Macedonia ( $n=254$ ), Greece ( $n=416$ ) and Bulgaria ( $n=1742$ ). For the purposes of the study, the following instruments were applied: Brief resilience coping scale, Satisfaction with life scale, Entrepreneurial self-efficacy scale, University environment scale, University learning scale, Learning about entrepreneurial support mechanisms and Entrepreneurial intentions scale. The regression analysis explained 23% ( $R^2=.231$ ) of the variance of the variable Entrepreneurial intention and the model was statistically significant ( $F(6,3324)=167.47, p=.00$ ). The results showed that self-efficacy ( $\beta=.358, p<.01$ ), resilience ( $\beta=.11, p<.01$ ) and program learning ( $\beta=.17, p<.01$ ) are statistically significant predictors and have positive relationship with entrepreneurial intentions, while life satisfaction is also statistically significant predictor ( $\beta=-.09, p<.01$ ) but is negatively correlated with entrepreneurial intentions. On the other hand, educational determinant like knowledge about external enablers ( $\beta=-.04, p>.05$ ) and the overall university environment ( $\beta=.00, p>.05$ ) are not found to be statistically significant in predicting the entrepreneurial intention among students.

*Keywords:* entrepreneurial intentions, self-efficacy, resilience, life-satisfaction, Balkan countries

# THE EFFECTIVENESS OF CAREER GUIDANCE PROGRAM ON STUDENT'S CAREER MATURITY: A QUALITATIVE EVALUATION FROM STUDENTS' AND SCHOOL COUNSELORS' PERSPECTIVES

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*Abstract.* Career maturity refers to an individual's readiness and ability to make informed career decisions and to cope with the tasks and challenges that come with making career decisions. It includes various dimensions such as self-awareness, occupational knowledge, decision-making skill and attitudes towards career planning. Research indicates low levels of career maturity among primary and secondary school students, highlighting the need for effective career guidance programs to enable students to make informed decisions about their future educational and career paths, especially during key educational transitions. This study aimed to implement and evaluate a career guidance program using qualitative methods to understand its outcomes regarding students' career maturity. As part of a four-year project by the Croatian Science Foundation, "Free Career Choice," a quasi-experimental intervention was conducted in February and March 2024. The intervention involved 411 eighth-grade primary and 189 fourth-grade secondary school students, with control groups ( $n=254$ ;  $n=139$ ) and was led by school counsellors. Each of four workshops, held over one-hour sessions, focused on one important topic related to career maturity: (1) challenges in making career decisions, (2) familiarization with the world of work, (3) career interests and (4) career adaptability. The workshops were structured into three parts: students first filled out a questionnaire related to the workshop topic on the online platform "Put karijere"; next, they analyzed personalized feedback from their questionnaire results which highlighted their strengths and weaknesses and provided practical advice for improvement related to the workshop topic; and finally, they participated in group activities designed to deepen their understanding of the workshop topic. Post-intervention, focus groups with semi-structured interviews were conducted to gain insights from students and school counsellors. Participants included students from four primary ( $n=24$ ) and four secondary schools ( $n=24$ ), and school counsellors from primary ( $n=5$ ) and secondary schools ( $n=7$ ). Data from audio recordings were transcribed and analyzed using thematic analysis. Findings indicate improvements in career maturity among students. Workshops increased students' understanding of personal interests and motivated some to further explore career information. However, they primarily confirmed students' existing career choices. Counsellors noted differences in workshop impact between students from gymnasiums and vocational schools, with vocational students having more defined career paths. Both students and counsellors agreed on the need to implement such programs earlier in the educational

system. Findings from the focus groups emphasize the importance of dual-perspective qualitative evaluations. By considering both students who attended the workshops and the school counsellors who led them, the study provides a deeper understanding of the key strengths and weaknesses of career guidance interventions in raising the level of career maturity among students, which is crucial for designing more effective future programs.

*Keywords:* career guidance, career maturity, intervention, focus groups, evaluation

# **SOCIO-PSYCHOLOGICAL AND PHYSIOLOGICAL FACTORS INFLUENCING WELL-BEING IN PEOPLE WORKING IN ISOLATED, CONFINED, AND EXTREME (ICE) ENVIRONMENTS**

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*Abstract.* The growing interest in human behavior within isolated, confined, and extreme (ICE) environments is driven by the increasing number of workers in space missions, the commercialization of spaceflight, and Polar expeditions. NASA illustrated a crucial connection between psychological well-being and work performance, underscoring the necessity for further investigation. Current psychological research in ICE environments has predominantly focused on diagnosing and treating psychological disorders rather than enhancing overall psychological well-being. Consequently, the effects of prolonged exposure to ICE environments are well-documented and include issues such as disadaptation, diminished psychosocial health, depression, fatigue, mood fluctuations, reduced cognitive function, sleep disturbances, and substance abuse. Research in ICE environments also highlights that team members serve not only as colleagues but as vital sources of social support to enhance well-being. However, paradoxically, those who actively seek social support tend to experience increased negative emotions and relational stress, which in turn leads to lower well-being. Factors contributing to decreased well-being among crew members include interpersonal conflicts, lack of social support, intergroup trust, leadership styles, team homogeneity, polar winters, and extreme weather conditions. Given that individuals working in ICE environments are at heightened risk for adverse psychological outcomes, it is essential to deepen our understanding of the critical social, psychological, and physiological factors influencing their well-being.

*Keywords:* well-being, ICE environment, work productivity, polar expeditions, group dynamics





**Symposium**  
**EFFECT OF OUR PAST, PRESENT WELL-BEING, BELIEFS**  
**ABOUT THE FUTURE ON ACADEMIC PERFORMANCE AND**  
**INTERPERSONAL RELATIONSHIPS**



# EFFECT OF OUR PAST, PRESENT WELL-BEING, BELIEFS ABOUT THE FUTURE ON ACADEMIC PERFORMANCE AND INTERPERSONAL RELATIONSHIPS

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*Abstract.* The aim of this symposium is reflecting upon some meaningful topics such as family, subjective well-being, on the one hand, and academic success and our beliefs, on the other hand. We asked students from different Universities in Serbia, mainly from the University of Nis, to give us the opportunity to better understand their outlook on interpersonal relationships, academic performance and their beliefs about justice in the world. Over 250 students and young adults participated in this research and shared their thoughts and evaluations with the volunteers of the Psychological counseling for students. Do internal factors have an effect on our academic success, such as our well-being, our behavior like procrastination, or maybe some external factor such as family climate? If bad things have happened to us, how will we look and maybe justify those events? What role does belief in just world play in our own perceived capacity for success in academic tasks? Some of the answers regarding these questions can be found in the research results of the symposium papers. Important results we reached out are that - family climate and the need for drama play a significant role in shaping an individual's interpersonal orientation, then that autonomy, as a part of the family self-assessment and positive attitude towards life play an important role in explaining the general academic self-efficacy. Results of other paper indicate that the general academic self could clarify more with procrastination, subjective well-being, and personal belief in a just world. And in the end, participants with some adverse, unfavorable childhood experiences tend to have less belief in personal and general just world. The significance of these results lies in a better understanding of these concepts and their connection, which can be used in the practice of mental health professionals employed in schools or in individual sessions with clients, where it could be worked on improving one's academic efficacy or interpersonal relationships. Also, the significance of these research papers is in giving possible explanations for the question why we think that "what comes around goes around" and whether this belief in just world helps us in everyday life, after surviving trauma events.

*Keywords:* interpersonal relationships, academic self-efficacy, belief in just world

## THE FAMILY CLIMATE AND THE NEED FOR DRAMA AS PREDICTORS OF THE INTERPERSONAL ORIENTATION

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*Abstract.* The main goal of this research was to examine if dimensions of the need for drama (Interpersonal manipulation, Impulsive outspokenness, and Persistent perceived victimhood) and dimensions of family climate (Acceptance, Conflicts, Autonomy in the family) can predict interpersonal orientation (Need for others, Friendship, Distrust, and Social isolation). The sample was convenient ( $N = 266$ , the age range was 18 to 60 years,  $M(\text{age}) = 22,63$ ;  $SD(\text{age}) = 4,55$ ). The instruments used in this study are the Need for Drama scale, the Family Climate inventory, and the Scale of Interpersonal Orientation. Four hierarchical regression analyses were conducted. The first model consisted of dimensions of family climate, while in the second step dimensions of the need for drama were added. The obtained results indicate the significant model in prediction in the prediction of the Need for others ( $R = .38$ ,  $R^2 = .15$ ,  $F(5,260) = 8.87$ ,  $p < .001$ ) with dimensions of Acceptance and autonomy in the family ( $\beta = .17$ ,  $p = .010$ ), Impulsive outspokenness ( $\beta = .32$ ,  $p < .001$ ), and Perceived victimhood ( $\beta = -.22$ ,  $p < .001$ ) as significant individual predictors. The model that predicts Friendship was also significant ( $R = .32$ ,  $R^2 = .10$ ,  $F(5,260) = 5.90$ ,  $p < .001$ ) with dimensions of Interpersonal manipulation ( $\beta = -.16$ ,  $p = .015$ ), Impulsive outspokenness ( $\beta = .31$ ,  $p < .001$ ), and Perceived Victimhood ( $\beta = -.16$ ,  $p = .014$ ) as significant predictors. Furthermore, the model that predicts Distrust was significant ( $R = .65$ ,  $R^2 = .42$ ,  $F(5,260) = 37.88$ ,  $p < .001$ ) with dimensions of Acceptance and autonomy in the family ( $\beta = -.13$ ,  $p = .015$ ), Interpersonal manipulation ( $\beta = .13$ ,  $p = .013$ ), and Perceived victimhood ( $\beta = .62$ ,  $p < .001$ ) as significant individual predictors. In the end, the model that predicts Social isolation was significant ( $R = .48$ ,  $R^2 = .23$ ,  $F(5, 260) = 15.48$ ,  $p < .001$ ) with dimensions of Interpersonal manipulation ( $\beta = .18$ ,  $p = .002$ ), Impulsive outspokenness ( $\beta = -.27$ ,  $p < .001$ ), and Perceived victimhood ( $\beta = .44$ ,  $p < .001$ ) as significant individual predictors. These findings suggest that family climate and the need for drama play a significant role in shaping an individual's interpersonal orientation, with factors like acceptance, autonomy, impulsive outspokenness, and victimhood emerging as particularly relevant predictors. The obtained results indicate the importance of including factors from the environment, as well as from the aspect of personality when considering the interpersonal orientation of the person. To conclude, obtained results indicate that different interpersonal orientation can be partially predicted by dimensions of the need for drama and dimensions of family climate on this/our sample, but potential concepts that can complement model and potential mediators should be considered in the future researches.

*Keywords:* family climate, need for drama, interpersonal orientation

## **FAMILY SELF-ASSESSMENT AND POSITIVE ATTITUDE TOWARDS LIFE AS PREDICTORS OF SUCCESS IN STUDIES / PERCEPTION OF THE DIFFICULTY OF STUDYING**

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*Abstract.* The main goal of this study was to investigate whether there is association between family self-assessment, positive attitude towards life and success in studies / perception of studies difficulty, as well as whether family self-assessment and positive attitude towards life have a statistically significant contribution in predicting success in studies, i.e. perception of studies difficulty. Inspired by earlier work on student efficiency, as well as the well-known fact that there have been major changes in family dynamics during the pandemic, we wanted to see how this would reflect on student self-efficacy at the beginning. The sample of this research is convenient, it consists of 234 respondents ( $N=234$ ), average age 21.55 years. The sample consists of 21.8% of the male respondents, while 78.2% of the sample is made up of the female respondents. Recent researches have shown that the most common problem that young people face is family functioning, and the problem with the success in studies is not tedious either. In this regard, the idea is to examine the relationship of the family, i.e. the assessment of the family and a positive attitude towards life, on the success in studies / perception of studies difficulty. The instruments used in this research are the Family Climate Inventory, which includes three dimensions: acceptance, conflicts and autonomy, the Short Scale of Subjective Well-Being, from which the positive attitude towards life dimension was extracted, as well as The General Academic Self-Efficacy scale. All scales used in this study meet the reliability criteria, i.e. the Cronbach's Alpha coefficient is above 0.7 on all scales ( $\alpha > 0.7$ ). The results obtained indicate that the independent variable explained 21.8% of the dependent variable ( $R^2 = .218$ ;  $F=15.969$ ;  $df=4$ ). The model is also statistically significant. Positive Attitude Towards Life ( $\beta = .360$ ;  $p < .001$ ) as well as Autonomy, as a part of the Family Self-Assessment, ( $\beta = .338$ ;  $p = .002$ ) were singled out as the dimensions that have the greatest contribution in explaining the variance of the dependent variable. All the hypotheses in this research were confirmed, so the predictive validity of the mentioned dimensions was also confirmed when it comes to predicting success in studies / perception of studies difficulty. Although the goals of this research have been achieved, it is recommended that researchers in this field eventually examine the mentioned variables using different statistical methods and possibly a different sample in order to obtain more reliable data.

*Keywords:* study perception, family, life attitude, self-efficacy, acceptance

# **PREDICTING THE GENERAL ACADEMIC SELF-EFFICACY: THE ROLE OF PROCRASTINATION, SUBJECTIVE WELL-BEING, AND PERSONAL BELIEF IN A JUST WORLD**

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*Abstract.* The aim of this research was to determine whether general academic self-efficacy could be predicted by subjective well-being, procrastination, and personal belief in a just world. In the academic context, self-efficacy refers to one perceived capacity for success in academic tasks. On the other hand, procrastination is usually associated with postponing academic tasks. Personal belief in a just world refers to subjectively observed or experienced injustice often correlated with personal well-being including cognitive and emotional evaluations of oneself. The research sample involved mainly student participants from Niš ( $N = 252$ ), aged 18-60 ( $M = 22.23$ ,  $SD = 4.13$ ), 77.4% of whom were female. The data were collected using the Procrastination Scale, the General Academic Self-Efficacy Scale, the Belief in a Just World Scale and the Brief Subjective Well-Being Scale. Linear regression analysis was used to test the research hypothesis. Results indicate that the model is statistically significant and explains 22.7% of the variance of the general academic self-efficacy ( $R^2 = .230$ ,  $F(3,229) = 22.748$ ,  $p < .001$ ), with procrastination ( $\beta = -.32$ ,  $p < .05$ ), subjective well-being ( $\beta = .272$ ,  $p < .001$ ), and personal belief in a just world ( $\beta = .204$ ,  $p < .01$ ) as significant predictors. The results implicate that such model including several dimensions of one perceived cognition, emotion, and behavior can influence self-efficient attitude. If a student believes in a just world and uses it as a motivator to move towards a desired goal or to achieve a certain academic task, it could result in manifesting subjective well-being and general satisfaction with individual accomplishment.

*Keywords:* self-efficacy, procrastination, well-being, just world, academic

## DO WE GET WHAT WE DESERVE? PREDICTION OF BELIEF IN JUST WORLD WITH ADVERSE CHILDHOOD EXPERIENCES

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*Abstract.* The aim of this study was to examine the role of adverse childhood experiences in prediction of belief in just world. The sample consisted of 266 participants, male (N=60) and female (N=260), aged 18-60 years ( $M=22.63$ ,  $SD=4.55$ ). Adverse childhood experiences were examined with Adverse Childhood Experiences Questionnaire (ACE) and belief in just world with Belief in just world Scale (BJW) which measures general and personal belief in just world. Adverse childhood experiences Questionnaire examines various types of abuse and neglect and aspects of the child's environment that can cause trauma or chronic stress in the first 18 years of life such as physical, sexual or emotional abuse, physical or emotional neglect and a cluster of different family circumstances. In this research, these experiences are viewed and methodologically processed in two categories, as if they happened or not. Belief in just world is defined essentially as the belief that we live in a just world in which, in principle, everyone gets what they deserve in some way. To test our hypotheses, two simple linear regression analyses were performed. Results of first simple linear regression showed that adverse childhood experience was a statistically significant predictor ( $\beta=-.256$ ,  $p<.001$ ) and explained 6,6% of general belief in just world ( $R^2=.066$ ,  $F(1,264)=18,509$ ,  $p<.001$ ). Furthermore, results of second simple linear regression showed that adverse childhood experience was also a significant predictor ( $\beta=-.318$ ,  $p<.001$ ) and explained 10,1% of personal belief in just world variance ( $R^2=.101$ ,  $F(1,264)=29,795$ ,  $p<.001$ ). This research tried to find out if the existence of some adverse childhood experiences can in some way shape our beliefs, specifically, the belief in a just world. Additionally, the results indicated that participants with some adverse, unfavorable childhood experiences tend to have less belief in personal and general just world. Based on these results we could assume that some people who experience some adverse event in childhood don't use this belief as some kind of consolation or resource for overcoming bad things that happened to them. These findings help shed light on the relationship between beliefs in a just world and adverse childhood experiences, and may also serve mental health professionals in their practice, where they could better explore this relationship and use it in working with trauma clients.

*Keywords:* adverse experiences, childhood, trauma coping, belief in just world





**Thematic Session**  
**MENTAL HEALTH AND INDIVIDUAL**  
**DIFFERENCES 1**



## THE BODY IMAGE DISSATISFACTION AND ITS EFFECT ON ILLNESS PERCEPTION IN PATIENTS WITH BREAST CANCER

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*Abstract.* Breast cancer is the most frequent cancer in women worldwide, while in Serbia during 2020 year there were 6724 women with this diagnosis. Treatment of breast cancer leaves long-term changes on women's physical appearance. However, surveys indicate that some of these concerns are not addressed within the patient-physician relationship, which primarily focuses on medical illness treatment and recovery. According to the Common Sense Model patients form a system of perceptions and beliefs towards their illness, further regulating their reactions. The aim of this study was to examine the relationship between illness perception and body image dissatisfaction in breast cancer patients. A sample consisted of 197 patients (Mage = 59.56, SD = 10.82) with diagnosed breast cancer hospitalized at the Center for Oncology and Radiology, Kragujevac, Serbia. The instruments included sociodemographic questionnaire, Brief Illness Perception Questionnaire, Body Image Scale, and sociodemographic questionnaire. The Body image dissatisfaction was more emphasized in younger women ( $t(195) = 2.274, p < .05, d = .33$ ), in women who underwent mastectomy ( $t(195) = -2.626, p < .01, d = .37$ ), and in women with lymphedema ( $t(195) = 2.030, p < .05, d = .32$ ). The final model showed that 30% of the variance of illness perception in women with breast cancer was explained by the body image dissatisfaction (CFI = .97, GFI = .95, RMSEA = .04, SRMR = .06) with moderating effect of type of surgery, age group, and lymphedema. These results suggest that patients who underwent mastectomy (especially if they are younger and develop lymphedema) tend to be more dissatisfied with their body image, and have tendency to perceive illness as threatening. Considering that the illness perception is related with the way women perceive changes in body image, it is important that the multidisciplinary team of medical experts prepare women to the expected changes in physical appearance in the initial stages of cancer treatment, and help them to adequately face them in the following stages.

*Keywords:* Breast cancer, illness perception, body image

## TYPUS MELANCHOLICUS: A PSYCHOANALYTIC APPROACH

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*Abstract.* The concept of Typus Melancholicus was developed by Tellenbach to describe the premorbid and intermorbid personality vulnerable to endogenous depression. The work of Tellenbach is essential to clarify the relationship between premorbid personality, understood as a precondition for a psychotic decompensation, and endogenous depression. In this paper, we will first outline four characteristics of typus melancholicus: orderliness and conscientiousness, described by Tellenbach, and hyper/heteronomia and intolerance of ambiguity, described by Alfred Kraus. Secondly, we argue that hyper/heteronomia is a clinical phenomenon frequently encountered in our clinical practice, since it is linked to the postmodern structuring of the subject. By the postmodern structuring of the subject, we refer to the disappearance of traditional collective identification narratives and the proliferation of small narratives. Hypernomia consists of an excessively rigid adaptation and overidentification with the dominant social norms. Heteronomia represents an exaggerated reception of the external standard practice by which each action is guided by an impersonal motivation, referring to the socially established criteria. Finally, hypernomia and heteronomia are discussed in the context of ordinary psychosis. The term ordinary psychosis is introduced in Lacanian psychoanalysis in 1988, as an effort to think the psychotic structure outside of decompensation, which is characterized by positive symptoms such as delusions, hallucinations and disorganized cognitive and behavioral states. We offer insights into identifying psychotic structures outside of psychotic decompensation and positive psychotic symptoms, along with potential treatment directions. Rather than to interpret the unconscious desire, the accent should be on reconstruction of social roles with whom the patient was overidentified. Furthermore, the focus of the analyst in the treatment is directed toward finding out how subjective consistency and reconnection might be created. They always appear to be specific for every subject in its singularity. What is singular to the analysand's functioning thereby stands to the fore.

*Keywords:* typus melancholicus, overidentification, ordinary psychosis, stabilization

# INVESTIGATING THE EFFICACY OF VIRTUAL REALITY THERAPY ON SLEEP QUALITY AMONG YOUNG ADULT POPULATION: AN EXPLORATORY STUDY

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*Abstract.* This exploratory study aimed to investigate the effectiveness of Virtual Reality Therapy (VRT) in improving sleep quality among Bosnian young adults. A total of 283 participants were initially selected using a convenience sampling approach, with 18 poor sleepers randomly chosen for the second phase of the study. These participants were randomly assigned to three equal groups: VRT, active control group (psychoeducation about sleep hygiene and behavioral strategies for improving sleep), and a passive control group. Sleep quality was measured using the Pittsburgh Sleep Quality Index (PSQI). The data were analyzed using a Multivariate Analysis of Variance (MANOVA) with post-hoc comparisons and paired samples t-tests. This method was chosen due to the complexity of the study design, which involved multiple groups and time points, and its advantage of controlling for Type I errors when analyzing multiple dependent variables. The results suggest that post-intervention, the VRT group had significant improvement in PSQI difference scores compared to the passive control group, indicating an improvement in sleep quality. Moreover, within the VRT group, there was a significant improvement in sleep quality after 2 weeks and post-intervention compared to pre-intervention, while in the active control group, a significant improvement in sleep quality was observed post-intervention compared to pre-intervention. On the other hand, no significant differences were observed in the PSQI scores within the passive control group. The small sample size may limit the generalizability of these findings. The study underscores the potential of VRT as an effective method for improving sleep quality in a shorter time frame compared to psychoeducation. Further research is recommended to validate these findings and explore the potential of VRT as a therapeutic intervention for improving sleep quality.

*Keywords:* Virtual Reality Therapy, Sleep Quality, Pittsburgh Sleep Quality Index, Young Adults

## RELATIONSHIP OF BULLYING AND DEPRESSION AMONG ADOLESCENTS: A SYSTEMATIC LITERATURE REVIEW

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*Abstract.* Bullying is a significant global problem that affects many life domains of young people who are involved in it. Every form of bullying is associated with negative outcomes for the victim, including physical injuries and mental health symptoms, such as depression. The term depression is used to denote depressive affect, depressive symptoms measured by various symptom scales or self-reported depression, as well as depressive disorders that meet criteria in diagnostic classifications. To examine the relationship between bullying and depression among adolescents, a systematic scientific literature review has been conducted. A systematic search of the literature was made following the PRISMA guideline. Inclusion criteria were empirical studies examining the relationship between bullying and depression among adolescents, using quantitative, qualitative, or mixed methods, and published in English from 2001 to 2024. Exclusion criteria included theoretical papers without empirical data and non-peer-reviewed articles. The risk of bias in included studies was assessed using a modified version of the Quality Assessment Tool, considering factors such as clarity of objectives, appropriateness of methodology, data collection transparency, and consideration of limitations and biases. The search databases included Ebsco, Medline, and the Directory of Open Access Journals. The reviewed studies consistently demonstrate a relationship between bullying and depression, with most showing a moderate to strong positive correlation ( $r = 0.3$  to  $0.7$ ). These findings suggest a substantial link between exposure to bullying and the development of depressive symptoms in adolescents. However, some studies indicate that the relationship may be influenced by other factors, including social support, socio-economic status, and individual psychological resilience. Despite varying data on prevalence and demographic differences, the overall evidence confirms the significant impact of bullying on adolescent depression, emphasizing the need for interventions that address both bullying and mental health.

*Keywords:* bullying, depression, adolescents, mental health

# MATERNAL SELF-ESTEEM, DEPRESSION AND ANXIETY IN PREGNANT BULGARIAN WOMEN

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*Abstract.* Maternal self-esteem, defined as the perception of one's worth and competence as an (expectant) mother, plays a crucial role in shaping experiences and well-being during this critical life stage. Research shows that maternal self-esteem impacts long-term outcomes for both the mother and child, as well as their relationship postpartum. However, studies on maternal self-esteem during pregnancy are relatively scarce. The primary objective of this study was to explore the associations between maternal self-esteem, depression, anxiety, perceived partner support, and demographic factors in pregnant Bulgarian women. The study recruited 111 pregnant women, aged 21 to 46 years ( $M = 30.14$ ,  $SD = 4.87$ ), during routine doctor's visits and through online advertising. For 51.4% of the participants ( $n = 57$ ), this was their first pregnancy. Participants completed the following scales: Adapted Version of The Maternal Self-Report Inventory - short form (MSRI-s, Shea & Tronick, 1988; Farrow & Blissett, 2007), Edinburgh Postnatal Depression Scale (Cox, Holden & Sagovsky, 1987), the Generalized Anxiety Disorder Screener (Spitzer et al., 2006). Participants were also asked to rate their perceived partner support on a scale from 1 to 10. A Cronbach's alpha coefficient of .803 suggested good internal consistency of the MSRI-s scale. Higher maternal self-esteem was significantly associated with lower levels of depression ( $r = -0.469$ ,  $p = 0.000$ ) and anxiety ( $r = -0.266$ ,  $p = 0.005$ ) antepartum, as well as higher perceived partner support ( $r = 0.207$ ,  $p = 0.030$ ). Demographic factors such as age, education, first pregnancy status, and having other children were not significantly associated with maternal self-esteem. Our study confirms the link between maternal self-esteem, depression and anxiety in a population of pregnant Bulgarian women. These findings highlight the potential importance of maternal self-esteem in relation to antenatal mental health, suggesting the need for further research.

*Keywords:* maternal self-esteem, antepartum depression, antepartum anxiety

## INTIMACY AND BOUNDARIES IN PSYCHOTHERAPY: NOVICE PSYCHOTHERAPIST AND DISTANCED CLIENT

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*Abstract.* Psychotherapy is a challenging process for everyone included. On one side demanding from client to change and maintain corrective experience, while on the other challenging all roles and complexities in the therapist's presence of "here and now". Psychotherapy should be an unrestrained area in which clients are encouraged to share their experiences authentically; however, although clients initiate a process of personal growth and psychotherapy, difficulties in self-disclosure may occur and present a hindering effect in alliance formation. Especially when such a setting occurs in the practice of a trainee or novice psychotherapist struggling with feelings of incompetence, it may significantly harness therapeutic alliance formation, produce inaccurate and untimely interpretations, and unadjusted interventions, contribute to early or prolonged therapy closure, or client dropout. How to integrate fears from both sides and channel them in the direction of learning effective emotion regulation and self-exploratory process in which each side is eager to contribute to growth and emotional equilibrium? Emphasizing the possibility of the appearance of difficulties and their aspects, increasing awareness of these concepts may greatly help trainees in the formation of ways and approaches that may facilitate better communication and the formation of a more professional relationship as significantly influencing the main result of the psychotherapy quality and the process of professional development. This paper aims to explore different perspectives by integrative psychotherapy theoretical background while observing facets of difficulties in clients' opening up process in initial psychotherapeutic sessions, disabling disclosure, and challenging therapeutic alliance formation. The significance of synchrony mechanisms in therapeutic interpersonal processes are discussed and its role in development of effective therapeutic skills, as well as the emotional suppression in clients and its hindering effects. The paper demonstrates the need for multidisciplinary approach in future research with aim of understanding dynamic challenges within psychotherapy, especially for therapists in process of gaining operative competence.

*Keywords:* psychotherapy, novice psychotherapists, attunement, therapeutic alliance, alliance rupture



## MODEL OF LIFE SATISFACTION OF THE PATIENTS WITH COVID-19<sup>16</sup>

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*Abstract.* The COVID-19 pandemic has become an unprecedented situation of uncertainty that is at risk of inducing a pathological psychosomatic functional system and trigger the process of disease development. However, the mechanism by which the severity of the disease affects life satisfaction is not yet understood. This study aims to identify how the severity of COVID disease is related to life satisfaction and what is the role of life quality, temporal focus and psychopathological symptoms in this relationship. The sample consisted of 253 usable observations, including the groups of people who were slightly (not hospitalized), moderately and severely ill (hospitalized and were in rehabilitation) in 2021. The respondents were predominantly women (79%), aged 18-75 (average age  $M = 46.9$   $\sigma = 11.68\%$ ), 70% had higher education. The methods used were: SF-36 (The Short Form-36), SCL-90-R (Derogatis et al.), Temporal Focus Scale (Shipp et al.), Life Satisfaction Scale (Diener et al.). The SEM results showed satisfactory correspondence indexes for the empirical data ( $p = 0.005$ ; GFI = 0.972; CFI = 0.975; RMSEA = 0.071; Pclose = 0.135). The model demonstrates the relationship between the severity of the disease, life satisfaction, physical and mental life quality, temporal focus and psychopathological symptoms. The results show that the severity of the disease does reduce life satisfaction, not directly, but through quality of life, psychopathological symptoms and temporal focus. The strongest link is found between life satisfaction and quality of life, implying the best balance between physical, mental, economic and social support. At the same time, the increased psychopathological symptoms (obsessive thoughts and actions, somatization, interpersonal sensitivity, depression, anxiety, hostility and fears) negatively affect the quality of life, in turn reducing life satisfaction. Past focus reduces, and current focus increases the quality of life and life satisfaction. The study contributes to defining the role of the severity of the COVID in life satisfaction.

*Keywords:* life satisfaction, COVID-19, psychopathology

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**Thematic Session**  
**MENTAL HEALTH AND INDIVIDUAL DIFFERENCES 2**



# THE RELATIONSHIP BETWEEN THE WORLD ASSUMPTIONS AND THE GROWTH MINDSET

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*Abstract.* A person's beliefs can be measured using proliferating personality measures (Anvari et al., 2024). To understand interrelations between parallel psychological constructs, correlational analyses are needed. The aim of this study is to assess the relationship between two constructs measuring a person's beliefs about themselves and others: the world assumptions (Janoff-Bulman, 1989) and the growth mindset (Dweck, 2006). The world assumptions comprise the person's beliefs about the benevolence and controllability of the world, the person's self-worth, and luck; people unaffected by a psychological trauma tend to hold more positive world assumptions (Janoff-Bulman, 1989). In a related manner, a person with a growth mindset believes that everyone can develop even their most fundamental characteristics, hence their self-worth need not depend on uncontrollable factors (Dweck, 2006). No studies addressing a potential link between these two concepts were found. The sample includes 103 vocational students (100 females, 3 males), aged 15-22 ( $M = 17.9$ ,  $SD = 1.3$ ). The World Assumptions Scale (Janoff-Bulman, 1989), translated and adapted for the Russian population (Padun and Kotel'nikova, 2008) was applied. The mindset was assessed using a modified version of Dweck's questionnaire (Galiullina, 2022). Significant positive rank correlations were found between the growth mindset and such world assumptions as Benevolence of the World ( $r = 0.35$ ,  $p < 0.001$ ), Self-Worth ( $r = 0.33$ ,  $p < 0.001$ ), Luck ( $r = 0.34$ ,  $p < 0.001$ ), and Controllability ( $r = 0.41$ ,  $p < 0.001$ ); an insignificant though still positive correlation was found with Justice ( $r = 0.16$ ,  $p = 0.110$ ). After exclusion of male participants, the four significant correlations maintained value (+/- 0.02) and significance ( $p < 0.001$ ). The results suggest that the concepts of the world assumptions and the growth mindset are interrelated and, thus, might have a shared origin. In particular, the development of a growth mindset might also be disrupted by trauma, at least in females.

*Keywords:* world assumptions, growth mindset, fixed mindset, vocational students

## THE DIRECT AND INDIRECT EFFECT OF MULTIDIMENSIONAL MINDFULNESS ON EMERGING ADULTS' OUTCOMES: THE ROLE OF COGNITIVE FLEXIBILITY AND HOPE AS MEDIATORS

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*Abstract.* The stage of emerging adulthood is one of transition and discovery, but it also involves a strong drive for identity development. Nowadays, the young generation is at risk of having problems functioning and developing maladaptive ways of thinking that lead to substance abuse, suicide, and mental distress. Instilling mindfulness in emerging adults is a worthwhile investment as they are our future generation, and it will make us more resilient to life's setbacks. Our study has focused on emerging adults more than other age groups as they belong in a transition time from late teens to emerging adults, face struggles with academic and career choices, financial crises and starting romantic relationships. This study aimed to examine (1) the direct association of mindfulness (self-regulated attention & orientation to experience) with cognitive flexibility, hope, resilience and flourishing (social, psychological & emotional well-being), (2) the direct association of cognitive flexibility, and hope with resilience and flourishing, (3) the mediating role of cognitive flexibility and hope in these relationships. The sample comprised 560 emerging adults (55% women, 45% men), aged 18-27 years ( $M= 21.73$  years,  $SD= 1.63$ ). Data were collected from university students using five self-report measures (Five Facet Mindfulness Questionnaire, Cognitive Flexibility Inventory, Trait Hope Scale, Brief Resilience Scale, Multidimensional Flourishing Scale). The path analysis suggested that both two factors of mindfulness were significantly associated with cognitive flexibility, hope, resilience, and psychological and emotional well-being, and only orientation to experience was additionally significantly associated with social well-being. In addition, cognitive flexibility was significantly related to resilience, and hope was directly associated with flourishing. Cognitive flexibility partially mediated the association between mindfulness and resilience. Furthermore, hope partially mediated the association between mindfulness and flourishing. The findings reveal the benefit of mindfulness in promoting adaptive thought and a hopeful and flourishing life.

*Keywords:* Mindfulness, Cognitive Flexibility, Hope, Resilience, Flourishing

## **ASSOCIATION BETWEEN EMOTIONAL INTELLIGENCE AND SLEEP QUALITY AMONG UNIVERSITY STUDENTS IN BANGLADESH<sup>17</sup>**

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*Abstract.* Background: Emotional intelligence (EI) refers to a set of skills indicating the capability to understand, manage, and deal proficiently with one's own and other people's emotions. Nowadays, young students and adults have already started facing the impact of EI in their lives. Objective: This study aimed to explore the relationship between emotional intelligence and sleep quality among university students in Bangladesh. Method: A cross-sectional study with purposive sampling was carried out in an online survey via Google Forms. 266 university students (102 males, 164 females) aged 18-25 years from various public and private universities, were evaluated by a personal information form, and two questionnaires, the Bengali version of the Emotional Intelligence Scale, and the Bengali version of the Pittsburgh Sleep Quality Index. Results: The results of this study showed that there was a significantly negative correlation between EI and Global PSQI Score ( $r = -.455$ ,  $p < .01$ ) was found. Conclusion: Overall, these findings revealed a significant negative relationship between EI and Sleep Quality, regarding the contribution of good sleep quality to enhancing EI. Future longitudinal studies should explore links between EI and PSQI to better understand the development of sleep quality over time in relation to EI. Furthermore, interventions to enhance EI, focusing on emotional regulation skills, coping strategies, and interpersonal relationships, could effectively enhance sleep quality and promote healthier sleep habits.

*Keywords:* Emotional Intelligence, Sleep Quality, University Students, Bangladesh

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## SOCIODEMOGRAPHIC VARIABLES AS PREDICTORS OF SUBJECTIVE HEALTH EVALUATIONS IN TURKEY

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*Abstract.* This study aims to examine sociodemographic predictors of subjective health evaluations (SHE) in Turkey. SHE refers to one's general health status through self-report. According to a previous study conducted in a representative sample ( $N = 1,955$ ) of Turkey, being a man, younger age, higher educational level, higher SES, and greater household size were protective factors for better SHE. However, relationship status and presence of a child were not significantly related to SHE. According to another study conducted in representative and dyadic data (i.e., husbands and wives,  $N = 19,268$ ) of Turkey, it was reported that being a man, younger age, higher educational level, higher SES, fewer children, and greater household size were protective factors for better SHE. In the current study, the predictor role of sociodemographic variables was tested in another representative sample of Turkey ( $N = 2,415$ ;  $N_{\text{woman}} = 1,207$ ; Age range = 18-95,  $M_{\text{age}} = 38.83$ ,  $SD = 12.67$ ) accessed via the last wave of the World Values Survey (2018). A multiple linear regression analysis was conducted. Common demographic predictors of SHE (i.e., gender, age, education, SES, marital status, number of children, and household size) used in the other two analyses mentioned above were included in the analysis. Findings suggested that age ( $\beta = -0.132$ ,  $SE = 0.002$ ,  $p < 0.001$ , 95% CI [-0.011, -0.005]), SES ( $\beta = 0.091$ ,  $SE = 0.016$ ,  $p < 0.001$ , 95% CI [0.039, 0.103]), marital status ( $\beta = 0.086$ ,  $SE = 0.039$ ,  $p = 0.001$ , 95% CI [0.055, 0.207]), and number of children ( $\beta = -0.121$ ,  $SE = 0.015$ ,  $p < 0.001$ , 95% CI [-0.090, -0.0031]) significantly predicted SHE. Younger age, higher SES, being married, and fewer children were protective factors for better SHE. However, gender ( $\beta = -0.001$ ,  $SE = 0.029$ ,  $p = 0.941$ , 95% CI [-0.060, 0.055]), education ( $\beta = 0.033$ ,  $SE = 0.008$ ,  $p = 0.138$ , 95% CI [-0.004, 0.029]) and household size ( $\beta = -0.005$ ,  $SE = 0.012$ ,  $p = 0.828$ , 95% CI [-0.025, 0.020]) were not significantly associated with SHE. Considering these three analysis findings, including the current analysis, the most robust predictors of SHE are age and SES in Turkey. (Non) replicability of the existing body of knowledge through such representative large samples would shed light on future health-related implications in Turkey. Also, such mixed findings in the cumulative knowledge deserve further attention.

*Keywords:* subjective health evaluations, sociodemographic variables, Turkey



## A SINGLE QUESTION ON FUNCTIONING DIFFICULTIES WELL-PREDICTS PROBLEMATIC INTERNET USE IN ADULTS<sup>18</sup>

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**Abstract.** Background: A single question on functioning difficulties associated with problematic internet use (PIU) is needed for research and clinical practice to be used to provide a convenient and effective way of assessing internet-related problems in various contexts. Aim: To determine if a single-question test (Q-Single) "Has the use of the Internet significantly impaired your normal daily activities and/or relationships with those around you?" to predict PIU in adults. Methods: An anonymous online survey included two questionnaires that measure PIU: the Problematic Internet Use Questionnaire (PIUQ-9) and the Compulsive Internet Use Scale (CIUS). We evaluated impairment due to PIU by asking study participants a single question with a yes/no answer on whether they thought that the use of the Internet significantly impaired their normal daily activities and/or relationships with those around them (Q-Single). Depression symptoms were measured using the Patient Health Questionnaire (PHQ-9), and anxiety symptoms using the General Anxiety Disorder (GAD-7) scale. Block-wise linear regression analyses were performed to estimate the predictive value of the Q-Single question on the CIUS and the PIUQ-9, and of the Q-Single, the CIUS, and the PIUQ-9 on PHQ-9 and GAD-7 when controlling for gender, age, and internet use time. Results: In total, 800 adults (mean age: 41.6 ± 14.2 years; 18.8% men, 81.3% women) were included in our study. We found that Q-Single was associated with CIUS and PIUQ-9 when controlling gender, age, and internet use time. Q-Single proved to be a good predictor of PIU ( $\beta = 0.29$ ,  $p < 0.001$  [PIUQ-9] and  $\beta = 0.27$ ,  $p < 0.001$  [CIUS]) when controlling for age, gender,

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and internet use time. Adjusting for the same controlling variables, the Q-Single had a moderate association with depression symptoms ( $\beta = 0.18, p < 0.001$  [PHQ-9]) and anxiety symptoms ( $\beta = 0.20, p < 0.001$ ) [GAD-7]). Conclusions: The Q-Single could provide a valid proxy estimations for PIU, especially functional impairment due to PIU in adults.

*Keywords:* Problematic internet use

## VALIDATION OF CLANCE IMPOSTOR PHENOMENON SCALE ON CROATIAN-SPEAKING MEDICAL STUDENTS

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*Abstract.* Imposter syndrome (or phenomenon) is a psychological condition described as an internal experience of intellectual fraud. People who experience this syndrome have difficulty internalizing their own achievements and successes, despite a series of metrics (completed academic education, exceptional scores on standardized tests, praise and respect from colleagues and superiors) that indicate their success. The main goal of this validation study is to examine the psychometric characteristics of The Clance Impostor Phenomenon Scale (CIPS) on a Bosnian-Herzegovinian sample on Croatian-speaking medical students. EFA and CFA was done on two different samples. First study, with purpose to conducting EFA included the sample comprised of 338 students from four academic institutions in Bosnia and Herzegovina including Universities of Banja Luka, Sarajevo, Tuzla, and Zenica. Regarding the gender distribution, 49 men (14.5% of the total sample), 288 women (85.2% of the total sample), and one person who did not declare itself in the mentioned two categories (0.3% of the total sample) participated in the research. The age range was 19 to 49 years,  $M(\text{age})=23.19$ ;  $SD(\text{age})=5.13$ . The sample used for the CFA consisted of 156 students from the University of Mostar. Same as in Study 1, the sample was dominated by females (129, 82.7%) and there was a smaller percentage of male respondents (17, 17.3%). The age range was 18 to 29 years,  $M(\text{age})=23.6$ ;  $SD(\text{age})=4.17$ . The instrument was set up on the SurveyMonkey platform. All respondents proceeded to fill out the following questionnaires (in the same order): demographic data scale, Clance Impostor Phenomenon Scale (CIPS), Rosenberg Self-Esteem Scale (RSES), Multidimensional perfectionism scale - Frost (Frost's Multidimensional Perfectionism Scale - FMPS), Generalized Self-efficacy Scale - GSE, and the neuroticism subscale from the International Personality Item Pool (IPIP-50). The instrument's factor structure was first checked based on exploratory factor analysis (EFA). By analyzing the items that were grouped around the same factors, the following factors were identified: factor 1 = Fake, factor 2 = Discount, and factor 3 = Luck. The study confirmed the found factor structure by performing an additional confirmatory factor analysis, and gave evidence for criterion validity by correlating the results with constructs that provenly associate to imposter syndrome, including self-esteem, self-efficacy, and neuroticism. Following general and useful rules of thumb for a satisfactory fit ( $\chi^2(130)=207$ ,  $p=0.001$ ; CFI=0.947; TLI=0.937; and RMSEA= 0.061), it can be concluded that the data provides evidence for a good model fit. This study makes its' contribution to the literature by validating the Clance Impostor Scale on a large sample of medical students and confirming the three-factor structure found in previous research.

*Keywords:* imposter syndrome, exploratory factor analysis, psychometric characteristics

# MOVEMENT CONGRUENCY EFFECT FOR APPETITIVE STIMULI IN NORMAL POPULATION

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*Abstract.* Approach and withdrawal motivation system activation is widely studied using movement tracking techniques. For example, emotional words have been shown to be classified more slowly if the movement is incongruent (arm extension is used to respond to positive words, while arm flexion is used to respond to negative words) compared to the congruent condition. One of the most powerful triggers, which can activate approach motivation, is appetitive food stimuli. Disturbances of approach motivation to food cause serious problems with health and it is important to find a way to track it. The aim of the study was to test whether the computer mouse and smartphone application tracking movements of the hand can be used to study approach motivation to appetitive stimuli. Previous studies showed mixed results about relation of approach movements characteristics with hunger and other food behavior variables. Thirty-five volunteers aged 18-33 years ( $M=21$ ,  $SD=3,27$ , 7 men) participated in a study with the smartphone application and 44 volunteers aged 18-36 years ( $M=21$ ,  $SD=3,71$ , 10 men) used the computer mouse. The task was to evaluate pictures of food and objects presented in the center of the screen as causing the desire to approach or withdraw. In the incongruent condition, food had to be evaluated by movement from oneself, and objects by a movement towards oneself (vice versa in congruent condition). The variables were: the length of the trajectory and the reaction time (RT). It has been shown that there was a significant interaction between types of stimuli (food/objects) and direction of the movement (the congruent/incongruent). The reaction time and length of the trajectory were shorter if the movement was congruent. There were significant effects of hunger and BMI on RT. Thus, the method of movement tracking can be used by psychologists in diagnostics of food behavior.

*Keywords:* embodiment, approach, withdrawal, appetive stimuli.

**Thematic Session**  
**EDUCATIONAL PSYCHOLOGY, ATTACHMENT,**  
**RELATIONSHIPS, AND DEVELOPMENTAL PSYCHOLOGY 1**



# THE INFLUENCE OF INTERPERSONAL GOALS, PSYCHOLOGICAL STRENGTHS AND WEAKNESSES, AND LIFE SATISFACTION ON AN INDIVIDUAL'S TENDENCY TO BECOME A BULLY OR A VICTIM

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*Abstract.* Peer violence is a phenomenon that is increasingly present in educational institutions. From year to year, this phenomenon does not subside, but only takes on new forms and ways of expression, it becomes part of the students' communication. The consequences of violence are permanent and affect not only the protagonists of this phenomenon, but also their parents, friends, employees of the institution and the whole society. The fight against peer violence is not at all simple, and that is why we conducted this research in order to determine the predictors of peer violence. The primary objective of this study is to examine the extent to which peer violence can be predicted based on children's personal strengths and weaknesses, their interpersonal goals, and their overall satisfaction with life. The sample consists of 213 students, 90 in primary school who had informed consent from their parents (12-15 years old) and 123 in secondary school (16-19 years old). The following instruments were used in the research: Violence Scale (victim, bully), Questionnaire of Strengths and Weaknesses (emotional symptoms, behavior problems, hyperactivity, problem with peers, prosocial behavior), Inventory of Interpersonal Goals in Children and Life Satisfaction Scale (dominance, union, submission and separation). The dimension of victim of violence achieves a significant moderate positive correlation with the dimensions of (bad) relationship with peers ( $r=.53$ ,  $p<.00$ ) and emotional symptoms ( $r=.44$ ,  $p<.00$ ). The dimension of victim of violence also achieves a negative significant correlation with the dimension of satisfaction with life ( $r=-.33$ ,  $p<.00$ ). Regression analysis ( $R=.65$ ;  $R^2=.43$ ;  $F=13.695$ ;  $p=.000$ ) confirmed that the predictors of the role of victim are bad relationships with peers ( $\beta=.42$ ,  $p<.00$ ) and the union ( $\beta=.14$ ,  $p<.04$ ), while the predictors of the role of the bully ( $R=.60$ ;  $R^2=.36$ ;  $F=10.195$ ;  $p=.000$ ) are behavioral problems ( $\beta=.39$ ,  $p<.00$ ) and the tendency to dominate ( $\beta=.15$ ,  $p<.03$ ). Significant gender differences exist in the dimensions of emotional symptoms, union and life satisfaction. Women score higher in emotional symptoms and social community, while men score higher in life satisfaction. The findings obtained in the research indicate that victims often have poor relationships with peers and emotional problems. Children who engage in bullying have a high correlation with behavioral problems, specifically the display of antisocial behavior through intentional harm and infliction of damage to others ( $r=.53$ ,  $p<.00$ ). Additionally, an essential piece of data is the connection between experienced and committed violence ( $r=.29$ ,  $p<.00$ ) as well as low life satisfaction, which confirms the predisposition of violent children also to be victims of violence.

*Keywords:* peer violence, strengths and weaknesses, interpersonal goals, life satisfaction

## LEARNING DIARIES: DESIGN AND DATA ANALYSIS

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*Abstract.* Diaries refer to data collection tools that systematically and repeatedly measure psychological variables over a period of time. Diaries have long been used in personality psychology and developmental psychology but Schmitz and Wiese (2006) strongly recommend their use in education by focusing on the importance of multiple or repeated measurements of the variables related to learning. A review of the education literature reveals that the use of learning diaries started in the 1990's and spread in the early 2000's with the emergence of the process approach in education i.e. when learning has become to be recognized to be a cumulative process that depends much on the amount and structure of both previous learning and forgetting in addition to actual situational factors. That's why many researchers focused on the importance of learning diaries in the field of educational research from the perspective of the process approach mainly in the field of self-regulated learning (Benkhedir, 2023; Ferreira et al, 2014; Klug et al, 2011; Schmitz et al, 2011; Schmitz, 2006; Schmitz & Wiese, 2006; Perels et al, 2005). The purpose of this paper is to shed some light on the importance of using learning diaries. To this end, we will first briefly refer to the definition of process and process analysis in the field of education. Then, we will explore the importance of analyzing processes in this field. We will also shed some light on the different types of diaries and their advantages mainly -among others- providing data that allow intra-individual analysis in addition to the traditional inter-individual analysis as well as studying synchronous as well as asynchronous relationships. We will also deal with the ways we assess their psychometric characteristics. Finally, much focus will be on their data analysis procedures mainly Time series analysis using ARIMA Models. To conclude, based on the reviewed literature, we highly recommend the use of diaries in real learning situations. This will help teachers as well as learners describe and understand the learning process and trajectories so as to improve the learning outcomes. These learning diaries can be used as monitoring tools by teachers to encourage learners use the suitable strategies and show the desired behaviors. They also allow them to collect data on their learners' learning process so as to make the necessary interventions. They can also be used as self-monitoring tools by learners in early learning stages to collect data on the process of learning in general and self-regulated learning in particular so as to make the necessary changes in self-monitoring. They can also be self-assessment tools since they draw learners' attention to the strategies used and their relationship with the achieved outcomes then take decisions as to keep the useful strategies and develop the missing ones.

*Keywords:* learning diaries, learning process, self-regulated learning, time series analysis, intra-individual analysis



# GENERATIVE AI AS A METACOGNITIVE AGENT: A COMPARATIVE MIXED-METHOD STUDY WITH HUMAN PARTICIPANTS ON COACHING EXAM PERFORMANCE

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*Abstract.* This study investigates the metacognitive capabilities of Large Language Models (LLMs) relative to human metacognition in the context of the International Coaching Federation (ICF)-mimicking exam, a situational judgment test that requires participants to identify the “best” and the “worst” response in given coaching situations. We assessed the metacognitive performance of human participants and five advanced LLMs: GPT-4, Claude-3-Opus 3, Mistral Large, Llama 3, and Gemini 1.5 Pro. Metacognitive sensitivity (MS) was measured as an ability to discriminate between correct and incorrect responses based on confidence rating. The Brier score (BS) was used as a type of metacognitive metric that measures the accuracy of probabilistic predictions, while metacognitive bias (MB) was measured as a tendency towards overconfidence or under confidence compared to the proportion of correct response. Overall data for “best” responses point to excellent metacognitive metrics in both human participants ( $MS= 1.00$ ,  $BS= 0.00$ ,  $MB= 0.00$ ) and LLMs ( $MS= 0.98$ ,  $BS= 0.00$ ,  $MB= -0.07$ ). When it comes to judging “worst” response, low metacognitive sensitivity was observed both in human participants ( $MS= -0.04$ ) and in LLMs ( $MS= 0.03$ ). LLMs as a group showed moderate predictive accuracy ( $BS= 0.40$ ), compared to human participants who demonstrated low predictive accuracy ( $BS= 0.67$ ). In terms of bias, human participants tended to have greater levels of over confidence ( $MB= 0.74$ ) compared to LLMs ( $MB= 0.21$ ). The study suggests that Generative AI can effectively engage in human-like metacognitive processing without conscious awareness. Implications of the study are discussed in relation to development of AI simulators that scaffold cognitive and metacognitive aspects of mastering coaching competencies. More broadly, implications of these results are discussed in relation to development of metacognitive modules that lead towards more autonomous and intuitive AI systems.

*Keywords:* Generative AI, metacognition, coaching exam

## DISCIPLINARY PRACTICES AND TEACHER-STUDENT RELATIONS IN HIGH SCHOOL

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*Abstract.* School climate refers to the quality and nature of school life. One of the components of this multidimensional construct is the relationship between teacher and student. The aim of this study is to examine the impact of teachers' disciplinary techniques on the quality of teacher-student relations. The research sample consisted of 860 students (59.6% female) aged 15 to 19 years ( $M = 16.38$ ,  $SD = 1.05$ ). Data on teachers' disciplinary practices were collected using the Delaware Positive, Punitive, and SEL Techniques Scale (four-point Likert-type scale,  $\alpha = .87$ ). The scale consists of three subscales that measure students' perceptions of the use of positive behavioral techniques (6 items,  $\alpha = .88$ ), punitive techniques (6 items,  $\alpha = .74$ ), and social emotional learning techniques (6 items,  $\alpha = .88$ ). Relationships between teachers and students were assessed using the Teacher-Student Relations subscale of the Delaware School Climate Scale (4 items,  $\alpha = .90$ ). Results indicate that teacher's techniques are statistically significantly correlated with student-teacher relations ( $r_{(858)} = .57, p < .001$ ). The strongest positive correlation was found between positive techniques and teacher-student relations ( $r_{(858)} = .72, p < .001$ ), then with SEL learning techniques ( $r_{(858)} = .66, p < .001$ ), while a weak negative correlation was found between punitive practices and relationships between teachers and students ( $r_{(858)} = -.31, p < .001$ ). This correlation remains even when respondents' age and gender are taken into account. The findings demonstrate how important the use of positive and SEL teacher's disciplinary techniques may be for the promotion of interpersonal relationships and, consequently, for the improvement of the school climate.

*Keywords:* disciplinary practices, teacher-student relations, school climate, high school.

# CHARACTERISTICS OF VIOLENT VICTIMIZATION OF CHILDREN WITHOUT PARENTAL CARE IN RESIDENTIAL CARE FACILITIES

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*Abstract.* Violence against children can be one of the reasons for separating children from their family and their placement in an institution, but this does not necessarily mean the end of violence for these children. Children without parental care who are placed in residential care facilities are at an increased risk of becoming victims of violence during their stay there. To present the characteristics of violent victimization that these children are exposed to, a systematic scientific literature analysis was conducted. A systematic literature search was made following the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA). The results of 10 studies published in academic journals, in Serbian and English, in the period between 1999 and 2017 have been analyzed. The selection criteria included relevance to the topic of violent victimization of children without parental care in residential care facilities, with a focus on studies that provided quantitative data on the prevalence and types of violence experienced by these children. The results of all studies indicate that 90% of children have experienced some form of violence during their stay in residential care homes. Psychological and physical violence are the most prevalent, while sexual violence is less common but still significantly present. Insults and physical assaults are the most frequent forms of violence. Perpetrators of violence are most often other children in the institution. Both boys and girls are at equal risk of becoming victims, but boys more often appear as perpetrators. The consequences of violence are numerous, including physical injuries, fear, anxiety, and problems in social functioning. Some factors associated with violence include the presence of behavioral disorders in children, poor conditions in the institution, and an insufficient number of professional staff. Although all research shows that violence in residential care homes for children is a significant problem, there are very few studies on this topic. The last major study in Serbia was conducted more than 15 years ago, making it necessary to conduct new research on this topic in the future.

*Keywords:* violence, children without parental care, residential homes for children.

# THE RELATIONSHIP BETWEEN RESILIENCE, EMPATHY, AND PEER VIOLENCE AMONG HIGH SCHOOL STUDENTS IN THE REPUBLIC OF NORTH MACEDONIA

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*Abstract.* As a very current social problem, peer violence, regardless of the size of the school or the environment in which it is located, makes the school the place with the highest prevalence of violence. The main goals of this research were to determine whether resilience and empathy are statistically significant predictors of peer violence among high school students. The research was conducted on a convenient sample of respondents ( $N= 112$ ). The age of the respondents ranges from 15 to 19 years, where 37 (32.7%) are male and 75 (66.4%) are female, from 19 different high schools. The consent about informed consent was verified and signed by the professional service and the principals of all schools. To determine the presence of resilience with all three aspects of individual, social resources and contextual capacities, the RRC-ARM [Resilience Research Center Adult Resilience Measure] instrument was used, and the Empathy Readiness Assessment EMI questionnaire, which contains four subscales : EN- was used to examine empathy with negative emotional states, EP – empathy with positive emotional states, SR – empathy as a social role and ER – emotional reactions provoked by empathy, while the PRONA questionnaire (Abbreviation of Assessment of Violent Behavior) was used to examine peer violence, which contains two subscales and that, Exposure to peer violence and Tendency to violent behavior, as well as a questionnaire to determine sociodemographic variables (gender, age, school). A correlation analysis was conducted and the results were obtained that there is a statistically significant, negative correlation between resilience and peer violence, as well as a statistically significant and negative correlation between peer violence and empathy. In order to determine resilience and empathy as predictors of peer violence, multiple regression analysis was used. The results show that resilience and empathy taken together statistically significantly predict exposure to peer violence in high school students. ( $R= .366$ ,  $R^2 =.134$ ,  $F (2, 109)= 8.407$ ,  $p<0.01$ ). In more detail, based on the  $R^2$  coefficient, we see that this model predicts 13% of the variance of exposure to peer violence, while based on the  $\beta$  ( $\beta=-.363$ ,  $p<0.01$ ) coefficient, we conclude that resilience is the best predictor of exposure to peer violence, it is negative and statistically significant at 0.01, while empathy does not stand out as a separate statistically significant predictor. The obtained results also suggest that resilience and empathy are statistically significant predictors of propensity for peer violence at the 0.05 level ( $R= .302$ ,  $R^2 =.091$ ,  $F (2, 109)= 5,474$ ,  $p<0.05$ ). In more detail, based on the  $R^2$  coefficient, we see that this model predicts 9% of the tendency to peer violence, in the explanation of the tendency to peer violence, resilience contributes significantly ( $\beta=-.278$ ,  $p<0.05$ ).

*Keywords:* peer violence, resilience, empathy, high school students

**Thematic Session**  
**ORGANIZATIONAL AND SOCIAL PSYCHOLOGY 1**



## REDUCING THE SOCIAL DISTANCE BETWEEN CHILDREN FROM THE SERBIAN, ROMA, AND BURUNDIAN POPULATIONS

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*Abstract.* The concept of social distance is frequently mentioned when talking about intergroup relations. Often there are findings about the distance between members of the majority population and various marginalized groups. Inspired by Allport's and later ideas about the contact hypothesis, that is, that the social "gap" between groups can be alleviated if their members cooperate and have a pleasant interaction, we decided to conduct action research with children from the majority (Serbian), minority (Roma) and refugee (Burundian) population, who were beneficiaries of humanitarian aid in Belgrade (Serbia). We aimed to reduce the social distance between them. All three groups were represented by 9 girls and 10 boys aged 11-12 ( $M = 11.16$ ,  $SD = 0.37$ ). In the first phase, respondents were given the Bogardus social distance scale with (yes/no) questions about their willingness to accept different types of relations (being neighbors, schoolmates, friends, family members) with children from the other two groups. The obtained answers indicated a relatively high distance: acceptance of being neighbors varied from 21.1% to 100%, of being schoolmates from 15.8% to 73.7%, of being friends from 26.3% to 47.4%, and of being family members from 0% to 26.3 %. After that, the humanitarian workers organized a series of joint activities (sports, technical workshops, environmental workshops, art workshops, familiarization with cultural differences, and excursions) which included children from three target groups together in a period of three months. These activities were designed to enable children from different populations to get to know each other as well as possible and interact together. After involving in these activities for three months, respondents were again asked the same questions from the Bogardus scale. New answers were different: acceptance of being neighbors varied from 94.7% to 100%, of being schoolmates from 63.2% to 100%, of being friends from 84.2% to 100%, and of being family members from 21.2% to 100 %. The obtained data were then analyzed using Chi-square statistic. The results showed that the social distance was significantly reduced on almost all questions and among children from each target group. The Chi-square statistic values ranged from  $\chi^2(1, N = 38) = 4.47$  ( $p = .034$ ) to  $\chi^2(1, N = 38) = 27.64$  ( $p = .001$ ). These findings support the contact hypothesis and suggest that mutual activities and interaction effectively overcome the social distance between different social groups.

*Keywords:* the contact hypothesis; social distance; social groups; action research

# THE IMPACT OF WORKPLACE OSTRACISM ON WORK-RELATED RUMINATIONS: THE MODERATING ROLE OF MICRO-BREAKS AMONG MILITARY SERVICE PERSONNEL

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**Abstract.** Although empirical literature has examined various aspects of workplace ostracism, the link between workplace ostracism, work-related rumination, and the potential buffering role of workplace micro-breaks in a military context remains unexplored. Additionally, knowledge regarding the potential moderating role of micro-breaks on the relationship between workplace ostracism and work-related ruminations is limited. This study, leveraging the Conservation of Resources Theory and Effort-Recovery Model, investigates the relationship between workplace ostracism, work-related ruminations, and the moderating effect of micro-breaks among non-flight and flight crew personnel within the Romanian Air Force. A cross-sectional survey was conducted in October 2023 with 210 military personnel, employing moderated linear regression with residual centering to analyze the data. Descriptive statistics indicated high outliers in ostracism, unrelated micro-breaks, and rumination variables. The Spearman's  $\rho$  correlation matrix revealed statistically significant associations between ostracism, micro-breaks (both related and unrelated to work), and rumination. Findings show a positive association between workplace ostracism and work-related ruminations ( $B = 0.32$ ,  $t = 6.06$ ,  $p < 0.001$ ,  $\beta = 0.37$ ). Our study further examined the moderating role of micro-breaks in the relationship between workplace ostracism and work-related ruminations. We used a moderated linear regression with residual centering to predict rumination by ostracism, micro-breaks - unrelated to work, micro-breaks - related to work, and the interaction terms between ostracism and the two components of micro-breaks. Micro-breaks related to work significantly moderated this relationship, with high levels intensifying the effect of ostracism on rumination (simple slope at  $+1SD = 0.44$ ,  $t = 5.76$ ,  $p < 0.001$ ). Conversely, micro-breaks unrelated to work showed a marginally significant moderation effect ( $B = 0.01$ ,  $t = 1.90$ ,  $p = 0.06$ ,  $\beta = 0.14$ ). Based on results, it appears that micro-breaks related to work played a significant



role in moderating the relationship between workplace ostracism and work-related rumination, whereas micro-breaks unrelated to work did not show a significant moderation effect. This suggests that the type of activities engaged in during micro-breaks, particularly those related to work, had a more pronounced impact on the association between workplace ostracism and work-related rumination. Our study contributes to existing literature by elucidating how workplace ostracism influences recovery, both at work and at home, from a resource perspective. We highlight the role of micro-breaks as strategies to recover lost resources when facing workplace stressors, thereby buffering the effects of workplace ostracism on work-related ruminations later in the evening. Theoretical and practical implications are discussed, along with suggestions for future research directions.

Keywords: workplace ostracism, work-related ruminations, micro-breaks, military organizations

# DIGITAL TRANSFORMATION AND STRATEGIC LEADERSHIP

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*Abstract.* In the contemporary landscape of organizational development, the convergence of digital transformation and artificial intelligence (AI) emerges as a pivotal force reshaping the paradigms of learning and leadership. This study combines review of scientific literature and qualitative analysis to dissect the multifaceted relationship between digital transformation, AI, organizational learning, and leadership. By problematizing the integration of these technologies, the paper identifies hidden insights and unravels complex challenges that accompany their adoption in organizational contexts. As digital transformation and AI become increasingly prevalent in organizational contexts, they herald a new era of possibilities, augmenting traditional learning methodologies and redefining leadership paradigms. However, beneath the surface of promise lie profound questions concerning the ethical implications, workforce dynamics, and the redistribution of power within organizations. Through a critical lens, this paper navigates through the intricacies of digital transformation and AI, shedding light on their transformative potential and their inherent complexities. The paper examines how these technologies disrupt traditional organizational structures, necessitating a re-evaluation of organizational learning frameworks and strategic leadership models. Furthermore, it discusses the nuances of digital transformation and AI adoption, exploring strategies for optimizing their benefits while mitigating associated risks.

*Keywords:* Digital transformation, Artificial intelligence (AI), Organizational learning, Strategic Leadership, Technological innovations.

# BASIC PSYCHOLOGICAL NEEDS AS PREDICTORS OF JOB SATISFACTION

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*Abstract.* Basic psychological needs as predictors of job satisfaction were examined as part of the study conducted to investigate the relationship between the factors of self-determination theory and job satisfaction. The aim of the paper was to investigate the relationship between the basic psychological needs, as defined by self-determination theory (need for autonomy, need for competence and need for relatedness) and job satisfaction. The research was conducted on a convenience sample of 226 actively employed respondents, ranging in age from 23 to 59 ( $M_{\text{age}} = 39.51, SD=7.29$ ), 140 of which declaring as female (61.9%) and 86 as male (38.1%). To assess basic psychological needs as predictors of job satisfaction multiple linear regression analysis was used, with job satisfaction as the criterion variable, and the factors of self-determination theory as predictors. Variables were measured by psychological measurement instruments constructed for the author's master's thesis, and distributed as a five-part questionnaire - the first part of the questionnaire covers sociodemographic variables, the middle 3 parts represent an instrument that uses 3 subscales to operationalize 3 basic psychological needs (reliability per scale, as measured by Cronbach's Alpha: need for autonomy - 0.963; need for competence-0.969 and need for relatedness - 0.980), and the final part is an instrument used to operationalize job satisfaction. The results confirmed that job satisfaction can be predicted based on all three basic psychological needs, and that support of autonomy, support of competence and support of relatedness explain a significant portion of job satisfaction, accounting for 55% of the variance ( $R^2=.551, F(3, 222) = 90.727, p < 0.01$ ). Among these factors, the greatest impact on job satisfaction has support of autonomy ( $\beta = 0.414, p < 0.01$ ), followed by support of relatedness ( $\beta = 0.235, p < 0.01$ ), with support of competence having the least impact on employee satisfaction ( $\beta = 0.152, p < 0.01$ ). The results suggest that organizations can improve job satisfaction by fostering environments that support employees' basic psychological needs.

*Keywords:* self-determination theory, job satisfaction, need for autonomy, need for competence, need for relatedness

# **DIFFERENCES IN THE SOCIOCULTURAL ADAPTATION OF ARAB IMMIGRANT WOMEN IN THE EUROPEAN CONTEXT BASED ON THEIR WORK AND MARITAL STATUS**

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*Abstract.* The study is an essential contribution to immigration studies as it examines the complex relationship between employment and marital status in the sociocultural adaptation of Arab women in a different cultural context, specifically in Europe. Women who immigrated to Europe in the 21st century often encounter challenges, including seeking economic opportunities, reuniting with family members, or seeking refuge. The significant cultural differences they experience require them to adapt to the host country. In particular, Arab immigrant women undergo physical, cognitive, mental, and social changes and must take on greater responsibilities. These changes and responsibilities include new cultural, environmental, political, and economic aspects. The adaptation of 300 Arab immigrant women residing in three European countries (Turkey (European part of Istanbul), England, and Bulgaria) was measured with a 21-item Revised-Sociocultural adaptation scale (Wilson,2013). The factor analysis was made, and the four dimensions were extracted and interpreted: work integration, interpersonal communication, ecological adaptation, and community involvement. The one-way ANOVA analysis revealed the differences in age, country, work status, marital status, motherhood status, and a number of children variables, which shows significant differences within each group, especially in work and marital status, which this paper will focus on. A correlation analysis of the four factors of sociocultural adaptation was conducted. The findings offer practical recommendations to facilitate sociocultural adaptation based on the results, equipping the reader with a clear framework for addressing the challenges faced by Arab immigrant women in Europe. Additionally, the study contributes to immigration studies by offering tangible solutions for these unique challenges.

*Keywords:* Arab immigrant women, factors of sociocultural adaptation, work status, marital status

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