PSYCHOLOGY IN THE WORLD OF SCIENCE

International Thematic Proceedia

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16th Days of Applied Psychology

PSYCHOLOGY IN THE WORLD OF SCIENCE

Niš, Serbia, September 25th & 26th 2020

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CONTENTS

FOREWORD

The International Thematic Proceedia titled „*Psychology in the world of science*" is a publication from the 16th International Conference "Days of Applied Psychology" held on September 25th & 26th 2020 at the Faculty of Philosophy, University of Niš.

This is a traditional annual nonprofit conference which has been organized since 2005 by the Department of Psychology of the Faculty of Philosophy, University of Niš, with the support and co-financing of the Ministry of Education, Science and Technological Development of the Republic of Serbia. The conference started with the idea of gathering researchers and practitioners who discuss the link between science and practice in different psychological areas. From the very start, this gathering has welcomed international participants, and year after year this number is on the rise.

This scientific publication contains 18 peer-reviewed articles which can be classified as original scientific papers and as review papers. The authors of these manuscripts come from six countries: Portugal, Bosnia and Herzegovina, Slovenia, Bulgaria, Turkey, and Republic of Serbia.

The Proceedings begin with eight papers presented within following Symposiums: Beyond Behavior: Using Technology to inform Applied Psychology; Schema Therapy – its role and application in the world today; Intercutural Sensitivity and Education; Sexual Behavior and Stressful Experiences in students: the role of Personality Dimensions and Attachment; Health perception and psychological correlates of health behavior in young people; Applied Psychology of Morality. Other papers belong to the different areas of psychology, reflecting the scope of interest of the authors as well as the topic of the conference. They are organized into the following thematic sections: Organizational Psychology; Educational Psychology and Cyberpsychology; Clinical Psychology and Psychotherapy; and Individual Differences.

Within section from the symposia *"Beyond Behavior: Using Technology to inform Applied Psychology"* you can see the paper presenting the use of technology in the psychological studies and research, like EEG and brain stimulation during sleep, ERP, Computer modeling of categorisation, and, finally, about use of Eye-tracking technologies and reading.

Within next section *"Schema Therapy – its role and application in the world today"* the readers will have the chance to read the review paper which explores the role of Early Maladaptive Schemas and Schema Modes in work with COVID-19 related issues and self-care, on the sample of mental health professionals.

Within third symposia *"Intercutural Sensitivity and Education"* the readers will have the chance to read the research paper in which the autors present their research examining intercultural sensitivity, ethnocultural empathy and

various socio-demographic variables on the sample of parents with children with developmental disorders.

Following subsection presents the paper from the symposia *"Sexual Behavior and Stressful Experiences in students: the role of Personality Dimensions and Attachment"* and the readers will have the chance to read the research paper which explores weather sexual satisfaction can be predicted based on sexual personality dimensions.

Fifth subsection and symposia titled *"Health perception and psychological correlates of health behavior in young people"* presents us with the research paper related to stress as a predictor of subjective assessment of the health status in the sample of children and youth.

Sixst and final symposia *"Applied Psychology of Morality"* provides us with two research papers examining belief in ujust world and personality in relation with sexist attitudes as well as attitudes towards imigrants in relation with empathy and authoritarian view of the world.

Following subsection is *Organizational Psychology*. The papers presented in this subsection deal show the role of both chance and individuals initiative in one's career, as well as the role of some demographic variables in the job satisfacition on the sample of primary school teachers.

In the subsection *Educational and Cyberpsychology* we have papers examining student's assessment of online teaching very present in the time of COVID-19 pandemics, and the relation between strategies students use while reading digital texts with achievement.

Subsection *Clinical Psychology and Psychotherapy* comes next. In this subsection the readers will have the chance to read about differences in recognition of emotional expressions between patients with some psychological disorders and healthy subjects. Also, readers will have the chance to read about psychoanalysis in the context of aberrant forms of prosody. Finally, readers will have the chance to read about dreams of adolescents from the context of their narratives.

Final subsection is the one of *Individual Differences*. In this subsection the readers will have the chance to read about relation between personality and generativity, social support and generativity, as well as about relation between basic human values and personality traits from the dark triad.

The selected papers depict how theory-based approaches foster practical implications important for development of psychological interventions in a wide array of human behavior. We hope that the knowledge and insights presented in this volume will be helpful to a broad audience of students, practitioners, and researchers who are interested in basing their work on scientific research and theory.

At the end, we would like to thank to all the reviewers who contributed to the quality of the publication.

Niš, September 2021

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BEYOND BEHAVIOUR: USING TECHNOLOGY TO INFORM APPLIED PSYCHOLOGY

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BEYOND BEHAVIOUR: USING TECHNOLOGY TO INFORM APPLIED PSYCHOLOGY

Abstract

Here we presented a few relatively novel methodologies which shed light on applied psychology and offer insights that we would not have without these technological advancements. Namely, we will present how brain stimulation during certain sleep stages can enhance subsequent memory performance, how EEG/ERP can be used in attention research, in detecting guilty knowledge or in diagnosing schizophrenia. Further on, a computational simulation of human cognitive processes will be demonstrated followed by demonstration of using eye tracking methodology to study individual differences in reading. Finally, we will present a work where four different methodologies (EEG, eye-tracking, EDA and HRV) were combined in order to shed light on developmental differences in reading. Looking back to the beginnings of psychology, 140 years ago, when Wilhelm Wundt founded the first psychology laboratory, we can conclude that psychology has made tremendous progress from dealing with observable and measurable behaviors to the ability to peek into and uncover secrets of the so-called black box.

Key words: applied psychology, EEG/ERP, eye-tracking, cognitive modelling.

Introduction

Psychology was officially born in Wilhelm Wunt's laboratory 140 years ago, in 1879 to be precise. Experimental and laboratory approaches, and precise measurements, contributed to the recognition of psychology as a science, which in that period, within Wunt's laboratory in Leipzig, was primarily focused on measuring perceptual phenomena as well as phenomena of consciousness through measurement of reaction times. The results they reached then, and the methodology they developed, still have their place today, not only in the history of psychology, but also in laying the foundations for acquiring objective knowledge about human functioning.

Today, after almost a century and a half, psychology, as a science, has at its disposal methodologies by which it is able to come to conclusions, not only about "surface" measurements, purely behavioral ones, but also internal, neurocognitive,

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which during the period behaviorism, were excluded from the focus of researchers, due to the impossibility of objective measurement. Nowadays, I believe, those behavioral psychologists would be more than pleased to be in position to look deeper into the so-called black box, and with the same methodological rigor, put neurocognitive phenomena in the focus of their interests.

Here we presented a few relatively novel methodologies which shed light on applied psychology and offer insights that we would not have without these technological advancements. Firstly, it was shown how brain stimulation during certain sleep stages can enhance subsequent memory performance, how EEG/ERP can be used in attention research, in detecting guilty knowledge or in diagnosing schizophrenia. Further on, a computational simulation of human cognitive processes was demonstrated followed by demonstration of using eye tracking methodology to study individual differences in reading. Finally, a recent work was presented where four different methodologies (EEG, eye-tracking, EDA and HRV) were combined in order to shed light on developmental differences in reading.

EEG and brain stimulation during sleep

Brain electrical activity (EEG) is the basic procedure by which sleep is examined in laboratory conditions. The registered electrical activity of the brain is manifested as a series of waves of different frequencies and amplitudes. The basic EEG waves are: Alpha rhythm, whose frequency is 8 - 12 Hz, amplitude 20-100 µV and is usually recorded in a relaxed state with closed eyes; Beta rhythm, whose frequency is above 13 Hz (usually 18-25), amplitude 5 -20 µV and is a sign of increased alertness and attention, Theta rhythm whose frequency is 4 -7 Hz and which appears to a greater extent in the EEG at children, adolescents and young adults and Delta rhythm whose frequency is below 4 Hz, amplitude at least 75 µV and is characteristic of deep sleep. Delta rhythm cannot be seen during short sleep, and when it does not appear during sleep, it is an important indicator for differential diagnosis. Sleep begins with the nonREM (nREM) phase, also called quiet or synchronized, S-sleep. This phase is divided into four phases: phases 3 and 4 are called low frequency sleep during which neural activity is highly synchronized. After approximately 90 minutes from the beginning of sleep, phases 2 and 3 enter the REM phase when the EEG becomes desynchronized, with many irregular, high-frequency waves, when rapid eye movement occurs, which is why the phase got its name - REM (rapid eye movement). This sleep is also called paradoxical, desynchronized or D-sleep, active sleep. When a person falls asleep, he enters phase 1, and then phases 2, 3, and 4. External stimuli can stop this progression, e.g. noise during phase 3 can prolong that phase, or cause a return to phase 2 or 1 or even waking up. After approximately 90 min, transition from phase 4 of nREM sleep to phases 3 and 2 to REM phase. After a period of REM

sleep, the entire sequence is repeated, lasting 90-100 minutes. At the beginning of sleep, phases 3 and 4 are dominant, and towards morning, phase 4 is lost, phase 3 is shortened, and REM phase is prolonged. If a sleeper wakes up during REM sleep, he will report that he dreamed in 80-90% of cases. However, if he wakes up during the nonREM phase, he will find it harder to report what he dreamed. This percentage varies from 10-70% in different studies. Large variations occur primarily due to different definitions of sleep - some authors believe that a dream is just a complex, well-defined experience, while others believe that a vague experience like an isolated image is also a dream. This is also the main difference in the quality of dreams that occur in the REM or NREM phase: sleep during REM regularly refers to the whole sequence of events, is visually complex and has an action, while sleep during nonREM refers to some isolated image (Gazzaniga et al., 2009).

A growing body of research demonstrated that sleep has an important role in learning and memory, emphasizing timely sleep as one of the key factors in successful memory consolidation (Sučević, 2020). The sleep architecture reflects brain maturation and cognitive development in children, and alterations to sleep patterns are found to be present in certain developmental disorders, such as the ADHD (Scarpelli et al., 2019). Changes in sleep patterns are also related to cognitive decline in the aging population, and there is some evidence suggesting that specific sleep alterations are present in clinical conditions, such as schizophrenia (Scullin & Bliwise, 2015). Recently, several studies have revealed that sleep can also represent a possible tool for intervention and improvement of cognitive functioning. For instance, it has been shown that brain stimulation during certain sleep stages can enhance subsequent memory performance (Grimaldi et al., 2020). This is a new and promising line of research that is yet to determine to which extent intervening with sleep can drive improvements in cognitive functioning.

ERP and attention, deception detection and schizophrenia detection

Unlike the EEG method, which represents spontaneous brain activity, ERP records individual, stimulus-related potentials. However, registering the ERP potential is not an easy task, primarily because the ERP signal is mixed with a number of other electrical signals at all times. Namely, in addition to the desired, i.e., stimulus-related potential, the electrodes also record spontaneous brain activity, which in the context of research represents noise. As a result, activity related to a single stimulus cannot be easily read by visual inspection of the EEG record.

The solution to this problem lies in the display of numerous stimuli (40-100) that belong to the same experimental condition, after which the brain waves elicited by the number of stimuli for each individual condition are averaged. In

this way, an isolated ERP wave represents a typical brain response to the stimuli shown, whereby randomly generated waves, so-called electrical noises, are removed. Thus, from a long, continuous EEG wave, a segments corresponding to the time of stimuli presentation are isolated. These segments are then averaged into the ERP profile, which represents a typical brain response to that type of stimulus (Luck, 2005). In the 1960s and 1970s, a number of ERP experiments were performed that addressed the neurophysiological foundations of controlled auditory attention (Hillyard et al., 1973). Using the paradigm with dichotomous listening and attention to one channel, it was found that the N1 amplitude of the ERP signal is increased at the stimuli to which attention was paid. As early as 90ms after the stimulus is displayed, the N1 component reaches its peak. The discovery of this wave on the neurophysiological level confirmed behavioral findings with dichotomous hearing, and this component of the ERP wave is called auditory N1 potential. In addition, it has been shown that attention can have an impact on auditory stimulus processing already in the early stages of cognitive processing, which supports theories of early selection.

ERP has deepened our understanding of attentional processes, opening new avenues for future research (Vilotijević, 2020). Namely, many attentional capture theories hypothesized that threatening stimuli would elicit attention capture in a bottom-up fashion, but most behavioural studies did not find any reaction time differences between threatening and neutral stimuli (Kappenman, 2014). However, recent ERP studies showed that a threat stimuli elicited a robust N2pc demonstrating an attentional bias on a threat (Gaspelin & Luck, 2018). Moreover, by using ERP it was found out that not all salient stimuli elicit N2pc but only those that are task-relevant (targets). Namely, salient but task-irrelevant stimuli (distractors) are actually being suppressed and elicited Pd.

Another avenue for future research is application of ERP in combination with a Guilty Knowledge Test (GKT, Lykken, 1959), which is a questioning technique that can be used to determine whether individuals possess guilty knowledge stored in memory or not. The test consists of a multiple-choice question concerning the crime, including one crime-relevant detail known only to the perpetrator (relevant item) and several crime-irrelevant details (irrelevant items) chosen such that innocent individuals cannot distinguish among relevant and irrelevant items (Milosavljević, 2020). The ERP P300 component is a positive potential that typically occurs between 300–800 ms after stimulus onset, which represents an unpredictable, rare, new, or meaningful change in stimulation (Luck, 2005). P300 component can be used as an electrophysiological marker for involuntary recognition of crime-related details because only for the perpetrator relevant items will be meaningful. In laboratory conditions, the accuracy of GKT-P300 usually ranges between 70% and 90%. There was an attempt to develop commercialized automated P300/ERP technology designed for the detection of deception, which can be easily used by law enforcement in order to help them to solve crime cases (Rosenfeld, 2002). However, despite all user-friendly advantages that the newly

developed P300/ERP technology brings, it does not necessarily lead to the higher detection rate of guilty knowledge, as will be demonstrated in this presentation.

Another promising avenue is an application of the ERP in diagnosing schizophrenia (Jovanović, 2020). A lot has been said about schizophrenia so far: from psychoanalytical theories that emphasize early childhood development to strictly biological point that schizophrenia is a neurological disorder. Today there is no doubt that many factors contribute to the development of the disorder, with genetics as a "key player". Since its relatively late age of onset and variable symptomatic manifestations, schizophrenia can be undiagnosed or misdiagnosed, leading to lack of proper treatment that can significantly impact one's life quality. There is still no objective diagnostic test or validated biological marker that could clearly distinguish schizophrenia from other similar diseases. Development of ERP technique that is based on EEG wave analysis takes us one step closer to achieving that goal. So far, ERP studies in schizophrenia pointed mostly to the P300 component that has proven to be severely impaired both in auditory and visual domain (Ford, 1999). However, since P300 deficits are not specific to schizophrenia, there is still a lot of work to be done ranging from fine tuning of existing components and paradigms to possible construction of schizophrenia specific combinations of various component features.

Computer modeling of categorisation

Computer models are inspired by the way information is processed on the brain level (McLeod et al., 1998). Nowadays, the dominant, typical, connectionist models consist of several levels of processing units. Units play a similar role as neurons or groups of neurons on the brain plane. Namely, each unit collects information from the previous level, performs simple calculations (e.g. whether the amount of information is above or below the response threshold), and on the basis of that calculation forwards the information to the next level of units. The activation scheme presented in the first level of units represents the input stimulus. This scheme is transformed through the following levels so that at the last level the activity scheme represents the response or reaction of the model. The impact that each unit in the model has on the next level depends on the strength of the connection between them. The production of the correct answer, based on the given initial activation scheme, is achieved through a change in the strength of the connections between the units. In doing so, the goal of modeling is for models to be based on principles and calculations such as those performed by the brain system and precisely in the way the brain system functions (McLeod et al., 1998).

The effects of label difference on category learning was demonstrated with sampling training in a different number of trainings (N=1, 5, 10, 20, 100) for the simple network (Lalić, 2020). For the lower number of training sessions (N=1 or 5),

results did not show any notable relation between input and output. However, once the number of training sessions is increased (N=20 or 100), results are getting more stable and functional dependence between input (label difference) and output (number of training epochs – learning) becomes almost clearly linear. Results signify the importance of the sampling training method in connectionist modelling, particularly once small and tiny effects need to be captured and identified.

Eye-tracking and reading

The method of tracking eye movements connects eye movements with the location of the gaze. The way to register the location of the view is relatively simple. Namely, the eye lens has the property of reflecting light, and if we illuminate the eye with a small source of infra-red light at a certain angle, based on the angle of reflection we can determine the eye orientation, and thus the direction, i.e., view location. As early as the 19th century, the French ophthalmologist Louis Émile Javal, without having a more elaborate methodology, and based on mere observation, noticed and described that during the reading process the eyes make sudden jumps (saccades), which are interrupted by periods of rest (fixations). One of the basic findings in the study of the reading process is that visual information is processed during the period of fixation, mainly from left to right (Rayner, 1998). Fixations usually last about 200-250 ms (although this range can vary from 50 to 500 ms). On the other hand, during eye movements that occur in the periods between fixations, there is no adoption of information. Eye movements or saccades usually last about 20-30 ms and during these periods there is a surplus of visual processing (Matin, 1974). On average, the eye jump occurs after every 7-8 letter places (although this range can also vary significantly - from one to 20 letter places) in readers of alphabetic language systems. Experimental findings support the fact that the number of letters between the jumps, rather than the visual angle, is a better measure of reading speed (Morrison & Rayner, 1981). At the same time, about 10-15% of the saccades that the reader makes fall on the so-called regressions, ie. views on parts of the text that have already been read. The harder the reading, the longer the duration of fixations, the smaller the size of the saccades, and the higher the number of regressions.

Here we presented three examples of how this approach can make contribution to our understanding of individual differences in reading proficiency (Šoškić, 2020). In the first study, sentence reading was compared between high and low skilled adults to examine differences in eye movement patterns while reading target words. In the second selected study (Krstić et al., 2018), participants read several paragraphs long texts and answered questions about their contents, allowing examination of more global characteristics of reading, such as problem solving strategy and allocation of attention to different parts of the text. In the

third example, eye movements of dyslexic participants during a nonverbal visual task were examined, demonstrating how experimental paradigms from other fields of eye tracking research can be used to study individual differences in reading.

Finally, in the last study which goes beyond behaviour, a multimodal sensor measurement was employed to examine the influence of background colour on the reading task in children at different developmental stages (Jakovljević et. al., 2020). The reason to combine different modalities was to find a more objective approach to understanding the developmental differences in children's reading as well as to understand the contribution of different modalities and combinations of modalities in the process of reading text on a white vs colour overlay and background. Measurements of electroencephalography (EEG), eye-tracking, electrodermal activity (EDA) and heart rate variability (HRV) were employed to assess the influence of background and overlay colour on reading performance in second and third grade students of elementary school. The results showed a decreasing trend with age regarding EEG power bands (Alpha, Beta, Delta, Theta) and lower scores of reading duration and eye-tracking measures in younger children compared to older children. HRV parameters showed higher scores in second graders, with higher stress levels readable from EDA measures as well.

Conclusion

Looking back to the beginnings of psychology, 140 years ago, when Wilhelm Wundt founded the first psychology laboratory, we can conclude that psychology has made tremendous progress from dealing with observable and measurable behaviors to the ability to peek into and uncover secrets of the so-called black box. This progress, at least to some degree, is due to the technological advancement of, among others, EEG/ERP, eye-tracking and cognitive modelling. In this work, it was shown how brain stimulation during certain sleep stages can enhance subsequent memory performance, how EEG/ERP can be used in attention research, in detecting guilty knowledge and in diagnosing schizophrenia. It has been demonstrated how state of the art technology can inform applied psychology and lead the whole field to gain insights beyond behaviour. There is no doubt that these *technological advances* will continue to further accelerate discoveries in the field of psychology.

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POZITIVNI EFEKTI TEHNOLOŠKOG NAPRETKA NA PRIMENJENU PSIHOLOGIJU

Apstrakt

U radu će biti predstavljeno nekoliko relativno novih metodologija koje nude nova znanja u oblasti primenjene psihologije, ali i nove uvide koje bez ovih tehnoloških dostignuća ne bismo imali. Naime, predstavićemo kako stimulacija mozga tokom određenih faza spavanja može poboljšati naknadne performanse memorije, kako se EEG/ERP može koristiti u istraživanju pažnje, u detekciji laganja ili dijagnozi shizofrenije. Takođe će biti prikazana računarska simulacija procesa kategorizacije, praćena demonstracijom korišćenja metodologije praćenja oka za proučavanje individualnih razlika u čitanju. Na kraju ćemo predstaviti rad koji kombinuje četiri različite metodologije (EEG, praćenje očnih pokreta, srčani rad i psihogalvanski refleks) u izučavanju razvojnih razlika u čitanju. Osvrćući se na početak psihologije kao nauke, pre 140 godina, kada je Vilhelm Vunt osnovao prvu laboratoriju za eksperimentalnu psihologiju, možemo zaključiti da je psihologija napravila izuzetan pomak od bavljenja bihejvioralnim merenjima do otkrivanja načina na koji kognitvni sistem funkcioniše iznutra.

Ključne reči: primenjena psihologija, EEG/ERP, praćenje očnih pokreta, kognitivno modelovanje.

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USING EYE TRACKING TO STUDY INDIVIDUAL DIFFERENCES IN READING

Abstract

Eye tracking, the measurement of the eye gaze position and movement, has contributed immensely to reading research (Rayner, 1998, 2009). In this paper, three examples of how this approach can make contribution to our understanding of individual differences in reading proficiency are given. In the first study, Ashby et al. (2005) studied sentence reading in higher and lower skilled adults to examine differences in eye movement patterns while reading target words. In the second selected study (Krstić, Šoškić, Ković, & Holmqvist, 2018), the participants read texts several paragraphs long and answered questions about their contents, allowing examining more global characteristics of reading, such as problem solving strategy and allocation of attention to different parts of the text. The final example (Biscaldi, Gezeck, & Stuhr, 1998) focuses on eye movements of participants with dyslexia during a nonverbal visual task, demonstrating how experimental paradigms from other fields of eye tracking research can be used to study individual differences in reading. Taken together, these studies show how eye tracking studies can help us diagnose the sources of individual differences, identify subgroups of readers which experience different types of challenges, and develop appropriate methods of intervention depending on the subgroup a reader comes from.

Key words: eye tracking, reading, individual differences

Introduction

When we look at the eyes of a person reading a piece of text, we will see that their eyes do not move smoothly over its lines, but the eye jumps from one word to another, only to stop on it briefly before jumping again. These pauses on words are called *fixations*, and the jumps are called *saccades*. Saccades can be progressive, if one jumps from one word to the next, or regressive, if one returns

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to re-read an earlier part of the text or even the same word. Notably, the intake of new information only takes place during fixations, and it is supressed during saccades (Matin, 1974). Given that it is difficult to dissociate gaze from the focus of attention during complex visual tasks such as reading, it is believed that the gaze position is, for the most part, indicative of where a reader's attention is allocated at each moment in time (Rayner, 2009).

Consequently, the pattern of eye movements differs based on the content of the text (e.g., Rayner, Chace, Slattery, & Ashby, 2006) or the intentions of the reader (e.g., Strukelj & Niehorster, 2018), and it is also different from one reader to another (e.g., Chace, Rayner, & Well, 2005). In other words, if we could understand eye movements during reading, this could give us insight into the *process* of reading (Rayner et al., 2006), as opposed to only knowing the behavioural *outcome,* such as reading speed or comprehension score, and this information can be invaluable in understanding individual differences in reading.

How do we study eye movements? Eye tracking devices, which can be, for example, mounted on a computer monitor, or worn as eyeglasses, record moment-to-moment eye position during reading. This raw data is transformed into many different reading parameters, typically describing fixations and saccades related to an *area of interest (AOI)*, i.e., part of a page or a screen that is being analysed. AOIs in reading research are often target words, but they can also be, for example, paragraphs, figures, blank space on the margins of a page, or even the whole screen. Fixation parameter examples include duration of the first fixation on a word, total number of fixations on a word, and total duration all fixations on a word. Saccade measures may be, for example, number of progressive saccades, number of regressions within the same word or to a previous part of the text, or saccadic amplitude. Eye tracking measures can also focus on other properties of AOIs, such as the proportion of the total reading time spent examining a given AOI, or the order in which it drew the attention of the reader, compared to other AOIs.

When it comes to individual differences in reading, moment-to-moment cognitive processes that take place during reading can differ from one reader to another, resulting in a different "flow" of eye movements over the text. For example, readers can differ in how often they need to regress to an earlier part of the text, how much they struggle with (and consequently how long they fixate) low-frequency words, or their reading parameters can reveal phenomena such as mindless reading without paying attention to the content of the text. However, this is not the only option – readers can also employ different 'strategic approaches' to reading (i.e., *global text processing*, see Hyönä, Lorch, & Rinck, 2003): for instance, they can differ in what information they pay more attention to or how they go back and forth across different parts of the text to create a structure based on the information that is presented. In addition, the differences between readers may not be specific to reading at all, but connected to, for example, visuomotor coordination, which would also be reflected in their eye movements.

Eye tracking can help explore these questions through a variety of study designs. Typically, the issue of moment-to-moment processing is examined by studies focusing on average or median characteristics of fixations and saccades during reading assigned text, or measures of their variability (e.g., Ashby et al., 2005; Chace et al., 2005; Jared, Levy, & Rayner, 1999; Krieber et al., 2016). Studies examining global aspects of reading are less common - they typically focus on larger AOIs, such as sentences, paragraphs, figures and their key sections, as well as relationships between multiple AOIs (e.g., Hannus & Hyönä, 1999; Hyönä, Lorch, & Kaakinen, 2002; Krstić et al., 2018). Finally, in order to study individual differences not specific to reading, researchers need to borrow experimental designs from other fields of eye tracking research to study how participants with different levels of reading skill differ on tasks that are not reading-related (e.g. Biscaldi et al., 1998; Vinuela-Navarro, Erichsen, Williams, & Woodhouse, 2017).

In this paper, an example is given for each of these three types of studies. While a few selected cases cannot capture the full scope of the field of individual differences in eye movements during reading, they have been selected to highlight both the variability of both methods options and types of questions that can be asked when using eye tracking methodology to study this topic. In the first study, Ashby et al. (2005) studied sentence reading in higher and lower skilled adults to examine differences in eye movement patterns while reading target words. In the second selected study (Krstić et al., 2018), the participants read texts several paragraphs long and answered questions about their contents, allowing examining more global characteristics of reading, such as problem solving strategy and allocation of attention to different parts of the text. The final example (Biscaldi et al., 1998) focused on eye movements of neurotypical and dyslexic participants during a nonverbal visual task.

Example 1: *Eye Movements of Highly Skilled and Average Readers: Differential Effects of Frequency and Predictability* by Ashby et al. (2005)

In the first example, Ashby et al. (2005) were interested in how individual differences in reading affect eye movements. More specifically, they wanted to test the hypothesis that highly proficient readers do not rely as much on predicting the next word based on the context that precedes it, compared to an average reader (reading disabilities were not in the focus of this study).

For this purpose, they gathered a sample of 44 university students, native speakers of English language, and divided them into two groups of 22 highly proficient and 22 average readers, based on the results of a test of reading proficiency.

Both groups took part in two experiments, in which they read sentences with target words, while their eye movements were being recorded. In both experiments, the target words were either highly frequent or infrequent in the English language. In Experiment 1, the targets were preceded by a low-constraining context, i.e., a context which did not suggest whether the target word or some other word would be presented next (e.g., "They liked the new *plant*

better than the old one"). In Experiment 2, the context was constraining, and the words were presented either within a congruent context or a context in which the target word was very unexpected, even surprising ("Bugs Bunny eats lots of *carrots | potatoes* to stay healthy.").

For each target word, Ashby et al. took four measures of fixation duration and three measures of regression frequency and duration. *Fixation parameters* included (1) duration of the first fixation on a word, (2) fixation times for words which received only a single fixation, (3) gaze duration, i.e., sum of all consecutive fixations on a word, and (4) spillover time, i.e., duration of the first fixation after the gaze leaves the target word. *Regression parameters* included (1) the percentage of all trials in which a fixation on the target word was followed by a regression to an earlier part of the sentence, (2) the total duration of all fixations made while re-reading the words preceding the target word, if a regression to a previous part of the sentence was made, and (3) percentage of all trials in which a regression was made to the target word after the eyes had already moved on further to the right.

The results showed that, when the context was neutral (non-constraining), readers who were more skilled had fewer regressions, so they were more efficient in reading, and they had shorter fixations, which meant that they recognized and processed words faster. These differences between the two groups were more pronounced when the target words were less frequent.

An even more interesting finding was that the two groups of readers reacted differently to a high-constraining context. High skilled readers had comparable eye movements when reading low- and high-constraining text. On the other hand, when the context led average readers to expect a certain ending, they seemed to pay less attention to the target word. This is evidenced by shorter times spent fixating targets and attenuated word-frequency effect (when readers do pay attention, they fixate less frequent words longer), compared to the non-constraining condition. Moreover, when the target word was not congruent with the preceding context, average readers had longer spillover time and more regressions back to the target word once they had processed, indicating that they had looked away before lexical access had occurred, resulting in a need for returning to re-read the target word. In other words, less skilled readers were slower to recognize low-frequency unexpected words and they relied more on context to aid their word recognition, which was unhelpful when the text did not go as they had predicted.

Example 2: *All good readers are the same, but every low-skilled reader is different: an eye-tracking study using PISA data* by Krstić et al. (2018)

PISA (Program for International Student Assessment) is an international project of the Organisation for Economic Cooperation and Development (OECD), in which 15 year olds, who are at the point of leaving mandatory education in most countries, are tested to assess their reading, mathematics and science competencies. PISA reading literacy is defined as **"**understanding, using, reflecting on and engaging with written texts, in order to achieve one's goals, to develop one's knowledge and potential, and to participate in society" (OECD, 2016).

In the second selected study, Krstić et al. (2018) studied how eye movements of students who achieve different levels of PISA reading literacy differ when it comes both to how they read PISA texts and how they solve questions that follow them, in order to gain better insights into the challenges faced by students who fail to demonstrate even the lower levels of reading literacy.

To answer this question, Krstić et al. tested 20 participants, pupils of the 8th grade of elementary school, which is the grade in which children here are typically subjected to PISA assessments in Serbia, where the study was conducted. The students were pre-selected from an initial group of 92 students and split into two groups, based on combined results of a behavioural pre-test and the main eye-tracking reading test.

In the main test, Krstić et al. measured the participants' eye movements while they read PISA texts and solved tasks based on these tests. There were four texts, followed by a total of 6 questions of varying levels of difficulty (L1-L3 out of 6 difficulty levels available in PISA). Three of the texts were "linear", i.e., plain text which can be read in linear fashion, and one was a non-linear text which included graphs. In each case, the text was shown first, and questions appeared alongside each text after the participant was done with reading, which allowed separating parameters of reading and solving tasks, as well as preventing participants from guessing answers before they were finished with reading.

To analyse reading of linear text, Krstić et al. examined average fixation duration, median saccadic amplitude, percent of regressions, and reading speed (number of words per minute). When it comes to reading non-linear text and solving questions, the screen was divided into multiple AOIs (e.g., text, question, graph containing relevant information for a question). The following measures related to these AOIs were taken, in addition to the total reading time for a screen: time of entry into an AOI, dwell time, fixation time, fixation count, and average fixation duration within an AOI. Additionally, a post hoc qualitative analysis of heat maps was conducted to examine how participants solved each task.

The results have shown that the low-scoring students had shorter median saccadic amplitudes during reading linear text, indicating that their reading was less fluent. In addition, they had larger standard deviations on most of measures, during linear reading, non-linear reading, and question solving alike. This finding suggests that the low-scoring group was more diverse than the high-scoring group. However, the finding that was the reason for choosing this study as an example was that heat maps of low-scoring participants indicated more fixations on content irrelevant to solving the questions, indicating that this group likely struggled more to find relevant information, both in linear text and on graphs.

In short, the study demonstrated that there are differences between the two groups both at the "local" level of reading (difference in saccades) and at the "global" level (different patterns on the heat maps), as well as that there is more variability in the eye movement properties in the low-scoring group than in the high-scoring group, suggesting that it may not be a single, coherent cluster.

Example 3: *Poor saccadic control correlates with dyslexia* by Biscaldi et al. (1998)

The final example comes from Biscaldi et al. (1998), who were interested in whether dyslexia could be attributed to a broader problem with visual processing, more specifically visuomotor coordination, as opposed to causes specific to reading, a question that is still a subject of debate today (Bilbao & Piñero, 2020). To contribute to resolving it, Biscaldi and colleagues employed a non-verbal experimental paradigm designed to measure saccadic control and investigated performance of readers with and without dyslexia on this type of task.

Biscaldi and colleagues collected data on 185 teenage and young adult readers, old between 8–25 years. The participants were divided into three groups: 57 had dyslexia combined with a deficit in auditory short-term memory, 36 had isolated reading/writing difficulties, and 93 belonged to a control group of neurotypical patients.

In addition to a range of cognitive behavioural tests, the participants took part in two nonverbal eye-tracking experimental tasks which allowed measurement of saccadic control. The tasks consisted of a fixation point and targets that the participants should make saccades to after fixating the starting fixation point. In the first, single target, task, a fixation point was presented first, followed by a brief presentation of a target to the left or to the right of the fixation point at a random point in time. The participants had a task to fixate the target as soon as it appeared. In the second, sequential task, the fixation point was followed by four targets which appeared in sequence, each 1 s after the previous one, and the participants were asked to fixate each stimulus as it appeared.

A total of eight parameters of saccadic latency (e.g., mean, standard deviation, percent of saccades within a given latency range) and two measures of frequency of corrective saccades that take place when eyes do not land on the target correctly after the first saccade. Three variables were measured in the sequential task: mean number of saccades in the target direction, and mean number and amplitude of regression saccades.

The results showed that higher behavioural reading skill measure correlated with better performance on the oculomotor task. Participants with dyslexia showed similar performance on the oculomotor task, and both performed worse than the control group, suggesting that dyslexia may come from a more global visuo-spatial attention dysfunction, which is not specific to reading. Additionally, the study showed that there was improvement in saccadic control with age in all groups, even though it was slower in the group in which dyslexia was paired with an auditory short-term memory deficit, compared to the other two groups. This finding suggests that dyslexia may not be the result of a permanent impairment, but of delayed development which can be overcome in later years.

Conclusion

Taken together, these examples demonstrate three points about eye tracking studies of reading. First, tracking eye movements while reading informs us about the *process* of reading as opposed to behavioural measures that provide insight into *outcomes* of the reading process.

Second, eye tracking studies provide insights into various aspects of reading, from general properties of oculomotor functioning and visuo-spatial attention, to reading words, phrases, and sentences, to reading larger bodies of text which require additional cognitive processes to organise and evaluate information presented in the text. This is achieved through analysis of a multitude of different properties of fixations and saccades – their timing, duration, and position or distribution in space.

Finally, these insights have the potential to help us diagnose the sources of individual differences, identify subgroups of readers which experience different types of challenges, and develop appropriate methods of intervention depending on the subgroup a reader comes from.

As mentioned above, a few examples cannot capture the full variety of eye tracking research into individual differences in reading, and the kinds of questions that can be answered by using this method. This paper does not aim to provide an overview of the findings and knowledge accumulated through this line of research, either, as literature reviews on this topic have done (e.g., Bilbao & Piñero, 2020; Inhoff, Kim, & Radach, 2019; Radach & Kennedy, 2013; Rayner, 1998, 2009). However, it can hopefully offer a general insight into how eye tracking is and can be of use to reading researchers, as well as hint towards the incredible potentials of this method in the field of individual differences in reading.

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PRAĆENJE POKRETA OČIJU KAO METOD ISPITIVANJA INDIVIDUALNIH RAZLIKA U ČITANJU

Apstrakt

Praćenje očnih pokreta (eye tracking), metod koji omogućava merenje pravca pogleda i njegovog kretanja, doprinelo je mnogostruko naučnom istraživanju čitanja (Rayner, 1998, 2009). U ovom radu, data su tri primera kako ovaj metod može doprineti razumevanju individualnih razlika u čitalačkim kompetencijama. U prvom istraživanju, Ešbi i saradnici (Ashby et al., 2005) proučavali su kako odrasli viših i nižih čitalačkih kompetencija čitaju ključne reči u zadatim rečenicama, kako bi pronašli razlike u obrascima očnih pokreta tokom čitanja. U drugoj odabranoj studiji (Krstić et al., 2018), ispitanici su čitali tekstove duge po nekoliko odeljaka i odgovarali na pitanja u vezi sa njihovim sadržajem, što je omogućilo sagledavanje globalnijih aspekata čitanja, kao što su strategije rešavanja problema ili raspodela pažnje na različite delove teksta. Poslednji primer (Biscaldi et al., 1998) usmeren je na očne pokrete čitača sa disleksijom tokom izrade neverbalnog vizuelnog zadatka, i ilustruje kako eksperimentalne paradigme iz drugih oblasti istraživanja očnih pokreta mogu biti iskorišćene za proučavanje individualnih razlika u čitanju. Kada se sva tri primera uzmu u obzir, pokazuju nam da istraživanja očnih pokreta mogu pomoći u dijagnostikovanju izvora individualnih razlika, izdvajanju podgrupa čitača koji imaju različite izazove pri čitanju, i u razvoju odgovarajućih postupaka intervencije za svaku podgrupu.

Ključne reči: praćenje pokreta očiju, čitanje, individualne razlike

SCHEMA THERAPY – ITS ROLE
AND APPLICATION IN THE WORLD TODAY

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USING SCHEMA THERAPY TO UNDERSTAND COVID-19 RISK OF BURNOUT IN MENTAL HEALTH PROFESSIONALS

Abstract

Studies show that mental health professionals' burnout has different contributors such as shared trauma, work overload, lack of control, insufficient reward, and problems in the organizational environment. All these factors tend to be very high in the current COVID-19 pandemic. Fewer studies have explored the role of personal factors in levels of stress and burnout, although we see that not caring adequately for ourselves, our unmet needs, our Early Maladaptive Schemas, or past traumas could add to our levels of emotional exhaustion and possibly trigger unhelpful coping mechanisms. Studies confirm that the lack of self-care combined with unhelpful coping patterns intensifies the possibility that mental health professionals might experience burnout, compassion fatigue, or vicarious trauma. Drawing on Schema therapy concepts and our experiences as trainers and supervisors of mental health professionals working with stress and trauma, this paper explores the role their Early Maladaptive Schemas and Schema Modes play in working with COVID-19 related issues and self-care. Additionally, we offer specific recommendations that promote creative, compassionate self-care.

Key words: Schema therapy, Mental health professionals, Burnout, COVID-19, Self-care

Introduction

COVID-19 pandemic as the "work setting" for mental health professionals

The COVID-19 pandemic has added to the already existing problems and mental health challenges putting mental health professionals (MHP) in a position to offer counseling and psychological first aid in various context and circumstances. As Dastagir (2021) put it: "When a world in pandemic shut down, the mental health professionals did not. They kept working, many more than ever, counseling patients on how to survive something they'd never seen before, something they feared themselves". They counseled while managing their own

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virus-related stressors and sometimes their own losses, while homeschooling their children, with other stressors such as political turmoil (elections, protests), with new technologies they had to master and with very limited information about the virus itself. Many had not experienced working with collective traumas, and many had "too much" experience of this kind, since they accumulated years of shared trauma they had to work through and process (like in Former Yugoslavia).

Studies (see Freedman & Mashiach, 2018; Skovholt & Trotter-Mathison, 2016) show that mental health professionals' burnout has different contributors such as shared trauma, work overload, lack of control, insufficient reward, and problems in the organizational environment. As all these factors tend to be very high in the current COVID-19 crisis, it is expected (and confirmed by some as Dastagir, 2019) that the pandemic has put mental health workers at an even greater risk of burnout. All of this gets even more worrying if there is a history of personal trauma or personal factors that add to the list of stressors. This is not rare, as a significant proportion of mental health professionals report adverse childhood circumstances (e.g., Simpson, Simionato, Smout, van Vreeswijk, Hayes, Sougleris, Reid, 2019). Professionals who have experienced trauma or neglect while growing up may have increased capacity for empathy but may also be more at risk of developing maladaptive beliefs, coping mechanisms, and associated psychological distress (Simpson et al., 2019).

However, the role of personal factors in levels of stress and burnout in mental health professionals has seldom been explored. Having had the opportunity to supervise many (N=100+) psychologist and psychotherapists who worked with shared trauma (including COVID-19 crises), we wanted to share the experiences we had gathered, hoping that this could help in "weathering this and other storms" that await us. With this paper, we hope to shed some light on the experienced stressors, personal factors that contribute to burnout and compassion fatigue of mental health professionals. Additionally, we wish to offer specific recommendations that promote creative, compassionate self-care. In doing so, we will use concepts from Jeffrey Young's Schema therapy (1990) and experiences gathered from supervising volunteers providing COVID-19 related psychological support for *Serbian Union of Associations for Psychotherapy* and *Association of Psychologists of Republic of Srpska*, as well as supervisions for Schema therapy trainees and volunteers working with homeless people and refugees.

Mental health professionals' childhood experiences - Schema therapy view

Schema therapy (ST) is an integrative approach, bringing together elements from Cognitive-behavioral therapy, Attachment and object relations theories, Gestalt, and experiential techniques (Young, Klosko & Weishaar, 2003). Schema therapy aims to help patients understand their core emotional needs and learn ways of getting those needs met in an adaptive manner. This requires altering

long-standing cognitive, emotional, relational, and behavioral patterns (Rafaeli, Bernstein & Young, 2011).

Schema therapy integrates theory, diagnostics, treatment, prevention, and research. Development in its application and treatment, went alongside vast research resulting in numerous validation studies that proved Schema therapy to be highly effective in both reduction of various symptoms and improvement of quality of life (see Mirović, 2018).

Schema therapy model asserts that the etiology of difficulties in adult life lies in the extent to which the core developmental needs of childhood go unmet (Farrell & Shaw, 2018). These basic needs are for: 1. Secure attachments to others (includes safety, stability, nurturance, and acceptance) 2. Autonomy, competence, and sense of identity 3. Freedom to express valid needs and emotions 4. Spontaneity and play 5. Realistic limits and self-control (Young et al., 2003). If these needs are not met, it leads to the formation of: *Early Maladaptive Schemas* - EMS (there is 18 of them), *Schema Modes* (10 of them) and three *Maladaptive Coping Styles*. These further lead to different symptoms and problems (Mirović, 2018).

Young (2003) defines EMS as a broad pervasive theme or pattern regarding oneself and one's relationship with others, developed during childhood and elaborated throughout one's lifetime, and dysfunctional to a significant degree. Existing studies (see Vallianatou & Mirović, 2020) indicate that three of the most common EMS amongst mental health professionals are *Self-Sacrifice* (SS), *Emotional Deprivation* (ED) and *Unrelenting standards* (US).

People with the *Self-Sacrifice* schema voluntarily meet the needs of others at the expense of their own gratification (Young et al., 2003). They do this to spare others pain, avoid guilt, gain self-esteem, or maintain an emotional connection with someone they see as needy (Young et al., 2003). *Self-Sacrifice* schema is one of the most common schemas in psychotherapists (Haarhoff, 2006; Saddichha, Kumar & Pradhan, 2012). Therapists with this schema are acutely sensitive to their patients' reactions to them and may fear abandonment or feel guilty that they are better off than the patient. If a therapist surrenders to SS schema, she/he can engage in a number of self-defeating behaviors, going "overboard" to meet the patients' needs while ignoring the signs of fatigue and exhaustion (Vallianatou & Mirović, 2020). At the same time, a therapist with a SS schema might have difficulties to act assertively and set appropriate boundaries (Haarhoff, 2006).

Self-sacrifice schema is often linked with *Emotional Deprivation*, as the therapist may have learnt to meet others' needs in order to maintain an emotional connection (Vallianatou & Mirović, 2020). The *Emotional Deprivation* schema is the expectation that one's desire for emotional connection will not be adequately fulfilled. It involves deprivation of nurturance; deprivation of empathy and deprivation of protection (Young et al., 2003). If combined, SS and ED schemas push therapists to give too much, while neglecting their own needs. This might go as far as forgetting or not having time to properly eat and sleep or overworking with no time for socializing or fun (Vallianatou & Mirović, 2020).

Unrelenting Standards is another very common schema in therapists and has also been linked to burnout (Simpson et.al., 2019). The US schema is the sense that one must strive to meet very high internalized standards, usually to avoid disapproval, failure, or shame. This manifests itself as a perfectionism and a belief that it is never good enough, feelings of constant pressure, rigid rules, preoccupation with time and efficiency - all these leading to significant impairment in the one's health, self-esteem, relationships, or experience of pleasure (Young et al., 2003). When they surrender to US schema mental health professionals seek perfection and push themselves too hard, seriously neglecting their needs for rest, spontaneity, and play. They might work long hours, see too many clients, or fail to take breaks (Vallianatou & Mirović, 2020).

When schemas get triggered, we flip into a *Schema Mode* (Farrell & Shaw, 2018). Schema modes are defined as the emotional, cognitive, behavioral, and neurobiological states that are currently activated (Young et al., 2003). They are the predominant state that person experiences at any given point in time. They reflect aspects of self that are not entirely integrated, and a person flips from mode to mode in response to external and internal stimuli (Farrell & Shaw, 2018). There are four groups of Schema modes (for detailed explanation see Farrell & Shaw, 2018 or Young, 2003): Innate Child modes (*Vulnerable Child*, *Angry Child*, *Undisciplined Child,* and *Happy Child Mode*), Parental modes (*Demanding Parent Mode*, *Punitive/Guilt inducing Parent Mode*), *Healthy Adult Mode* and *Maladaptive Coping Modes*. Maladaptive Coping modes primarily consist of actions or behaviors and are defined as an overuse of survival-based coping styles: fight (Overcompensation), flight (Detachment and Avoidance), and freeze (Surrender). All three coping styles have the goal of protecting the person from experiencing distress (e.g., sadness, anxiety, anger, fear).

What do these modes look like in mental-health professionals? One of the modes that is most easily observed is the *Compliant Surender mode* – state in which one surrenders to the schema (e.g. if schema is SS/ED, gives up own needs for others, or in case of US spends inordinate amounts of time trying to be perfect (Young et al., 2003). When in this mode, the one acts on everything that *Self-Sacrifice* and *Unrelenting Standards* schemas or a *Demanding Parent / Guilt Inducing Parent* messages tell it to do. Instead of looking after their own needs first, instead of taking time to rest, socialize and play, many MHP avoid guilt and feeling of not being good enough by surrendering to taking care of others, learning/studying/working more. They protect themselves from "being bad, selfish or not good enough" (Parental mode messages) by *Overcompensating* (engaging in excessive work, excessive responsibility and control, "having to do it all ourselves" mode...) or going into *Compliant Surrender Mode*. Their inner *Vulnerable child* (we can call it "Little therapist") feels overburden, frustrated, tired and deprived. Their *Angry Child* and *Happy Child Mode* protest. Their *Healthy Adult* tries to make a change, but the abovementioned schemas, parental and coping modes get the last say. They continue doing what they normally do (overcompensate and surrender), employing the *Detached protector* to cut off their own feelings and needs and/or *Detached Self-Soother* to distract or sooth by filling the emptiness that the deprivation leaves.

Many mental health professionals that we had supervised recognize the abovementioned patterns and know what they need to do in order to change them, but still fail to do so. It is as if they have no control over these behaviors. They see themselves "rushing into" burnout but cannot seem to stop. The guilt, unrelenting standards and responsibilities for others often gets the best of them. They cannot stop what they do, which is actually, what they were thought to do as children. It is our experience that many MHP fail into the category of "parentified children". Parentification in the family system is defined as a functional and/or emotional role reversal wherein the child sacrifices his or her own needs in order to accommodate and care for emotional or logistical needs of a parent (Chase, 1999). By doing this, the parentified child learns that his or her needs are less important than others' and that the way to connect and get family's and cultural validation (and self-worth) is by serving and achieving. It also learns that "the faith of others/family" depends on its actions, which makes it almost impossible to step down and say no without feeling scared, guilty and selfish. Assuming adult (age inappropriate) tasks generates a lot of anxiety and the only way to cope with this sense of being inadequate and ill-prepared is to overcompensate with unrelenting standards, excessive preparation, and over-control.

In the following part of the chapter, we will discuss how the afore-described childhood experiences, Schemas and Modes tend to make MHP's work during the pandemic even more challenging.

Application of Schema Theory in working with mental health professionals during Coronavirus pandemic

The abovementioned childhood experiences generate schemas and modes that can seriously impede balancing other-care and self-care, which has proven essential for preventing burnout. Finding this balance tends to be even more difficult in Corona times. Mental health professionals that we had supervised, reported feeling even more responsible / guilty (*Self-sacrificing*) than usual. There was a sense that they have to help others because others "had it worse"- they "didn't have coping skills as we do", "they weren't able to keep their jobs/work online as we did" and so on. Many had (*Demanding/Guilt inducing*) beliefs telling them that it is not ok to stop or slow down, no matter how exhausted they felt. The reason behind this view was simple enough - "it is the pandemic". Others felt that they need to step in to make up for other systems that failed. Most continued working full day shifts with clients while initiating additional volunteer tasks (joined COVID-19 help lines, organized online workshops for free, wrote additional psychoeducational materials etc.).

The time and intake pressure became huge, the sense of *deprivation*, exhaustion and being overwhelmed increased, but they could not stop. Furthermore, many were juggling all of this while, simultaneously, taking care of

children, working online (or by phone) from shared spaces at home or working live in COVID-19 hospitals while wearing masks and other medical equipment. A significant number of them did all this while dealing with illness and losses of loved ones. Many of our supervisees reported feeling numb (*Detached*) or overwhelmed with the increased tendency to self-sooth (*Detached Self-Soother*) through binge eating, drinking alcohol or smoking cigarettes. Faced with their own vulnerability (their own *Vulnerable child*) many felt guilty and "weak" (*Punitive/Guilt inducing messages)*. This was not surprising, as mental health workers have a propensity to minimize their own vulnerability whilst continuing to expose themselves to excessive work pressures (Simpson et al., 2019). This vulnerability is among other things characterized by self-blame for showing signs of stress or vulnerability; striving to reach higher (*unrelenting*) standards whilst denying (*depriving or detaching*) personal needs and emotions; and a reluctance to set boundaries and ask for support due to *self-sacrifice* and fears of letting others down (ibid).

Having all of this in mind, we believe that the pandemic presents a great threat to mental health professional's mental health. The fact that it is shared trauma (characterized by an ongoing treat, immobilization, isolation, lack of resources, losses, financial and other uncertainties etc.), that has been going on for long, and is unclear when it will end presents additional mental health challenge. Furthermore, there is a high risk for vicarious traumatization among those who utilize high empathy and personal histories of trauma (Perris, Fretwell& Shaw, 2012), which is many of MHP.

The risk for burnout and compassion fatigue is great and the situation that is causing it can hardly be changed. What can change is the way we, as mental health professionals treat ourselves. The path to prevention is creative and compassionate self-care. In the part that follows, we will give specific recommendations how to do so. Recommendations too, came from Schema therapy literature and our own experiences as mental health professionals, COVID-19 volunteers, trainers, and supervisors.

Several studies indicate that not taking adequate care of ourselves combined with our unhelpful coping patterns intensifies the possibility that we experience burnout, compassion fatigue or vicarious trauma (e.g., Thomas & Morris, 2017; Simpson et.al., 2019). This is a reason why we ought to be aware of unhealthy coping patterns, schemas and modes. Awareness is therefore, the first step. Once that is done, we can move forward to dealing with our schemas and modes. The antidote for our *Unrelenting standards* and *Parent Modes* is to practice self-compassion and being in a *Happy Child Mode*. It is essential to remind ourselves that nothing is "a must" and that there is a cost to our *overcompensating* behavior. We pay a great price – we pay with significant impairment in pleasure, relaxation, health, self-esteem, sense of accomplishment, or satisfying relationships (Young et al, 2003). Therefore, we need to practice slowing down, accepting mistakes and setbacks, and incorporating more fun activities in our lives. We need to concentrate on our unmet needs and to keep on track with our self-care plan (Vallianatou & Mirović, 2020). Our *Healthy Adult Mode* needs to keep in mind our tendency to *self-sacrifice*

or *emotionally deprive* ourselves and gradually learns to prioritize our wishes and unmet needs. It also is very important that we actively change our personal life so that meaningful relationships and personal experiences enhance positive feelings and provide relief and self-care plan (Vallianatou & Mirović, 2020).

When shared trauma occurs self-care can be challenging. Supervision and peer supervision groups seem to be an excellent approach to dealing with shared trauma (Tosone et. al., 2012). In these groups we can investigate ways to manage personal stress, our emotional reactions during crises, grey areas of professional / volunteer practice and problem solve. Our supervisees reported that these kinds of encounters made them feel safer and less lonely. The group can also organize soothing activities that promote wellness such as mindfulness practice (Vallianatou & Mirović, 2020). This is especially important now when the pandemic makes usual self-care recommendations such as exercise, hobbies, travelling, going out etc. unsafe or impossible. As an alternative to these and instead of conclusions, we offer the following tips:

1. Remind yourselves that your needs and your life matter too – we are helpers, but we are people too; people with needs and problems same as anyone else's. Employ your *Compassionate Healthy Adult* to create a balance between personal and professional life – between your needs and needs of others.
2. Be mindful of your schemas and modes. Work on replacing self-sacrifice, guilt-inducing, unreasonable standards and demands with self-care, self-kindness, and realistic limits.
3. Be mindful of the problems and situations that trigger you and think of healthy ways to self-sooth. Try not to detach and overcompensate. Formulate a self-care plan that fits with your needs and life circumstances.
4. Remember that it is a difficult time for everyone – including you. Acknowledge that you may experience feelings that may not go away. Show yourself the same compassion and care you give to others.
5. Prepare for the long run – this crisis will last, and the aftermaths will ask for continuous support. You will need to support yourself continuously as well. Self-care plan should be a lifelong plan, nor just an emergency aid.
6. Look after your little self! Remember to engage in *Happy child Mode* activities that help you connect, relax, laugh, play, and have fun!
7. Take care of your own health - stay healthy and stay safe!

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INTERCULTURAL SENSITIVITY AND EDUCATION

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INTERCULTURAL COMPETENCIES OF PARENTS OF CHILDREN WITH DEVELOPMENTAL DISORDERS

Abstract

This study was aimed to examine the intercultural competencies of parents of children with developmental disorders (DDP). The study involved 203 parents (89% female), divided into two groups. The first group included DDP (N=65), while the second group was consisted of parents of children with typical development (TDP) (N=138). Questionnaire used in this study included Modified Serbian Version of Intercultural Sensitivity Scale (ISS), the Scale of Ethnocultural Empathy (EE), and a variety of questions related to sociodemographic data and intercultural experience. As the ISS did not reach significant levels of reliability, we used only the Interaction Confidence (IC) subscale in further analysis. Statistically significant differences between DDP and TDP in terms of IC and EE are not noted. IC increases with more experience in interacting with people from different cultures. TDP who are younger and who have more children report higher IC. EE increases with higher education, greater experience in interacting with people from different cultures and having more friends of different ethnic/religious affiliations, and decreases with more frequent experiences of discrimination based on ethnicity or religion. Statistically significant differences in IC and EE between individuals who have grown or currently living in predominantly monoethnic or polyethnic environments do not occur.

Key words: intercultural competencies, intercultural sensitivity, ethnocultural empathy, parents of children with developmental disorders

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Introduction

Present era of globalization, interdependence and multicultural societies requires from an individual to adapt to the unknown, to live and work in an environment that is full of diversity, and free of hostility to differences (Chen & Starosta, 1997). The international community promotes values which are based on the assumption that a policy of recognizing and encouraging ethnocultural diversity can expand human freedoms and strengthen human rights (Stanković-Pejnović, 2010). However, in order to live in harmony and to understand and respect each other, members of different cultures need to interact, ie. to possess a set of abilities called intercultural competencies (Chen & Starosta, 1997).

According to Chen and Starosta, intercultural competencies represent a set of cognitive, affective and behavioral skills and characteristics that support effective and appropriate interaction in different cultural contexts (Chen & Starosta, 1996, 1998). Intercultural sensitivity enables greater potential for the manifestation of intercultural competencies (Hammer, Bennett, & Wisemanc, 2003). In this paper, the focus will be placed especially on the intercultural competencies' affective component, with special reference to empathy, which is recognized as its central element (Chen & Starosta, 1996, 1997). Ethnocultural empathy represents the perception of another ethnocultural group's member's feelings, in a way that allows an individual to feel the emotional state of another from the point of view of the another one's culture, as well as the emotional response to those feelings. Ethnocultural empathy is a key skill for better managing cultural differences (Wang, et al., 2003), as it can reduce prejudice, intolerance, conflict and discrimination, while increasing understanding, respect and tolerance between people of similar or different cultural or ethnic backgrounds (Albiero & Matricardi, 2013; Levin, et al., 2016; Pettigrew & Tropp, 2008; Wang et al., 2003).

Although the Balkans represent a multicultural environment, in terms of ethnicity, language and religion (CESID, 2016), literature data speak in favor of high prejudices against ethnic minorities as in our country (Bajović, 2013; Ivanov, 2008; Kalaba, 2013; Mihić & Mihić-Lisul, 2003), as well as in the region (CEDEM, 2013; Puhalo, 2003; Turjačanin, 2011). The presence of low trust and high ethnic distances and prejudices towards other ethnic groups, even among the younger generations, was also recorded (CESID, 2016; Kandido-Jakšić, 2008; Milošević Đorđević, 2015; Pavasović-Trošt, 2013; Tomanović & Stanojević, 2015; Žeželj, et al., 2019).

Although it is considered that the intercultural competencies of young people represent the result of a successfully implemented educational process (Catalano, Beglund, Ryan, Lonczak, & Hawkins, 2004; Council of Europe, 2016), it cannot be said that Serbia's educational system promotes interculturality (Petrović & Jokić, 2016). The fact that ethnic distances among young people strengthen due to strong family pressures (Žeželj, et al., 2019), speaks in favor of the importance of parental role in developing intercultural competencies. Such data are particularly concerning in the context of strong intergenerational and family ties which are

common in Serbia (Nauck, 2001; Tomanović & Stanojević, 2015). The foundations of interculturality are being set from the earliest age, and the first teachers of interculturalism are the child's parents (Ljubetić, Bedrica, & Slavinjak, 2018). Even though family upbringing exceeds the goals of institutional education, very little is known about parental intercultural competencies.

The educational process in Serbia is based on fairness and accessibility of education for all (Law on the Education System Foundations, according to Petrović & Jokić, 2016). The goal is to eliminate social exclusion that is a consequence of attitudes towards diversity, on any grounds — not only on the basis of race, ethnicity, and religion, but also the children's abilities (Ainscow, 2005). As the incidence of developmental disorders increases (Boyle, et al., 2011), and insistence on inclusive education is more frequent, we can assume that school system will have more and more children with disabilities in the years to follow.

As parents who have children with developmental disorders often struggle with stigma and discrimination, and their children require additional support during educational process, we thought that it would be especially interesting to examine their intercultural competencies. Therefore, this research was aimed to explore differences between parents of children with developmental disorders and parents of typically developing children in terms of intercultural sensitivity and ethnocultural empathy. Also, we wanted to examine the role of sociodemographic factors and previous intercultural experience in predicting the intensity of parental intercultural sensitivity and ethnocultural empathy.

Method

Sample

The study involved 203 parents of both sexes (89% female), divided into two groups. The first group consisted of parents of children with various developmental disorders (N=65) (DDP), while the second, control group consisted of parents of children with typical development (N=138) (TDP).

DDPs' age ranged from 24 to 53 years (M=37.66, SD=6.52). More than half of these parents have faculty or postgraduate education (58%) and the majority are married or cohabiting (94%). About half of the parents live in Serbia (52%) and have two children (46%). Their children with developmental disorders aged from 1 to 29 years (M=7.55, SD=5.63).

Two parental groups were matched in terms of age (t=1.78, p=.077), level of education (χ^2=3.33, p=.505) and the number of children (χ^2=2.75, p=.601).

Instruments

The research battery was consisted of several sections. In the first section, respondents answered various questions about sociodemographic data and their previous intercultural experience.

In the second section, intercultural sensitivity was measured by modified Serbian version of *Intercultural Sensitivity Scale-ISS* (Petrović, Starčević, Chen, & Komnenić, 2015). The scale is designed to measure the individuals' ability to develop positive feelings about cultural differences and their desire to achieve positive outcomes in intercultural communication. It is consisted of 15 items, grouped into four subscales: Interaction Enjoyment, Interaction Engagement, Respect for Cultural Differences and Interaction Confidence. Parents were asked to choose a number from 1-5, where 1 means "strongly disagree" and 5 "completely agree". The reliability was satisfactory (Global score: α=.78; Interaction enjoyment: α=.73, Interaction engagement: α=.65, Respect for cultural differences: α=.59 i Interaction confidence: α=.75).

In the third section, Ethnocultural empathy was assessed by the Empathic Feeling and Expression subscale (Wang, et al., 2003). The questions refer to the way individuals understand the views and emotions of other cultural groups' members. The scale is consisted of 15 items. Parents express their degree of agreement on a five-point Likert-type scale, by choosing a number from 1-5, where 1 means "strongly disagree" and 5 "completely agree".

Procedure

Data was collected through an online survey. Respondents were guaranteed anonymity. Obtained data was treated in accordance with the code of ethics. In order to recruit DDPs, the questionnaire's link was sent to parents from Serbia, Montengero, Bosnia and Hercegovina, whose children obtained speech and language therapy within the Institute for Experimental Phonetics and Speech Pathology "Đorđe Kostić", in Belgrade, Serbia. The link was also placed within Facebook groups whose names contained keywords that referred to various developmental disorders. Some members from mentioned Facebook groups who have children with typical development showed interest to participate in our research, so we used their answers to form a control group. Other TDPs were recruited through The National Association of Parents and Teachers of the Republic of Serbia (NARNS).

Data analysis

As the ISS did not reach significant levels of reliability, we used only the Interaction Confidence (IC) subscale in further analysis. We used descriptive statistical measures to analyze and describe the sample, to present data concerning parental intercultural experiences, and to show the levels of Interaction Confidence and Ethnocultural Empathy. The t-test for independent samples was used to examine age differences, Interaction Confidence and Ethnocultural empathy between two parental groups, as well as to examine Interaction Confidence and Ethnocultural empathy in relation to the environment in which parents grew up in and in which are currently living in. The chi-square test was used to examine differences in the level of education and the number of children between two parental groups. Multiple linear regression was applied to predict the intensity of Interaction

Confidence and Ethnocultural Empathy based on sociodemographic factors and intercultural experiences. To examine the relationship between the Ethnocultural Empathy Assessment Scale and the Intercultural Sensitivity Scale, we used Pearson correlation coefficient. Data were processed using the SPSS package, v.20.

Results

First, we will present the descriptive measures concerning parental previous intercultural experiences, as well as those related to the applied instruments. Afterwards, we will present the research results on parental Interaction Confidence and Ethnocultural Empathy.

Descriptive statistics: Parental intercultural experience

The majority of respondents from our sample declare themselves as nationaly (86%) and religiously determined (93%). About two thirds of parents (70%) are orthodox Serbs. Slightly less than half of the respondents grew up (46%) and are currently living (44%) in a multinational environment. Almost two thirds of respondents (59%) have never experienced hostile behavior based on their ethnic or cultural affiliation (59%), while 1% of parents believe they were exposed to hostile behavior on a daily basis. Even 39% of respondents believe they have a lot of experience in interaction with people from other cultures. Most of the parents communicate moderatly in a foreign language: 9% on a daily basis, while 14% of parents communicate only in their mother tongue. Nearly two-thirds (60%) of parents have more than five close friends of other ethnic or religious backgrounds than their own, while 6% have none.

Descriptive statistics: Instruments

Only the Interaction Confidence subscale, from the Intercultural Sensitivity Scale (ISS) reached the recommended .70 level of reliability. As the Kolmogorov-Smirnov tests show statistics that are significant, we conclude that the distribution of scores on all scales and subscales deviates from normal (Table 1).

Table 1
Descriptive statistical measures in relation to the applied instruments

		M	SD	Min	Max	α*	KS (p)*
ISS Global score	TDP	4.48	.41	3.47	5.00	.45	.125 (.000)
	DDP	4.52	.39	3.47	5.00		
	Whole sample	4.49	.40	3.47	5.00		
ISS Interaction enjoyment	TDP	4.73	.45	2.75	5.00	.55	.369 (.000)
	DDP	4.82	.30	4.00	5.00		
	Whole sample	4.76	.41	2.75	5.00		

							α	KS(p)
ISS Interaction engagement	TDP	4.20	.71	2.25	5.00		.58	.133 (.000)
	DDP	4.25	.66	2.50	5.00			
	Whole sample	4.22	.69	2.25	5.00			
ISS Respect for cultural differences	TDP	4.58	.52	3.00	5.00		.12	.264 (.000)
	DDP	4.62	.55	3.25	5.00			
	Whole sample	4.59	.53	3.00	5.00			
ISS Interaction confidence	TDP	4.36	.74	1.00	5.00		.72	.206 (.000)
	DDP	4.33	.72	2.00	5.00			
	Whole sample	4.35	.73	1.00	5.00			
Ethnocultural empathy	TD	4.23	.67	2.07	5.00		.65	.135 (.000)
	DD	4.20	.54	2.73	5.00			
	Whole sample	4.22	.63	2.07	5.00			

* On the whole sample level
α–Cronbach's α
KS(p) -Kolmogorov-Smirnov statistic and its significance

The correlations between the Intercultural Sensitivity Scale's subscales and Ethnocultural Empathy scale are shown in Table 2.

Table 2
Relationship between Intercultural sensitivity scale and Ethnocultural empathy scale

		ISS Global score	ISS Interaction Enjoyment	ISS Interaction Engagement	ISS Respect for Cultural Differences	ISS Interaction confidence
Ethnocultural empathy	r	.517	.317	.505	.398	.167
	p	.000	.000	.000	.000	.017

r –Pirson's correlation coefficient
p –correlation's significance

Since only the Interaction confidence subscale reached a satisfactory level of reliability, and its correlation with Ethnocultural empathy scale was the lowest, so the overlap of measured constructs is probably small, we decided to use only this subscale in further analysis.

Parental interaction confidence

The majority of respondents reported high or very high Interaction Confidence (96%). Statistically significant differences between DDP and TDP are not recorded (t=.285, p=.776). The average scores regarding Interaction confidence are shown in Table 1.

When it comes to predicting the intensity of Interaction confidence, the logistic regression model showed to be statistically significant at the whole sample level (R^2=.087, F(7,195)=2.65, p=.012). *Experiences in interaction with people from different cultures* emerged as a good predictor (B=.100, SE=.050, β=.163, t=2.024, p=.044), which indicates that parents who had more experience in interacting with people from different cultures have greater interaction confidence.

The regression model was significant within the TDP group (R^2=.141, F(7,130)=3,038, p=.005). *Parental age* (B=-.020, SE=.010, β=-.173, t=-1.983, p=.049) and *Number of children* (B=.190, SE=.078, β=.214, t=2.423, p=.017) emerged as good predictors. The obtained results indicate that the Interaction confidence is higher in younger parents and those who have more children. The regression model was not significant within the DDP group (R^2=.111, F(7.57)=1.014, p=.432).

Factors such as parental gender, marital status, country of residence, nationality and religion were not included in the regression models, given that the majority of respondents were female, married or cohabiting, living in Serbia, and being orthodox Serbs.

The environment in which parents grew up in (t=-1.618, p=.107) or are currently living in (t=-1,576, p=.117) does not have a significant effect on their Interaction confidence.

Parental ethnocultural empathy

The majority of respondents reported high or very high Ethnocultural empathy (96%). Statistically significant differences between DDP and TDP are not recorded (t=.310, p=.757). The average scores regarding Ethnocultural empathy are shown in Table 1.

When it comes to predicting the intensity of Ethnocultural empathy, the logistic regression model showed to be statistically significant at the whole sample level (R^2=.115, F(7,195)=3.60, p=.001). *Parental level of education* (B=.099, SE=.042, β=.171, t=2.375, p=.018), *experiences in hostile behavior* (B=-.098, SE=.044, β=-.153, t=-2.227, p=.027), *experiences in interacting with people from different cultures* (B=.092, SE=.042, β=.172, t=2.165, p=.032) and *friends of other ethnic/religious affiliations* (B=.047, SE=.023, β=.155, t=2.046, p=.042) emerged as good predictors. Such results indicate that Ethnocultural empathy increases with higher education, greater experience in interacting with people from different cultures and having more friends of other ethnicities and religions, but decreases with more frequent experiences of hostile behavior based on ethnicity or religion.

The regression model was significant within both groups of parents - TDP group (R^2=.145, F(7,130)=3.15, p=.004) and DDP group (R^2=.211, F(7, 57)=2.17, p=.050). When it comes to the TDP group, *level of education* (B=.127, SE=.056, β=.203, t=2.272, p=.025) and *friends of other ethnic/religious affiliations* stand out as good predictors (B=.067, SE=.029, β=.213, t=2.311, p=.022). The obtained results indicate that Ethnocultural empathy is higher among TDPs who have higher education and more friends of other ethnic/religious affiliations. Experiences in

hostile behavior emerge as a significant predictor (B=-.182, SE=.059, β=-.378, t=-3.087, p=.003) within DDP group. Such results indicate that Ethnocultural empathy decreases with more frequent experiences of hostile behavior.

Factors such as parental gender, marital status, country of residence, nationality and religion were not included in the regression models, given that the majority of respondents were female, married or cohabiting, living in Serbia, and being orthodox Serbs.

The environment in which parents grew up in (t=-.461, p=.645) or are currently living in (t=-1.290, p=.198) does not have a significant effect on their Ethnocultural empathy.

Discussion

Although the foundations of interculturality are being set from the child's earliest age, and the first teachers of culture are child's parents, very little is known about their intercultural competencies. As the incidence of developmental disorders is increasing, and insistence on inclusive education is becoming more frequent, we can assume that an increasing number of children with developmental disabilities will be present in the school system in the years to follow. Studies on parental intercultural competencies, especially those concerning vulnerabile families do not exist in the literature. So, we believe that the findings of this paper significantly contribute to a better understanding of intercultural competencies of this specific population. The results will be explained and interpreted based on the available literature.

We begin the discussion with the findings concerning the applied instruments's metric characteristics, as they slightly changed the further analysis' course. Namely, as it turned out that only the subscale Interaction Confidence (IC) reaches satisfactory levels of reliability and that it has the lowest correlation with the Ethnocultural empathy scale (EE), we decided to use only this subscale in the further analysis. The fact that the modified Intercultural Sensitivity Scale (ISS) wasn't reliable in the parental sample can be explained by the fact that an extremely high percentage of parents (96%) reported high or very high IC, as well as high or very high EE. Therefore, we can assume that parents were probably giving socially desirable answers. Some authors explain this tendency by respondents'concerns that their responses may be interpreted in terms of racism and discrimination (Rasoal, Jungert, Hau & Andersson, 2011). Therefore, we believe that future researchers should measure detected behavioral indicators or use more indirect and implicit measures to assess intercultural sensitivity (IS) and EE. Furthermore, one may get the impression that our respondents overestimate their abilities. Such behavior may origin from the belief that intercultural competencies do not require the possession of specific skills and abilities. Namely, one can get the impression that a certain number of respondents from our sample could be located

in the phases of Denial (denying cultural differences), Defense (doing everything to avoid the existence of cultural differences) or Minimization (emphasizing similarities between individuals from other cultures at the expense of differences). Therefore, future studies could include the Bennett's Developmental Model of Intercultural Sensitivity (DMIS) (Bennett, 1993), which would provide a deeper insight into the stages of IS development and potentially enable clarification of the obtained findings. Finally, it should be said that the potential explanation of the obtained results partly lies in the sample's structure. That is, as it has been shown that the effect of education on EE is significant, as well as that women show higher cultural sensitivity and ethnocultural empathy (Cundiff & Komarraju, 2008; Hansen, 2010; Rasoal, et al., 2011; Sprague-Zones, 1995), our findings are not surprising, as our sample was mostly consisted of highly educated females. However, gender differences could not be examined as only a small number of fathers participated in the study. The recommendation for further research would be to include a relatively equal number of men and women.

The most obvious explanation for the absence of differences between the two parental groups in terms of IC and EE would be that the child's diagnosis does not have a significant effect on the parental intercultural competencies. However, we believe that those differences could not be recorded, taking into account the above findings on generally high IC and EE scores.

Results on the predicting intensity of IC and EE will be discussed in the following text.

Experiences in interacting with people from different cultures have emerged as a good predictor of IC. As IC is one of the elements of IS, we can say that the results of this study are somewhat in agreement with literature data, which indicate the presence of a positive correlation between intercultural experience and IS (Altshuler, Sussman, & Kachur, 2003; Paige, Jacobs-Cassuto, & Yershova, 2003). Considering the theory that the mechanism for raising self-confidence in particular skills is through direct practicing (Bandura, 1986), the obtained results are not surprising. Namely, as IC refers to how confident a person feels in the intercultural environment (Chen & Starosta, 1997), it is not surprising that direct experience in interacting with people from other cultures develops certain intercultural skills, which furthermore raises interaction confidence. However, looking at the two parental groups separately, the prediction model was not significant within the DDP group, while within the TDP group, the parental age and the number of children emerged as good predictors of IC. That is, the results indicate that younger parents and those with more children have higher IC. The fact that younger respondents have higher IC does not necessarily indicate that IC decreases with ageing. Namely, one gets the impression that the younger generations of parents are most likely raised and socialized in a culture and era that highly value the possession of self-confidence, and in which society encourages intercultural interaction. Also, we can assume that younger respondents had more available resources during their schooling and maturing, which could potentially

bring them closer to other cultures, such as foreign language courses, media, social networks, but also the general development of technology. As the concept of intercultural sensitivity is similar to the concept of interpersonal sensitivity, which refers to a person's ability to perceive how other individuals differ in their own behavior, perception, or feelings (Bronfenbrener, et al., 1958, according to Chen & Starosta, 1996), we can assume that parents who have more children, most likely have a greater sensitivity to individual differences, and thus greater self-confidence regarding the general management of these differences. The fact that the regression model was not statistically significant within the DDP group indicates the need for further studies aimed at this particular population.

When it comes to Ethnocultural Empathy, the prediction model was significant, both at the whole sample level, as well as on the level of two parental groups. The results indicate that EE increases with higher education, greater experience in interacting with people from different cultures and having more friends of other ethnicities/religions, and decreases with more frequent experiences of hostile behavior based on ethnicity or religion.

The greater ability to understand other cultures' members' opinions and feeling (Wang, et al., 2003) can be seen in more educated individuals. Some authors argue that a general lack of knowledge about other cultures can lead to barriers to sensing EE (Rasoal, Eklund, & Hansen, 2011). Therefore, we can assume that more educated individuals are more likely to have greater potential and capacity to develop cognitive aspects of intercultural competencies, which relate to cultural awareness, i.e. understanding of cultural conventions that affect how a person from another culture thinks and behaves (Chen & Starosta, 1996, 1998). Through their own academic development, as well as later employment, educated individuals probably have more opportunities to interact with people from other cultures, which consequently leads to greater EE.

The fact that EE is lower among less educated individuals further emphasizes the importance and role of teachers in creating and strengthening the intercultural competencies of children and adolescents attending primary and secondary schools. Furthermore, as it has been shown that experiences in interaction with people from other cultures, experiences in hostile behavior and number of friends of other ethnic/religious affiliationare good predictors of EE, we can say that personal intercultural experiences have a significant effect on the individual's EE intensity. The obtained results are in an agreement with studies which indicate that more practical experience regarding interactions in other cultures that are different from one's own leads to more EE (Rasoal, et al., 2011). Given that EE refers to a person's ability to feel, understand, and care about what a person from another culture cares about (Rasoal, et al., 2011), this effect is expected to be stronger in friendships, as friendships themselves imply a certain level of intimacy. Also, as empathy is a counterbalance to hostile attitudes and behaviors (Litvack-Miller, MacDougall, & Romney, 1997, according to Rasoal, et al., 2011), we hypothesize that this effect may have the opposite direction, that is,

that individuals who experience hostile attitudes and behaviors by others, based on their own ethnicity, are more likely to develop an aversion to other cultures, and therefore have difficulties empathizing with them.

The results of this study also indicate that statistically significant differences in IC and EE between individuals who grew up or are currently living in predominantly monoethnic or polyethnic environments do not occur. A similar study showed that ethnic diversity is not a significant predictor of EE (Rasoal, et al., 2011), so it could be said that similar results were obtained in our study. Such findings confirm the claims that multinationality, i.e. ethnic diversity, does not necessarily imply interculturality, i.e. the interaction of individuals. On the other hand, the mentioned study showed that individuals who grew up in smaller cities have higher EE, so the recommendation for further studies would be to take into account the size, i.e. the type of environment in which the respondents grew up and are currently living in.

Finally, we will look back at the limitations of our study. Although the number of surveyed parents was not small, the sample examined in this study was relatively homogeneous in terms of country of residence, nationality and religion, which prevented comparisons within subgroups of parents. A larger and more heterogeneous sample would significantly contribute to a deeper understanding of the intercultural competencies of parents from our country, but also from the region. Also, as mentioned earlier, sociodemographic factors such as parental gender and marital status were not included in the prediction models, as most respondents were mothers. The recommendation for further research would certainly be to include a larger number of male respondents.

Conclusion

The analysis of obtained data showed that the child's diagnosis does not have a significant effect on the parental intercultural competencies. However, as a very high percentage of surveyed parents report high interaction confidence and high ethnocultural empathy, we believe that the population of parents is generally prone to giving socially desirable answers, as well as overestimating their own competencies.

Experiences in interacting with people from different cultures emerged as important predictors of interaction confidence. The parental age and number of children are shown to be good predictors, but only within the group of parents with typically developing children. The intensity of ethnocultural empathy is higher in more educated parents, individuals with more experiences in interaction with people from other cultures and those who have more friends of other ethnicities/religions, and lower in parents who have experienced hostile behavior based on their own ethnicity or religion. The environment in which the parents grew up and the environment in which they are currently living in do not have a significant

effect on interaction confidence nor ethnocultural empathy. Such results speak in favor of the importance of personal experience in interacting with people from other cultures.

The results of this study indicate the need for interventions, both at the individual and social level, i.e. the need to create educational programs aimed at less educated individuals, as well as to place greater emphasis on the role of teachers employed in primary and secondary schools in creating and strengthening intercultural competencies of children and adolescents. Also, at the global level, it is necessary to further promote tolerance and mutual interaction of people from different cultures, as well as to raise sensitivity to individual differences. We believe that this research provided answers to certain questions, but also opened the new ones, and that additional, extensive studies aimed at the parent population are necessary.

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INTERKULTURALNE KOMPETENCIJE RODITELJA DECE SA RAZVOJNIM POREMEĆAJIMA

Apstrakt

Cilj ove studije bio je ispitivanje interkulturalnih kompetencija roditelja dece sa razvojnim poremećajima (RDRP). U istraživanju je učestvovalo 203 roditelja (89% žena), koji su bili podeljeni u dve grupe. U prvu grupu su bili uključeni RDRP (N=65), dok su drugu grupu činili roditelji dece tipičnog razvoja (RDTR) (N=138). Upitnik korišćen u ovoj studiji je uključivao Revidiranu srpsku verziju skale za procenu Interkulturalne Osetljivosti (SIO), Skalu za procenu Etnokulturalne empatije (EE), kao i niz pitanja koja su se odnosila na sociodemografske podatke roditelja i njihovo pređašnje interkulturalno iskustvo. Kako SIO nije dostigla zadovoljavajuće nivoe pouzdanosti, u daljim analizama korišćena je samo subskala Samopouzdanje u interakciji (SUI). Statistički značajne razlike između RDRP i RDTR u pogledu SUI i EE nisu evidentirane. SUI se povećava sa više iskustva u interakciji sa ljudima iz drugih kultura. Mlađi RDTR, kao i oni sa više dece prijavljuju više SUI. EE se povećava sa višim obrazovanjem, većim iskustvom u interakciji sa ljudima iz drugih kultura i posedovanjem većeg broja prijatelja drugih etničkih/religijskih pripadnosti, a smanjuje sa češćim iskustvima diskriminacije po osnovu etniciteta ili religije. Statistički značajne razlike između SUI i EE između pojedinaca koji su odrasli ili trenutno žive u predominantno monoetničkim ili polietničkim sredinama nisu evidentirane.

Ključne reči: interkulturalne kompetencije, interkulturalna osetljivost, etnokulturalna empatija, roditelji dece sa razvojnim poremećajima

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SEXUAL BEHAVIOR AND STRESFUL EXPERIENCES IN STUDENTS: THE ROLE OF PERSONALITY DIMENSIONS AND ATTACHMENT

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PREDICTION OF SEXUAL SATISFACTION BASED ON SEXUAL PERSONALITY DIMENSIONS

Abstract

Aim of this research is to examine whether sexual satisfaction can be predicted based on the experience of one's own sexuality and the way in which individuals view their own sexuality. The sample is convenient and includes data given by 389 students (m=115; f=274) from the University of Niš, aged 18-31 years. New Sexual Satisfaction Scale Short Form (*NSSS-S;* Štulhofer, Buško & Brouillard, 2011) and Sexy Seven Questionnaire (Schmitt & Buss, 2000) were used in order to collect data. For the purpose of testing research hypotheses we used multiple regression analysis. Results indicate that both Ego-centered and Partner/activity-centered subscales of sexual satisfaction can be predicted based on a model containing sexual personality dimensions. The model is statistically significant (R^2=.19, p<.001; $F_{(5,332)}$=16.339, p<.001) and explains 19.7% of the variance of Ego-centered subscale with sexual attractiveness (β=.28, p<.001), relationship exclusivity (β=.16, p<.05) and sexual restraint (β=-.30, p<.001) as statistically significant predictors. Statistically significant model (R^2=.16, p<.001; $F_{(5,332)}$=13.367, p<.001) explained 16.8% of the variance of Partner/sexual activity centered subscale with sexual attractiveness (β=.34, p<.001), relationship exclusivity (β=.15, p<.05) and sexual restraint (β=-.256, p<.001) as statistically significant predictors. Thus, we conclude that one's sexual satisfaction can be predicted based on an individual's perception of their own sexuality. The way in which we view and describe personal sense of sexuality can affect the sexual satisfaction we perceive.

Key words: *sexual personality dimensions, sexual satisfaction, students*

Introduction

Sexuality as a topic can be found in almost all psychological personality theories. Psychoanalytic theories of Freud and Erikson speak of psychosexual development, Fromm and Rogers put an emphasis on sexuality and romantic functioning and a lot of information about sexual trauma can be found in learning theories (Erikson, 1968; Freud, 1914; Fromm, 1956; Rogers, 1972, as cited in Schmitt & Buss, 2000). The changes that have occurred in the field of sexuality in the last couple of decades (feminism, LGBT + commune, etc.) seem to have shaped

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a completely new view on this topic of human existence. For centuries, sexual behavior was considered a heterosexual act with the goal of procreating life, while today associations related to sexuality are becoming more numerous, from vaginal, oral, anal stimulation to new trends such as telephone sex and sexting, which occur outside of marital and heterosexual relationships (Lehmiller, 2017). With these changes came the need to examine sexual satisfaction and attitudes about sexuality. Having in mind importance of sexuality in adolescence, but also in period of early adulthood it seems of special significance to better understand attitudes about sexuality and their role in sexual satisfaction in students.

Sexual Personality Dimensions

Changes in sexual behavior and attitudes about sexuality in recent decades (Štulhofer, Dokmanović, Ajduković, Božičević & Kufrin, 2005; Twenge, Wells & Sherman, 2015) have indicated the need to examine individual differences in the field of sexuality. Beginnings of examining these differences can be seen in a construction of sociosexual dimension, which on the one hand describes restrictive sociosexual behavior, marked by the predominance of the need for commitment and devotion over sexual intercourse, and on the other hand, nonrestrictive sociosexual behavior, marked by tendency to feel relatively comfortable to engage in sex without prior intimacy (Simpson & Gangestad, 1991).

One of important dimensions of sexuality is perceived attractiveness. Mark and Herbenick (2013) state that very few researchers are exploring the dynamic in perceived attractiveness, and raise a question of how the aspect of attraction is changing over time, grows or weakens, put in context in which individual surrounding and living might change over time. As Nomejko and Dolińska-Zygmunt (2015) suggest, attractiveness differs in men and women. Assessment of sexual attractiveness in women, from the evolutionary concept of sexual attraction, is determined by sexual orgasms and granted satisfaction from sexual intercourse or based on man's strength and wealth and other man's characteristics that results in providing resources in future (e.g. intelligence). On the other side men are attracted by various physical qualities of females, such as youngness and beauty (e.g. full lips, healthy teeth, shapely figure) and energy (e.g. expressiveness). Also, other studies which are taking evolutionary perspective, underlie the relationship between attractiveness (self-perceived attractiveness and attractiveness perceived by others) to have great impact on sexual behavior as it is associated with "good genes" (Gangestad & Thornhill, 1994; Thornhill & Gangestad, 1997, as cited in Rhodes, Simmons, & Peters, 2005). Being judged by others as sexually attractive, raises the possibility of attracting sexual partners and such accurate judgment is important in the mate selection processes in a way that it ensures the individual to not waste effort when it comes to attracting others (Beaulieu, 2007, as cited in Amos & McCabe, 2015). Two relevant theories that

explain the relationship between sexual attractiveness and sexual satisfaction are Object of Desire Self-Consciousness (ODSC) and Risk regulation theory. The first theory by Bogaert and Brotto (2013) is claiming that individuals with self-perception as sexually attractive and desirable to others are likely to have greater sexual experience and sexual wellbeing. On the other hand, Risk regulation theory by Murray (2008) is emphasizing the fact that fear of rejection by potential sexual partners might lead to avoidance of sexual intercourse in order to eliminate the fear of being rejected.

Schmitt and Buss (2000) explain their preference for evolutionary personality theory, considering that individual differences in sexuality are often the consequence of selection and likely to affect the course of current evolution. Lexical approach is also emphasized and is based on an observation that since sexuality appears to be an especially important topic in everyday social life, we could expect that the natural language would be a rich source of terms to describe individual differences in sexuality. Thus, an inventory was constructed to examine individual sexual differences, based on the lexical criteria and evolutionary theory. Using factor analysis, they came to the conclusion that there are 7 dimensions: Sexual Attractiveness (adjectives such as "sexy", "stunning", "seductive", "provocative", "flirtatious", etc), Relationship Exclusivity (includes adjectives that on the one hand denote fidelity and monogamy such as "devoted", "faithful", and on the other, "promiscuous" and "adulterous"), Sexual Restraint (e.g. "virginal", "celibate", "asexual" and "chaste"), Erotophilic Disposition (includes the adjectives as "obscene", "vulgar", "indecent", "indiscreet", "perverted"), Emotional Investment (e.g. "loving", "romantic", "affectionate"), Gender Orientation (indicates femininity versus masculinity), and Sexual Orientation (indicates homosexual versus heterosexual orientation). Although the authors of the inventory themselves (Schmitt & Buss, 2000) question whether the Sexual Personality Dimensions could be subsumed under the Big Five Personality Dimensions, there are opposing findings (Bourdage, Lee, Ashton & Perry, 2007) that support the using of new instrument to differentiate sexual differences among people.

Sexual Satisfaction

After recognizing the inefficiency of existing appraisal to sexual satisfaction as a global phenomenon and that sexual satisfaction is not a nominal variable with two categories (satisfied/dissatisfied), the need to examine this construct as a multidimensional phenomenon emerges (Snell, Fisher & Walters, 1993; Štulhofer & Buško, 2008; Štulhofer, Buško & Brouillard, 2011).

Nomejko and Dolińska-Zygmunt (2015) point out that sexuality as part of human nature is manifested in various ways, such as lust and desire, or psychologically determined factors, or in various behavioral responses leading to orgasm or pleasuring state of arousal. Sexual satisfaction has a subjective

dimension, with cognitive and emotional components, and as such is quite difficult to be operationalized and be precisely defined.

Having in mind that literature concerning sexual satisfaction is expanding it comes as a surprise that no such trend has been observed in the Balkans. Authors (Štulhofer, Gregurović & Štulhofer, 2003) state that insufficient interest in the phenomenon of human sexuality stems from the traditional standpoint of the academic community and the lack of the interdisciplinary study in this phenomenon.

Starting from the critique that existing instruments for examining sexual pleasure are not widely used, Štulhofer and Buško (2008) include observations from clinical and psychotherapeutic practice in order to construct a new scale for assessing this phenomenon. Starting from three visors: personal, interpersonal and repertoire visor, the authors (Štulhofer & Buško, 2008) propose a five-dimensional conceptual model of sexual pleasure that includes: sexual sensations and experiences, sexual concentration, dimension of sexual exchange, emotional connection and frequency, diversity and duration activities. Further examination of this five-dimensional model led to the justification of the use of a two-factor solution. Thus, New Sexual Satisfaction Scale is constructed and it includes two subscales: the Ego-centered subscale and Partner/Sexual activity centered subscale (Štulhofer et al., 2011). The Ego-centered subscale is primarily focused on personal experiences and sensations; it measures sexual satisfaction generated by personal experiences/sensations, while reflecting participant's perception of their partner's reactions and sexual activity in general. Partner/Sexual activity centered subscale measures sexual satisfaction derived from an individual's perception of their partner's sexual behaviors and reactions, and the diversity and frequency of sexual activities (Štulhofer et al., 2011).

Sexual practices are essential for sexual satisfaction. The inclusion of variety of sexual activities, frequency of intercourse and frequency of orgasm to the questionnaire, emphasizes the importance of behavioral aspects of sexuality for our sense of sexual satisfaction (Parish et al., 2006). Burke & Yung (2012; as cited in Nomejko & Dolińska-Zygmunt, 2015) state that feeling of intimacy is enhanced when there is a greater variability in sexual acts, adding that this variability is more important for women.

When it comes to ego-centered sexual satisfaction, literature suggests that the physical appearance and body perception are considered to be one part of sexual attractiveness that is connected to sexual satisfaction and as such is decreasing with age when it comes to women (Thomas, Hamm, Borrero, Hess & Thurston, 2018). Nomejko and Dolińska-Zygmunt (2015) bring light on the relation between sexual attractiveness and sexual satisfaction. For example, self-assessed musculature among young men (Daniel & Bridges, 2012) and the assessment of body, weight and physical fitness is more important to men than women (Meltzer & McNulty 2010). Also, study by Grossman (2003) suggests that people assured of their sexual attractiveness are more prone to initiate and engage in

sexual practices and be more satisfied with their sexual lives. Strong correlation is found between sexual satisfaction and self-esteem (Dolińska-Zygmunt & Nomejko, 2011). Sexual attractiveness can be defined as a form of attractiveness that involves appealing to the sexual desires of another person (Amos & McCabe, 2015). Such definition entails individual capacity of provoking sexual desires in others and thus providing greater sexual pleasure. Previous research shows that ego-centered sexual satisfaction can be affected by the sense of uneasiness with one's body in a negative way (Minčić, Todosijević & Pešić, 2019).

When it comes to partner-centered satisfaction, Mark and Herbenick (2013) point out that there are no studies that examine the association between subjective measures of partner's attractiveness and sexual behavior and the sexual satisfaction in established relationship. Mark and Herbenick (2013) imply that sexual satisfaction and relationship satisfaction are correlated, and Auslander et al. (2007) claim that greater degrees of relationship satisfaction are associated with sexual satisfaction. Literature suggests that a close bond between partners is essential for satisfactory sexual life (Grossman, 2003; Meltzer & McNulty 2010; Necky, 1990, as cited in Nomejko & Dolińska-Zygmunt, 2015). Conley, Piemonte, Gusakova and Rubin (2018) suggest that couples with exclusive relationship (eg. monogamous) have more frequent sex and satisfying sex lives. Main component of this connection is the perceived closeness between partners. Also, one of the factors that play a major role is the quality of the attachment between partners that lead to greater sexual satisfaction (Butzer & Campbell, 2008, as cited in Mark and Herbenick, 2013).

Research problem

After presenting results of previous studies we notice a lack of research on the relationship between sexual satisfaction and personality traits. Based on presented information, our goal is to examine the relationship between the sexual satisfaction and sexual personality dimensions, and whether sexual satisfaction can be predicted based on sexual personality dimensions.

Method

Sample and procedure

The sample was convenient and consisted of 389 students from the University of Niš, 29,6% of them were males (N=115), and 70,4% (N=274) were females, aged 18-31 years (M=22.89; SD=2.63). Most of the participants filled in an online survey, and the remaining data was collected by distributing paper surveys.

Variables and instruments

Sexy Seven Questionnaire (Schmitt & Buss, 2000) was used to examine various aspects of human sexuality. There was no prior Serbian adaptation of the questionnaire therefore, for the purposes of this paper the items were translated using backward translation method. The instrument consists of 67 adjectives originally grouped in seven sexual personality dimensions: Sexual Attractiveness implies adjectives such as sexy, stunning, seductive, provocative, flirtatious etc; Relationship Exclusivity included adjectives that on the one hand denote fidelity and monogamy such as devoted, faithful, and on the other, promiscuous and adulterous; Sexual Restraint dimension included adjectives such as virginal, celibate, asexual and chaste; Erotophilic Disposition included the adjectives as obscene, vulgar, indecent, indiscreet, perverted; Emotional investment included adjectives such as loving, romantic and affectionate, passionate, jealous; Gender Orientation dimension is indicated by the orientation femininity versus masculinity; Sexual Orientation indicates homosexual versus heterosexual orientation.

In this study, the last two dimensions, Gender Orientation and Sexual Orientation, were not included. After conducting the principal component analysis (KMO=.88; Varimax rotation method) and analyzing the factor loadings, items which formed factors Gender Orientation and Sexual Orientation in the original Sexy Seven Questionnaire (Schmitt & Buss, 2000), intertwined in this research. There was no difference between adjectives describing gender qualities and adjectives defining sexual orientation. One possible explanation for this occurrence might be that our student participants themselves don't differentiate between the two. Perhaps the nuance of gender orientation and sexual orientation isn't as clear as we might have expected it to be.

Sexy Seven subscales used in this research had satisfying levels of internal consistency reliability (Sexual Attractiveness α=0.86; Relationship Exclusivity α=0.67; Sexual Restraint α=0.64; Erotophilic Disposition α=0.85; Emotional investment α=0.72).

The New Sexual Satisfaction Scale Short Form (*NSSS-S;* Štulhofer et al., 2011) was used to assess sexual satisfaction regardless of a person's gender, sexual orientation, and relationship status. This Likert type 5-point scale consists of 12 items, grouped in two subscales: Ego-Centered subscale, which measures sexual satisfaction generated by personal experiences/sensations; participants are asked to rate their satisfaction with the aspects of sexuality, such as "The way I sexually react to my partner", "The quality of my orgasms"; Partner/Sexual Activity Centered subscale, which measures sexual satisfaction derived from an individual's perception of the partner's sexual behaviors and reactions, and the diversity and/or frequency of sexual activities. This subscale is consisted of items such as "My partner's ability to orgasm", or "The variety of my sexual activities".

Both subscales had satisfying internal consistency reliability in this study (Ego-Centered subscale α=0.83; Partner/Sexual Activity Centered subscale α=0.78).

Hypotheses

General hypothesis

It is assumed that sexual satisfaction can be predicted based on the model that contains sexual personality dimensions (Sexual attractiveness, Relationship exclusivity, Sexual restraint, Erotophilic disposition, Emotional investment).

Specific hypotheses

It is assumed that Ego-centered sexual satisfaction can be predicted based on the model that contains sexual personality dimensions (Sexual attractiveness, Relationship exclusivity, Sexual restraint, Erotophilic disposition, Emotional investment).

It is assumed that Partner/Sexual activity-centered sexual satisfaction can be predicted based on the model that contains sexual personality dimensions (Sexual attractiveness, Relationship exclusivity, Sexual restraint, Erotophilic disposition, Emotional investment).

Results

First of all, descriptive statistics will be displayed for variables included in this research.

Table 1
Descriptive statistics

	Min	Max	Mean	Std. Deviation	Sk	Ku
Ego-centered sexual satisfaction	1.33	5.00	4.09	.66	-.973	1.06
Partner/Sexual activity-centered sexual satisfaction	1.00	5.00	3.95	.69	-.948	1.18
Sexual attractiveness	1.00	9.00	6.07	1.45	-.485	.138
Relationship exclusivity	4.88	9.00	8.02	.99	1.06	.505
Sexual restraint	1.00	9.00	3.29	1.44	.833	.989
Erotophilic disposition	1.00	8.64	3.91	1.31	.538	.114
Emotional investment	1.00	9.00	6.68	1.18	-.904	1.42

Research variables presented skewness and kurtosis values which are considered to be normal (values between -2 and +2). Relationship exclusivity presented the highest mean value, while sexual restraint had the lowest value (8.02; 1-9 Likert scale).

Inter-correlations between variables were also examined, to ensure that there was no potential multicollinearity.

Table 2
Inter-correlations between variables

		1.	2.	3.	4.	5.	6.	7.
1.	Ego-centered sexual satisfaction	-						
2.	Partner/Sexual activity-centered sexual satisfaction	.668**	-					
3.	Sexual attractiveness	.301**	.289**	-				
4.	Relationship exclusivity	.061	.115**	-.155**	-			
5.	Sexual restraint	-.272**	-.222**	-.115*	.037	-		
6.	Erotophilic disposition	.196**	.092	.413**	-.402**	-.139**	-	
7.	Emotional investment	-.202**	.170**	.523**	.194**	-.005	.130*	-

**Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

According to Table 2, results show that the correlations between five independent variables used in the regression model are low to moderate, thus we can conclude that there is no multicollinearity. Almost all correlations between subscales of sexual personality dimensions and subscales of Sexual satisfaction are statistically significant. There is significant correlation between ego-centered sexual satisfaction and almost all of the predictors, with the exception of relationship exclusivity. Partner/sexual activity-centered sexual satisfaction is correlated with almost all of the predictors with the exception of erotophilic disposition.

Furthermore, multiple regression analysis was used in order to test hypotheses of this research concerning a possible prediction of sexual satisfaction based on sexual personality dimensions.

Table 3
Prediction of Ego-centered sexual satisfaction

Sexual personality dimensions	β	p	Model Summary
Sexual attractiveness	**.288**	**.000**	$F_{(5,332)}=16.339$
Relationship exclusivity	**.166**	**.004**	R= .44
Sexual restraint	**-.304**	**.000**	R^2= .19
Erotophilic disposition	.058	.315	p=.000
Emotional investment	.024	.698	

The model is statistically significant and explains 19.7% of the variance of Ego-centered subscale. Sexual attractiveness (β=.28, p<.001), Relationship exclusivity (β=.16, p<.05) and Sexual restraint (β=-.30, p<.001) are statistically significant predictors. It is relevant to notice that relationship exclusivity is

a significant predictor in this prediction model, and that this predictor had no significant correlation to the criterion.

Table 4
Prediction of Partner/Sexual activity-centered sexual satisfaction

Sexual personality dimensions	β	p	Model Summary
Sexual attractiveness	**.341**	**.000**	$F_{(5,332)}$=13.367
Relationship exclusivity	**.154**	**.009**	
Sexual restraint	**-.256**	**.000**	R= .40
Erotophilic disposition	-.018	.753	R^2= .16
Emotional investment	-.023	.708	p=.000

Statistically significant model explained 16.8% of the variance of Partner/ sexual activity centered subscale. As in the previous model statistically significant predictors are Sexual attractiveness (β=.34, p<.001), Relationship exclusivity (β=.15, p<.05) and Sexual restraint (β=-.256, p<.001).

Discussion

Aim of this research was to examine whether sexual satisfaction can be predicted based on the experience of one's own sexuality and the way in which individuals view their own sexuality,

All research variables presented skewness and kurtosis values which are considered to be normal. Out of all of the variables describing sexual personality it is meaningful to emphasize that Relationship exclusivity has the highest mean. Student participants predominantly view themselves as devoted, faithful and monogamous individuals. Sexual restraint has the lowest mean value, and this subscale includes adjectives such as celibate, chaste and virginal.

Hypotheses that Ego-centered sexual satisfaction and Partner/Sexual activity-centered sexual satisfaction can be predicted based on the model that contains sexual personality dimensions are partially confirmed. Model containing sexual personality variables explains 19.7% of the variance of Ego-centered subscale, and statistically significant predictors were sexual attractiveness, relationship exclusivity and sexual restraint. These same predictors were significant in predicting Partner/Sexual activity-centered sexual satisfaction. The model explains 16.8% of the variance of Partner/Sexual activity-centered sexual satisfaction.

Sexual attractiveness is a significant predictor which included adjectives amorous, charming, sensual, stunning, arousing and alluring. Therefore, the more a person considers himself/herself as sexually attractive (adorable, provocative, flirtatious, hard-to-get…), the more positive his/hers sexual sensations will be, also, he/she will be more satisfied with sexual functioning of his/hers body. This

result is consistent with Bogaert and Brotto (2013) ODSC theory, which declares that individuals with self-perception as sexually attractive and desirable to others are likely to have greater sexual experience and sexual wellbeing. These findings are further confirmed by previous research indicating that sexual satisfaction in people who experience body uneasiness can be negatively impacted (Minčić et al., 2019). Individuals who view themselves as sexually attractive are also more likely to have higher levels of Partner/Sexual activity-centered sexual satisfaction. These individuals will tend to be more satisfied with his/hers partner's ability to experience pleasure during intercourse, and will be more content with emotional exchange afterwards. Accordingly, we confirmed the idea that provoking sexual desire in others provides greater sexual pleasure (Amos & McCabe, 2015).

A significant predictor is relationship exclusivity. If an individual describes himself/herself as loyal and devoted to a relationship, he/she will be prone to find pleasure in his/her sexual experience and will feel greater satisfaction after an intercourse. This confirms prior research data which state that closeness between partners is crucial for satisfying sex life (Grossman, 2003; Meltzer & McNulty, 2010; Necky, 1990, as cited in Nomejko & Dolińska-Zygmunt, 2015). Persons who perceive themselves as devoted to relationship will also tend to be more focused on their partner's sensations and experiences during sexual intercourse, on the variety and frequency of sexual activities. This information is consistent with previous study (Conley et al, 2018), which states that couples in exclusive relationships, such as monogamy, have more frequent and more pleasurable intercourse.

Relationship exclusivity presented as a significant predictor of Ego-centered sexual satisfaction, while there was no significant correlation to this criterion. This noticeable change of significance could be the result of a possible interaction between the predictors themselves. Another explanation could be a possible mediation, and all of these matters deserve to be thoroughly examined, and interpreted. Having in mind that these kind of possible effects between the sexual personality dimensions themselves were not the focus of this research, this analysis is entrusted to future studies.

Another significant predictor is sexual restraint. Parish et al. (2006) found correlation between behavioral aspects of sexual acts (diversity of sexual techniques, frequency of coitus and frequency of orgasm) and sexual pleasure. In line with that, our research shows negative correlation of sexual restraint and sexual satisfaction. If a person considers himself/herself sexually restraint, it will be less likely that he/she will be prone to enjoy his/her own sexual sensations and reactions when sexually aroused. Individuals who viewed themselves as virginal, chaste or asexual will also be less likely to focus on partner's experiences and feelings during intercourse. This is consistent with previous findings that sexual practices are essential for sexual satisfaction.

Conclusion

This study emphasized sexual attractiveness as a relatively strong predictor of sexual satisfaction in both ego-centered and partner-centered sexual satisfaction. Both ego-centered and partner-centered sexual satisfaction can be predicted by a significant predictor relationship exclusivity, as well as sexual restraint, where sexual restraint showed negative relation to sexual satisfaction. Thus, it can be concluded that the way in which young adults view and describe personal sense of sexuality can affect the sexual satisfaction they perceive. These findings could inform the process of individual psychotherapy concerning sexuality, as well as couples therapy when it comes to intimacy, sexuality and relationship satisfaction. The research sample is consisted of predominantly female student population which is a limitation of this study. Sense of one's sexuality was measured based on a young person's view and understanding of themselves, as well as their understanding of the adjectives used in this research. Further research is necessary in order to determine or better examine the sexual personality dimensions and their interrelations. Given the importance of our own experience of sexuality for our sense of sexual satisfaction, further research could provide a meaningful insight into the topic of sexuality itself.

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PREDIKCIJA SEKSUALNOG ZADOVOLJSTVA NA OSNOVU SEKSUALNIH DIMENZIJA LIČNOSTI

Apstrakt

Cilj ovog istraživanja bilo je ispitivanje da li se seksualno zadovoljstvo može predvideti na osnovu načina na koji osoba opaža i doživljava sopstvenu seksualnost. Uzorak je prigodan i obuhvata 389 studenata (m=115; ž=274) Univerziteta u Nišu, starosti između 18 i 31 godine. Za prikupljanje podataka korišćeni su instrumenti New Sexual Satisfaction Scale Short Form and Sexy Seven Questionnaire. Statistički postupak korišćen za testiranje hipoteza istraživanja bila je multipla regresiona analiza. Rezultati ukazuju da se Ego-usmereno seksualno zadovoljstvo, kao i Seksualno zadovoljstvo usmereno na partnera/aktivnost mogu predvideti na osnovu modela koji sačinjavaju seksualne dimenzije ličnosti. Model je statistički značajan (R^2=.19; $F_{(5,332)}$=16.339, p<.001) i objašnjava 19.7% varijanse Ego-usmerenog seksualnog zadovoljstva, sa Seksualnom privlačnošću (β=.28, p<.001), Ekskluzivnošću veze (β=.16, p<.05) i Seksualnom suzdržanošću (β=-.30, p<.001) kao statistički značajnim prediktorima. Statistički značajan model (R^2=.16, $F_{(5,332)}$=13.367, p<.001) objasnio je 16.8% varijanse Seksualnog zadovoljstva usmerenog na partnera/aktivnost, dok su se kao statistički značajni prediktori izdvojili Seksualna privlačnost (β=.34, p<.001), Ekskluzivnost veze (β=.15, p<.05) i Seksualna uzdržanost (β=-.256, p<.001). Dakle, zaključujemo da se seksualno zadovoljstvo osobe može predvideti na osnovu njene percepcije sopstvene seksualnosti. Način na koji opisujemo svoj doživljaj seksualnosti može se odraziti na naš doživljaj seksualnog zadovoljstva.

Ključne reči: *seksualne dimenzije ličnosti, seksualno zadovoljstvo, studenti*

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RESILIENCE IN THE CONTEXT OF A CORONAVIRUS PANDEMIC: A 5-WEEK PROSPECTIVE FOLLOW-UP STUDY

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PERCEIVED STRESS AS A PREDICTOR OF THE SUBJECTIVE ASSESSMENT OF THE HEALTH STATUS OF CHILDREN AND THE YOUTH

Abstract

Here we investigate the role of perceived stress in predicting the subjective assessment of health status. Perceived stress represents a subjective belief about possibility to control and predict one's life as well as the belief in one's ability to cope with the problems. The sample consists of 621 young people (373 girls), students of secondary school and university, average age 18,3. Translated and partly culturally adapted Perceived stress scale was used, which measures the degree to which a person experiences their life unpredictable, out of control and overloading. Results of the research have shown that the average value of perceived stress is 18.88 (SD= 6.03, Min= 0, Max=40), which indicates that our respondents assessed their life as stressful, and the individual differences are quite large. The average value of the subjective assessment of health is 3.92 (SD= 1.03, Min= 1, Max= 5), which indicates that most of the respondents assess their health as very good. Results of linear regression analysis have shown that the perceived stress is a good predictor of subjective assessment of health, in which the subjects with higher score on perceived stress scale assessed their health worse, and vice versa (F $(1,535)$= 61.344, p= 0.000, β= -0.321)). Perceived stress explains 10.3% of the variance in the subjective assessment of the health status.

Key words: perceived stress, subjective assessment of the health status, children and the youth

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Introduction

The modern definition of health recognizes the complex and dynamic interaction of physical, mental and social well-being and defines health as physical, social and mental well-being, and not only as the absence of disease or disability. This way of defining health supports the biopsychosocial model of health, which emphasizes the importance of biological, psychological and social factors in health and sickness.

Health is a universal value that is highly ranked in the value system for the majority of people, often in the first place. The issue of health is multi-layered and complex, it can be observed on several levels, from personal to collective, and from several aspects, including personal perception of health. Youth is often synonymous with experiencing full health and strength; however, health and health behavior issues are of paramount importance among this population. Young people are an indispensable resource of a country; therefore, it is extremely important to consider various aspects of the health and health behavior of young people.

Numerous studies have shown that stress directly and indirectly affects various aspects of human life and functioning, including the health of the individual. Stress is most often defined as a state of disturbed physiological, psychological and social balance, caused by an individual assessment of physical, mental or social vulnerability. Children and the youth are largely exposed to various forms of stress. The period of intensive growth and maturation brings with itself numerous challenges for the young person, both internally and externally. Sources of stress become a string of cognitive, physical, social and emotional changes that an adolescent experiences, but constant and increasing demands from the environment (Vaselić & Mihajlović, 2019) are sources of stress, as well. An important link between sources of stress and stress reactions is the personal perception of the individual (Lazarus, 1966). Perceived stress is a subjective belief about how much it is possible to control and predict one's life, how often a person has to deal with various stressful events, as well as a belief in one's own abilities and strength to deal with problems. Stressful situations can have serious consequences, both for adolescent health and for later adjustment in life (Seiffge-Krenke, 2000).

Long-term exposure to stress of young people, with the perception of stress as exhausting and exceeding personal capacity to overcome, can affect the perception of their own health status, which in addition to objective indicators, is an important component of health as a whole.

Negative trends in the mental and subjective health of the youth pose a challenge in the public health work in many countries around the world. Self-assessed mental and subjective health problems, such as pain, sleep disorders, anxiety, and various stress-related problems, appear to increase over time in older adolescents, especially young girls (Wiklund, Malmgren-Olsson, Öhman, Bergström & Fjellman-Wiklund, 2012).

Subjective health problems refer to a set of somatic and psychological symptoms that an individual experiences, with or without a specific diagnosis (Ursin & Eriksen, 2004). Somatic symptoms such as fatigue, headache, and abdominal pain, and psychological symptoms such as irritability and nervousness are common in otherwise healthy adolescents (Hagquist & Andrich, 2004; Jellesma, Rieffe & Terwogt, 2007). Simultaneous occurrence of symptoms is not uncommon and requires special attention because it is associated with poor general health, low life satisfaction (Ravens-Sieberer, Torsheim, Hetland, Vollebergh, Cavallo, Jericek & Erhart, 2009) and more frequent use of medications (Gobina, Välimaa, Tynjälä, Villberg, Villerusa, Iannotti & HBSC Medicine Use Writing Group, 2011).

During the adolescence period, school and peer-related stressors are reliable predictors of subjective health problems. For example, school failures (Hurrelmann, Engel, Holler & Nordlohne, 1988), lack of teacher support (Ghandour, Overpeck, Huang, Kogan, & Scheidt, 2004), bullying and rejection by peers (Jellesma et al., 2007), all have a direct impact on the frequency of symptoms. Family stress, such as communication problems (DeVriendt, Moreno & De Henauw, 2009) and conflicts with parents (Hurrelmann et al., 1988) are also strongly correlated with symptoms.

Adolescent stress is associated with multiple stressors and sources of stress such as school success, partnerships, peer violence and peer pressure, financial problems, taking responsibility, and worrying for the future (Byrne, Davenport & Mazanov, 2007). By placing these aspects in a broader social context, the lives and life challenges of young people look even more complex.

Subjective health problems are in theory at least partially related to psychosocial stress. Frequent or chronic stress and related emotional and psychological arousal may play an etiological role in the development of frequent health problems (Ursin & Eriksen, 2004).

Perceived stress and psychosomatic health problems peak in young girls aged 16–18 years (Friberg, Hagquist & Osika, 2012). In this age group, 37% of young girls and 22% of young boys considered themselves to be "very often" under stress. In a sample of 16-year-old high school students in Stockholm, one third, with over 14% of girls and 3% of boys, reported severe symptoms of stress exceeding the limit value for chronic stress (Schraml, Persky, Grossi & Simonsson-Sarnecki, 2011).

Previous research has also established an association between different sources of stress, perceived stress, and subjective health problems (Hetland, Torsheim & Aarø, 2002; Hjern, Alfven & Östberg, 2008; Torsheim & Wold, 2001). The most common subjective health problems of the youth are headache, abdominal pain, musculoskeletal symptoms, sleep disorders and nervousness (Haugland, Wold, Stevenson, Aaroe & Woynarowska, 2001). In terms of sources of stress, the most vulnerable is the group of adolescents who report experience from the category of chronic burden as their most stressful experience - young people who are classified in this group have the highest number of health problems and

the lowest mental health indicators, such as self-esteem and optimism. (Zotović-Kostić & Beara, 2016).

Previous research has found a high prevalence of subjective health problems and perceived stress, especially in young girls (Wiklund et al. 2012; Zotović-Kostić & Beara, 2016). For almost all health problems, it is the girls who have experienced them two or even three times more often. In a study on a sample of young people from Vojvodina, girls had a more pronounced self-perception of stress than boys, with students from grammar schools having the most pronounced experience of stress, compared to primary and secondary school students (Zotović-Kostić & Beara, 2016). In the previous research, perceived stress was associated with both physical and psychosomatic symptoms, including sleep disorders and psychological symptoms of anxiety and depression (Jellesma et.al. 2007; Schraml et.al. 2011). However, the strongest association was found between perceived stress, psychosomatic symptoms, and anxiety.

A consistent pattern of gender differences in subjective health and physical and mental health problems is in accordance to findings from several previous studies on the subjective health of young adolescents (Beara & Zotović-Kostić, 2016; Friberg et al., 2012; Schrami et al., 2011; Torsheim, Ravens-Sieberer, Hetland, Välimaa, Danielson & Overpeck, 2006; Zotović-Kostić & Beara, 2016).

In Swedish youth, the most common source of perceived stress is the high pressure and demands from the school, which was the response of 63.6% of girls and 38.5% of boys (Wiklund et al. 2012), and in the sample of the youth from Vojvodina the most pronounced sources of stress came from the domains of family (40%) and academia (20%) (Zotović-Kostić & Beara, 2016). Perceptions of self-imposed demands and internal pressures are also quite common, especially among girls (Wiklund et al. 2012; Wiklund, Bengs, Malmgren-Olsson & Öhman, 2010). In South Korea, 32.3% of high school boys and 47.6% of girls perceive that they are under huge amounts of stress (Kang & You, 2018). The most common sources of such perceived stress are excessive learning and an educational system that emphasizes the strict competence of students to take entrance exams. These stressful situations can have a negative effect on the mental health and life habits of young people. For example, higher levels of perceived stress in adolescents are associated with less frequent involvement/engagement in health-promoting behaviors, increased use of carbohydrate-rich foods, and irregular meals (Chang, Kim, Auh & Jung, 2012). Expressed perceived stress can impair reasoning in a similar way to the exposure to a threatening situation, leading to less frequent engagement in behaviors conducive to health promotion or even complete cessation.

The factors explaining the decline in the subjective well-being and health problems of the youth have yet to be largely explored, especially the explanation of teachers and the astonishing gender differences (Hagquist & Andrich, 2004).

The research whose results we present in this paper aimed to determine whether the level of perceived stress is a statistically significant predictor of the

subjective assessment of the health status of the youth and whether there are differences by gender.

Method

Sample

The sample of this research consisted of 621 young people, of which 373 (60.06%) girls and 248 (39.94%) boys, high school students of the final year, and first- and second-year students, with average age being 18.3 years. The research was conducted in 2018. in Novi Pazar. Before conducting the research, the students received information about the examiner, the institution he comes from and the reason for conducting the research. Respondents were also informed about the purpose of the research, how the collected data would be used, and that the survey was anonymous and voluntary. Prior to taking the tests, the respondents were given clear and precise instructions on how to answer them. The parents' consent was obtained for the participation of the children in the research, befor the instruments were given to the underage students.

Instruments

The following instruments were used in the research:

Perceived stress scale (Cohen, Kamarck & Mermelstein, 1983) which measures the degree to which a person experiences their life as unpredictable, out of control and overwhelming, which represents the three basic components of experiencing stress according to Lazarus and Folkman. The scale consists of ten items such as: *During the last month, how often have you been upset about a sudden event? … Felt nervous and stressed?* The respondent answers on a scale from 0 (never) to 4 (very often). The total result is obtained by summing the answers so that the values range from 0 to 40. A higher score indicates a higher level of perceived stress. The Cronbach's alpha coefficient indicates adequate instrument reliability in this sample ($\alpha = .73$).

A single-item scale of the subjective assessment of health status, constructed for the purposes of this research. Respondents were asked to answer the question *"How would you assess your health?"* Respondents answered on a scale from 1 (poor) to 5 (excellent), with a higher score indicating a better subjective assessment of their own health.

Questionnaire on sociodemographic characteristics, created for the purposes of this research, which contains data on gender and age of respondents.

Data processing

The research data was processed using the statistical package SPSS, version 20. Descriptive statistical methods, Mann-Whitney's U test and linear regression analysis were used for data processing.

Results

In the following lines we will describe the average values and other descriptive properties of the perceived stress score as well as the subjective assessment of health status (Table 1). We will also compare the values of perceived stress in relation to gender and examine its predictive value for subjective assessment of health.

Table 1

The degree of expression of perceived stress and the subjective assessment of health status

Variable	M	SD	Median	Minimum	Maximum
Perceived stress	18.88	6.03	19	0	40
Subjective assessment of health status	3.92	1.03	4	1	5

The results of the research showed that the average value of perceived stress of the respondents is 18.88 (SD = 6.03, Min = 0, Max = 40), which indicates that the respondents perceive their life as quite stressful, but there are also large individual differences taking into account the value of standard deviation (Table 1).

The average value of the subjective health assessment is 3.92 (SD = 1.03, Min = 1, Max = 5), which indicates that most respondents assess their health as good (Table 1).

Table 2

Mann Whitney's U test: gender differences in values of perceived stress and the subjective assessment of health status

Variable	Gender	Mean	SD	Median	Mann-Whitney's U test	p
Perceived stress	Male	17.53	5.79	17	28437.00	.000*
	Female	19.78	6.01	20		
Subjective assessment of health status	Male	4.06	1.04	4	35131.50	.002*
	Female	3.82	1.03	4		

* $p < .01$

The results of the Mann Whitney U test showed that there were statistically significant gender differences in the values of perceived stress (U = 28437.00, p = 0.000, p <0.01) and subjective assessment of health status (U = 35131.50, p = 0.002, p <0.01). According to the obtained findings, female respondets achieved higher results on the scale of perceived stress (M = 19.78, SD = 6.01, Med. = 20)

compared to male respondents (M = 17.53, SD = 5.79, Med. = 17). When it comes to subjective assessment of health status, male respondents rate their health as better (M = 4.06, SD = 1.04, Med. = 4) compared to female respondents (M = 3.82, SD = 1.03, Med. = 4).) (Table 2).

Table 3

Single linear regression: ANOVA results and standardized coefficient of the perceived stress as a predictor of the subjective assessment of health status

Variable	Subjective assessment of health status		Model Summary
	β	p	
			R = .321
			R^2 = .103
Perceived stress	-.321	.000*	$F_{(1,535)}$ =61.344
			p = .000

*p< .01

The results of linear regression analysis showed that perceived stress is a good predictor of the subjective health assessment, with respondents who score higher on the scale of perceived stress, assess their health as worse and vice versa, respondents who score lower on the scale of perceived stress, generally assess their health as better (F (1,535) = 61,344, p = 0,000, β = -0.321). Perceived stress explains 10.3% of the variance of the subjective assessment of health status (Table 3).

Discussion

Despite the large individual differences, we can say that the average level of perceived stress among young people in Novi Pazar is quite high (M = 18.88), even higher than the level of perceived stress determined by a recent study on a geographically and culturally similar sample of young people from Vojvodina (M = 17.49; Zotović-Kostić & Beara, 2016). Compared to the normative sample for the American population (Cohen, 1994) , where the average value for the age group of adolescents was 14.2, both results from our country obtained by the same scale indicate a significantly higher level of perceived stress in adolescents, indicating an urgent need for additional research and preventive actions to protect the mental health of young people in our country. In abovementioned previous research with the youth from Vojvodina, the established correlation between perceived stress and stressors in the domain of chronic burden, which originates from the domain of family relations (for example, tensions and disagreements among family members), but also from the academic domain, indicates possible directions of

preventive activities. Also, this research suggests that the most health and risk behavior issues were found in the adolescents which report stress experiences from the domain of personal and partnership problems, although those domains were not the most frequently reported as causes of perceived stress in the sample from Vojvodina.

Although some studies find no gender differences in degree of stress or most frequent stressors, (De Anda, Baroni, Boskin, Buchwald, Morgan, Ow, Gold & Weiss, 2000), differences between girls and boys in perceived stress and health have been found in numerous of previous studies. Female adolescents reported more sensitivity to interpersonal stressors and to those related to peer values regarding clothes and appearance (Coleman, 2011) and also reported higher amount of perceived interpersonal stress, maladaptive coping and emotional distress (Hampel & Petermann, 2006).

In addition, females - both adolescent and adults - report more pain, psychosocial problems and mental health problems than males; thus, females seem to be more vulnerable to stress, and adverse life events to a larger extent influence physical complaints and health issues in females (Østerås, Sigmundsson & Haga, 2016; Zotović-Kostić & Beara, 2016). Similar gender differences were confirmed in our study. Girls have a significantly higher level of perceived stress as well as a lower level of the subjective health assessment. A possible explanation for these gender differences can be found in the results of the previous research in Serbia, in which girls had lower average values on protective health factors, such as optimism, self-efficacy, self-esteem, life satisfaction, as well as higher average levels of pessimism, health discomfort (somatization, anxiety, social dysfunction and overall health), and the risk of eating disorders (Zotović-Kostić & Beara, 2016).

Given that perceived stress is a good predictor of the subjective health assessment, the conclusion is that adolescent health care must include measures to reduce the causes of stress or develop resilience and constructive coping strategies in the youth, especially the girls. Preventive programs aimed at learning about the causes and manifestations of stress, the development of resilience and coping strategies, are very much needed by young people. We believe that the role of the school is of great importance for improving the health of young people, for example, by supporting the youth in coping with academic demands, by giving emotional support in family problems, offering stress education and developing the inter-subject (key) competence of the Health care through regular teaching and extracurricular activities.

We see shortcoming of this research in quantitative approach which does not provide more in-depth understanding of the dynamics of the underlying and protective factors; thus, we recommend mix-method for further research of these issues.

Conclusion

Results of the research have shown that the average value of perceived stress is quite high, and that adolescents in Novi Pazar assess their life as pretty stressful, although the individual differences are large. Nevertheless, most of the respondents assess their health as very good.

Results of the linear regression analysis have shown that the perceived stress is a good predictor of the subjective assessment of health, in which the subjects with higher score on perceived stress scale assessed their health worse, and vice versa. Perceived stress explains 10,3% of the variance in the subjective assessment of health status.

Long-term exposure to stress in youth, with the perception of stress as exhausting and exceeding the personal capacity to overcome, can affect the perception of their own health status which, in addition to objective indicators, is an important component of health as a whole.

New research into perceived stress and health in adolescents should tackle the possible protective factors for stress, such as self-efficacy, self-esteem, optimism, satisfaction in life, and should also include qualitative investigation of adolescents' perception of those factors and their interrelations.

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PERCIPIRANI STRES KAO PREDIKTOR SUBJEKTIVNE PROCENE ZDRAVSTVENOG STATUSA

Apstrakt

U ovom istraživanju proveravan je uticaj percipiranog stresa na subjektivnu procenu zdravstvenog statusa. Percipirani stres predstavlja subjektivno uverenje o tome koliko je moguće kontrolisati i predvideti svoj život, kao i uverenje u vlastite sposobnosti i snage nošenja s problemima. Ukupan uzorak je činilo 621 mladih

(373 devojaka) učenika srednjih škola i fakulteta, prosečne starosti 18,3 godina. Korišćena je Skala percipiranog stresa koja meri stepen u kojem osoba doživljava svoj život nepredvidljivim, van kontrole i preopterećujućim. Rezultati istraživanja su pokazali da prosečna vrednost percipiranog stresa ispitanika iznosi 18.88 (SD=6.03, Min=0, Max=40), što ukazuje da ispitanici svoj život doživljavaju kao stresan, ali su i velike individualne razlike. Prosečna vrednost subjektivne procene zdravlja iznosi 3.92 (SD=1.03, Min=1, Max=5), što je podatak koji ukazuje da većina ispitanika procenjuje svoje zdravlje kao dobro. Rezultati linearne regresione analize su pokazali da je percipirani stres dobar prediktor subjektivne procene zdravlja, pri čemu ispitanici koje beleže više rezultate na skali percipiranog stresa, svoje zdravlje procenjuju kao lošije i obrnuto (F(1,535)=61.344, p=0.000, β= -0.321). Percipirani stres objašnjava 10.3% varijanse subjektivne procene zdravstvenog statusa.

Ključne reči: percepcija stresa, procena zdravstvenog statusa, deca i mladi

APPLIED PSYCHOLOGY OF MORALITY

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BELIEF IN AN UNJUST WORLD AND PERSONALITY TRAITS AS PREDICTORS OF SEXIST ATTITUDES

Abstract

Belief in an unjust world is an alternative scheme of a predictable and meaningful world. The injustice of the world can be seen in various discriminatory attitudes towards people and gender discrimination is one of them. According to the theory of ambivalent sexism, we can distinguish hostile sexism (negative attitudes towards women) and benevolent sexism (women are recipients of male protection and love but gender roles are limited). Our research focuses on the following question: is it possible to predict gender discrimination based on the beliefs in injustice of the world (measured by VUNS; Ćubela-Adorić, 1999) and personality traits (HEXACO-60; Međedović et al., 2019). The Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996), adapted to Serbian language, were used also. The sample consisted of 408 participants, aged 18 to 58 (M=22.55; SD=4.302). The results showed that males use both form of sexism more frequently than females. The results of hierarchical regression analysis showed that hostile sexism can be predicted by the model which include belief in an unjust world and openness (R^2=.208; F(3.402)=35,654; p<.000), when gender influence is controlled. The belief in an unjust world, emotionality, extraversion and openness (R^2=.200; F(5,400)=14,272; p<.000) proved to be significant predictors of benevolent sexism. Interpretation of results is based on earlier findings.

Key words: belief in an unjust world, ambivalent sexism, hostile and benevolent sexism, HEXACO personality traits, gender differences

Introduction

The notion of believing in world justice has been undergoing numerous reconceptualizations for decades, and one of the ways to determine its meaning is generated by examining its connection with other psychological constructs. This stable personality characteristic, based on the implicit justice motive, is often associated with conservative social attitudes and political views (Nudelman, 2013). During the second half of the 20th century, there have been changes in

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the socio-cultural and political field motivated by the need for achievement of gender equality, and with them the reemergence of old forms of discrimination under new names and different manifestations. The focus of this research will be to examine the changes that have led to new forms of sexism due to the social undesirability, and in some ways illegality of open expression of prejudice towards women. Modern sexism has two forms: overt and covert. Overt sexism refers to the unequal and harmful treatment of women that is easily noticeable. Covert sexism also implies unequal and harmful treatment of women, but this treatment takes place in a hidden and secret way and is therefore not so easily noticed. Covert sexism is characterized by an openly unequal and harmful treatment of women, which goes unnoticed precisely because such behavior is considered common or normal (Šimac, 2017). With the emergence of new forms of discrimination, it seems necessary to examine attitudes about the male-female relations and beliefs about the justice of the modern world in order to ensure further development towards gender equality, as well as other social categories. The main subject of these changes is the individua, with all its characteristics and abilities. Its behavior is primarily guided by his personality, so we will examine whether certain personality traits are behind these beliefs and attitudes.

Ambivalent sexism

As a subset of prejudice, sexism is often used in the context of antipathy towards women. It is assumed that antipathy leads to discriminatory behavior towards the oppressed group and often is justified by the need of society for the existence of a hierarchy (Glick & Fiske, 2001). Glick and Fiske's (1996) theory of ambivalent sexism presupposes a division into hostile and benevolent sexist attitudes toward women. According to this theory, male structural power and interdependence between men and women are factors that contribute to an ambivalent attitude towards the opposite gender. Hostile sexism is directed toward women who threaten the advantage of male structural power (Glick & Fiske, 2001). It refers to negative attitudes towards women based on misogyny (hatred towards women). This type of sexism is aimed at women who step out of traditional roles and thus threaten to jeopardize power relations in the patriarchal system. It also arises from the need for men to defend their superior position in society. On the other hand, benevolent sexism is directed toward women who accept traditional gender roles (Glick & Fiske, 2001). In the background of benevolent sexism lies the comprehension of inferiority of women in gender relations. Due to its positive tone, it is often not recognized as sexism. The authors (Glick & Fiske, 2001) believe that this apparent concern is actually another way to maintain the higher status of men. Benevolent sexism is characterized by positive attitudes towards women, which are characterized as recipients of male protection, idealization and love. But also, stereotypically in limited gender roles (Glick & Fiske, 1996).

Belief in an unjust world

The belief in the justice world is a human need, based on the assumption that people get what they deserve and deserve what they get (Lerner 1980). Lench and Chang (2007) stated that belief in an unjust world is characterized by the insight that people often get what they do not deserve or do not get what they deserve. Also, authors (Lench & Chang, 2007) believe that this is the way an individual copes with negative experiences. When we talk about negative experiences, the feeling of inability to achieve a positive outcome can be perceived as a threat to identity. As a result, individuals feel that a negative event is more a consequence of an unjust world than a reflection of their personal potential. We believe that if a person expresses a belief in an unjust world, that he is more prone to discriminate against others and believes that not all people deserve the same chances in life, therefore he is more prone to express sexist attitudes. In line with that, it could be said that belief in an unjust world has a self-protective function and Lerner (1980) characterizes this strategy as the *penultimate defense*.

HEXACO personality model

Recent studies have indicated that maybe five-factors are not the most adequate model when it comes to describing personality structure. As a solution, a six-factors personality model has been proposed. One of the most well-known operationalizations of the revised model is the HEXACO structure (Lee & Ashton, 2004). This personality model is also operationalized as hierarchical across six domains, each of which has four subordinating traits. It is called HEXACO because it is an acronym for the name of the personality dimension: (a) honesty versus humility (H-honesty / humility) which includes sincerity, justice, avoidance of greed and modesty; then (b) emotionality (E-emotionality) with subdimensions timidity, anxiety, addiction and sentimentality; (c) extraversion (X-eXtraversion) which encompasses social self-esteem, social courage, sociability and liveliness; (e) dimension co-operation versus anger (A-agreeableness) which includes a tendency to forgive, tenderness, flexibility and patience; (e) conscientiousness (C-conscientiousness) includes organization, diligence, perfectionism and prudence; and (f) openness to experience (O-openness) with by respecting aesthetics, curiosity, creativity and unconventionality. From the content of the honesty dimension, it is assumed that this factor represents a personality trait that participates in the generation of morally relevant behavior (Medjedović et al., 2019).

Research problem

Previous research (Dielhl, Rees & Bohner, 2016; Sakalh-Ugurlu, Yalcin & Glick, 2007; Stromwall & Pedersen, 2013; Valor-Segura, Ekxposito & Moya, 2011) has included constructs of ambivalent sexism and beliefs in the injustice of the

world with the aim of examining their predictive power of sexual harassment and attitudes towards rape victims. Despite the number of these researches, the connection between them is rarely examined and does not go beyond examining a correlation between them. Moreover, the results of this researches are often contradictory (Dielhl, et al., 2016; Sakalh-Ugurlu, et al., 2007; Stromwall & Pedersen, 2013; Valor-Segura, et al., 2011). Based on this, the goal of our research is to examine whether sexist attitudes towards women, can be predicted based on a belief in an unjust world and HEXACO personality traits. The initial hypothesis is that belief in an unjust world and personality traits contribute to the prediction of sexism. We also assume that there are gender differences in sexism.

Method

Sample

The research sample consists of 408 participants aged 18 to 58 years ($M = 22.55$; $SD = 4.302$). The sample is composed mainly of student respondents, aged 19 to 26, who make up about 90.6% of the sample. Collected sample included people under the age of 19, whose share is 1%, as well as people over the age of 26, who make up the remaining 8.4% of the sample. The sample consists of 91 male subjects and 317 female subjects. Due to the exposed characteristics of the collected sample, when analyzing the data, the variables, gender and age will be treated as control variables.

Instruments

The Scale of Belief in an Unjust World (BUW; Ćubela-Adorić, 1999) is consisted of 10 statements that express basic belief that the world we live in is unjustful (e.g. "Honest people suffer the most"). The respondents estimate the degree of agreement with these statements on a six-point Likert-type scale (1- totally disagree to 6- totally agree), and the total score is determined as the average value of the estimates given on all questions. The reliability of the internal consistency of this one-dimensional construct, expressed through the Cronbach's α coefficient, ranges from .78 to .90 (Ćubela-Adorić, 2002), which was also confirmed on our sample (α = 0.87).

Ambivalent Sexism Inventory (ASI; Glick & Fiske, 1996) consists of a dimension of hostile sexism (HS) and dimension of benevolent sexism (BS) towards women. In total, this scale consists of 22 statements (e.g. "Feminists are not seeking for women to have more power than men", "Women should be cherished and protected by men"), to which respondents respond by noting the degree of agreement on a six-point Likert-type scale (0- totally disagree to 5- totally agree). The reliability of this questionnaire expressed through Cronbach's Alpha coefficient, ranged from .83 to .92 for the whole scale; for hostile sexism it ranges between .80 and .92, and for benevolent sexism between .73 and .85 (Glick

& Fiske, 1996). For the purpose of this research, we have translated and adapted this scale into the Serbian language. On our sample, dimension reliability was determined for: hostile sexism (α=.90) and benevolent sexism (α=.85).

HEXACO Personality Inventory (HEXACO-60; Međedović, Ćolović, Dinić & Smederevac, 2019) presents the adaptation of HEXACO-PI-R questionnaire by Lee and Ashton (2016; as cited in Međedović, Ćolović, Dinić & Smederevac, 2019) for the Serbian speaking area. The respondents answer on 60 statements that refers to them by recording their self-assessment of the extent using a five-point Likert-type scale (from 1-totally disagree, to 5-totally agree). Internal consistency reliability calculated by Cronbach α coefficient ranges from .78 to .83 (Međedović et al. 2019). Reliability of HEXACO scales on our sample is good enough for research purposes: honesty (α=0.74), emotionality (α=0.75), extraversion (α=0.82), cooperation (α=0.69), conscientiousness (α=0.76) and openness to experience (α=0.70).

Results

Data analysis covers descriptive statistics, gender differences, relations between research variables and regression analysis.

Table 1
Descriptive statistics (Belief in an unjust world, sexism, HEXACO traits)

	M	SD	Min	Max	Skewness	Kurtosis	K-S
Belief in an unjust world	3.23	.99	1.00	6.00	.193	-.383	.003
Hostile sexism	2.30	1.15	.00	5.00	.035	-.811	.008
Benevolent sexism	2.45	1.02	.00	5.00	.066	-.716	.007
Honesty	3.64	.74	1.00	5.00	-.583	.110	.000
Emotionality	3.33	.71	1.00	5.00	-.228	-.302	.006
Extraversion	3.13	.81	1.00	4.90	-.321	-.417	.000
Cooperation	2.88	.67	1.00	4.80	.087	-.269	.021
Conscientiousness	3.60	.68	1.30	5.00	-.298	-.241	.000
Openness	3.65	.68	1.70	5.00	-.389	-.456	.000

Note: K-S test- significance of the Kolmogorov-Smirnov test.

Table 1 shows descriptive data of the examined variables in our sample. The results of the Kolmogorov-Smirnov test (Table 1) show that none of the examined variables have normal distribution, but measures of normality of these variables (skewness and kurtosis) indicate that the deviations are not large: skewness ranged from 0.035 (hostile sexism) to -0.583 (honesty); while kurtosis ranged from 0.110 (honesty) to -0.811 (hostile sexism). Based on this data, we used the parametric techniques in further analysis.

	BUW	Hostile sexism	Benevolent sexism	Honesty	Emotionality	Extraversion	Agreeableness	Conscientiousness	Openness
BUW	1	.							
Hostile sexism	.381**	1							
Benevolent sexism	.290**	.575**	1						
Honesty	-.192**	-.134**	-.121*	1					
Emotionality	.109*	-.044	.099*	.054	1				
Extraversion	-.177**	.016	.184**	.184**	-.177**	1			
Agreeableness	-.231**	-.037	.037	.037	-.036	.036	1		
Conscientiousness	-.241**	-.103**	-.100*	.294**	-.045	.152**	-.036	1	
Openness	-.163**	-.185**	-.218**	.041	.014	.001	.013	.228**	1

Note: BUW- Belief in an unjust world.

*p < .05, **p < .01

From Table 2 it can be seen that the belief in the unjust world is statistically significantly correlated with hostile sexism, benevolent sexism and all personality traits covered by the HEXACO model. The correlation between the belief in an unjust world and hostile sexism is positive and medium in intensity, while the correlation between the belief in an unjust world and benevolent sexism is also positive, but its intensity is low. All correlations of belief in an unjust world and personality

traits are negative and of low intensity, except for the correlation of this construct with emotionality, which has a positive direction. The results further indicate that hostile sexism is statistically significantly associated with belief in an unjust world, benevolent sexism, honesty, conscientiousness, and openness to experience. The correlation of hostile and benevolent sexism is positive and of medium intensity, while the correlation of hostile sexism and honesty, conscientiousness and openness to experience are negative and of low intensity. Further, the results indicate that benevolent sexism is statistically significantly associated with belief in an unjust world, hostile sexism, and personality traits honesty, emotionality, extraversion, conscientiousness, and openness to experience. The correlation of benevolent sexism with the listed personality traits is of low intensity, and while benevolent sexism and emotionality are positively correlated, its correlation with honesty, extraversion, conscientiousness and openness to experience is negative.

To examine the difference between the genders in terms of hostile and benevolent sexism t test for independent samples was used, the results of which are shown in Table 3.

Table 3
Gender difference in the expression of Ambivalent sexism (t test)

Dimension	Gender	N	M	t	p
HS	Male	91	2.77	4.527	.000
	Female	317	2.16		
BS	Male	91	2.65	2.182	.030
	Female	317	2.39		

Note: HS- Hostile sexism BS- Benevolent sexism

The results of the t test indicate that there is a statistically significant difference between the genders when it comes to expression of hostile and benevolent sexism, whereas male respondents show higher scores than women on both subscales. Based on these results, when examining the predictive power of belief in an unjust world for hostile and benevolent sexism, the variable gender was included in the hierarchical regression procedure, in order to control its effect.

In order to determine whether hostile sexism can be predicted based on belief in an unjust world and personality traits honesty, conscientiousness and openness to experience, (which has statistically significant correlation with criterion (see Table 3), hierarchical regression analysis was used, whereby gender effect is controlled.

Table 4

Table 4
Prediction of hostile sexism based on gender, belief in an unjust world, and personality traits

Model	Predictor variables	B	β	p	Model summary
1	Gender	-.604	-.219	.000	R=.219 R²=.048 ΔR²=.048 F(1,406)=20.494 p= .000
2	Gender	-.594	-.216	.000	R=.475
	BUW	-.407	.352	.000	R²=.208
	Honesty	-.017	-.011	.821	ΔR²=.160
	Conscientiousness	-.039	-.023	.640	F(4,402)=20.494
	Openness	-.206	-.121	.008	p=.000

Note: BUW- Belief in an unjust world

The results show that the model that predicts hostile sexism based on the belief in an unjust world, and personality traits honesty, conscientiousness and openness to experience, when the effect of gender is controlled, is statistically significant, and that 20.8% of the criterion can be explained based on it. The variable belief in an unjust world, which is also the best predictor of hostile sexism, was singled out as a statistically significant predictor. Another statistically significant predictors are gender and openness to experience.

In order to determine whether benevolent sexism can be predicted based on belief in an unjust world and personality traits honesty, emotionality, extraversion, conscientiousness and openness to experience, which has statistically significant correlation with criterion, (see Table 4), hierarchical regression analysis was used, whereby gender effect is controlled.

Table 5
Prediction of benevolent sexism based on gender, belief in an unjust world, and personality traits

Model	Predictor variables	B	β	p	Model summary
1	Gender	-.264	-.108	.000	R=.108 R²=.012 ΔR²=.012 F(1,406)=4.763 p= .030

	Gender	-.341	-.139	.005	
	BUW	.287	.279	.000	R=.447
	Honesty	-.019	-.014	.782	R²=.200
2	Emotionality	.234	.164	.001	ΔR²=.188
	Extraversion	.321	.254	.000	F(6,402)=14.274
	Conscientiousness	-.041	-.028	.579	p=.000
	Openness	-.253	-.168	.000	

Note: BUW- Belief in an unjust world

The results show that the model that predicts benevolent sexism based on the belief in an unjust world, and personality traits honesty, emotionality, extraversion, conscientiousness and openness to experience, when the effect of gender is controlled, is statistically significant, and that 20% of the criteria can be explained based on it. The variable belief in an unjust world, which is also the best predictor of hostile sexism, was singled out as a statistically significant predictor. Another statistically significant predictors are gender, emotionality, extraversion and openness to experience.

Discussion

The aim of this research was to examine the relationship between belief in an unjust world and personality traits, on the one side, and ambivalent sexism on the other side.

Before testing the main hypothesis, we examined whether there were gender differences in term of ambivalent sexism. The results showed that there is statistically significant difference between genders on both dimensions on ambivalent sexism scale and that men tend to have higher scores on hostile, as well as on benevolent sexism subscale. The explanation for these results given by Dovidio, Glick and Rudman (Dovidio, Glick & Rudman, 2008) is that traditional ideals can influence the increase of inequality. According to them, it is up to the man to take the initiative, while the woman needs to be compliant and modest to please the man. Also, these results can be explained by traditional social roles to which men are attributed more power and higher status in society. On the other side, the emergence of benevolent sexism in men can be under the influence of the belief that women are the weaker gender who need protection (Leaper & Robnett, 2013).

Examination of the main hypothesis indicate that both subscales of ambivalent sexism can be predicted by belief in an unjust world and personality traits covered by HEXACO model, when gender influence is controlled. The results showed that hostile sexism can be predicted by model that include belief in an unjust world and personality trait openness to experience. While, benevolent sexism can be predicted by model which include belief in an unjust world, extraversion and openness to experience.

The research problem is formulated on the basis of previous researches that included ambivalent sexism and belief in an (un)just world as predictors of other constructs, as victim blaming and domestic violence (Dielhl, et al., 2016; Sakalh-Ugurlu, et al., 2007; Stromwall & Pedersen, 2013; Valor-Segura, et al., 2011). However, their analysis included only a correlation study between them. These authors (Sakalh-Ugurlu, et al., 2007; Valor-Segura, et al., 2011) report about positive correlation between belief in an unjust world and ambivalent sexism. Explanation of their relationship, in predicting of victim blaming, can be seen in system-justifying attitudes which are basis of both belief in an unjust word and sexist attitudes (Sakalh- Ugurlu, et al., 2007). Precisely, individua who endorse hostile sexism are more likely to believe that women act as "sexual teases", while people who endorse benevolent sexism are more likely to dislike women who are not living up to benevolently sexist ideals. Moreover, individuals who strongly believe in a just world are prone to victim blaming in order to preserve their belief in justice. Correlation of this construct can be also seen from the point of view that sexism as ideology of gender relationships is a specific manifestation of a broader ideology of injustice of the world (Valor-Segura, et al., 2011).

The model used to predict hostile sexism, as well as benevolent sexism, also included personality trait openness to experience. Its contribution to the predictive model can be explained by definition of this personality trait. Openness to experience influences acceptance of others, of ideals and models (Vick, 2014), therefore people with high scores on this scale are less likely to discriminate others. On the other hand, people low in openness tend to value clear, unambiguous (and potentially inflexible) moral prescripts and rules (Sibely, Harding, Perry, Asbrock & Duckitt, 2010), as it is seen in traditional view on gender roles. Some authors (Ekehammar & Akrami, 2007) point out that openness is the strongest predictor of prejudice, which includes sexism. Openness includes components as nonconformity, unconventionality and it relates positively to liberalism, which could imply a negative relationship between openness and any form of prejudice.

Extraversion also stood out as a statistically significant predictor of benevolent sexism. Vick's (2014) explanation of these results is that people who are more assertive in their decision-making and beliefs would potentially rate higher on sexism. Duo to positive tone of benevolent sexism, they could respond to such questions in a more upfront manner than those who are less sociable. Similar results are reported by the other authors (Ekehammar & Akrami 2007), who believe that friendliness, attachment to others and experiencing positive emotions, as aspects of extraversion, contribute to the extraversion-prejudice relationship.

Conclusion

Theoretical goal of this research is further understanding relationship between personality with its traits, beliefs and values, at one side, and discriminatory attitudes, on the other side. These attitudes often determine people's behavior toward each other, attributing social roles, and limiting opportunities within a particular social group, and even discrimination. Also, the results of this research can potentially lead to paving the way to achieving a practical goal, ie. further development towards gender equality, as well as other social categories.

The main contribution of this research is the adaptation of the scale of ambivalent sexism in the Serbian language, as well as checking its applicability in our environment. The contribution of research is also reflected in linking belief in an unjust world and ambivalent sexism at a higher level, since previous research has examined only their correlation.

As broader implications of the results of this research, we believe that there is a need for changes in the upbringing of children in order to reduce discrimination and develop a picture of the world as supportive one in which they can realize their potential without fear of consequences of belonging to certain groups. What is common to the development of these beliefs and values is their root in the earliest interactions that children have with other people, which we can use to achieve this goal.

Further research could focus on gathering a more representative sample, with the aim of examining the differences between men and women in terms of the belief in unjust world and ambivalent sexism, as well as the use of other personality inventories to examine the relationship of these constructs.

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ATTITUDES TOWARDS IMMIGRANTS IN THE LIGHT OF EMPATHY AND AUTHORITARIAN WORLD VIEW[16]

Abstract

The main aim of this study was to provide a better understanding of attitudes of citizens of the Republic of Serbia towards immigrants, but also to examine the role that empathy and authoritarian worldview could have in forming specific attitudes towards immigrants. A total of 322 participants, aged 18 to 54 ($M = 23.54$, $SD = 5.94$), mainly female ($N = 253$) were included in this research. The data was obtained using The Scale of Attitudes towards Asylum Seekers (Župarić-Iljić & Gregurović, 2013), Interpersonal Reactivity Index (Davis, 1983), and Authoritarian Worldview Scale 2 (Bojanović, 2004). The results have shown that perception of social threat could be predicted by perspective taking ($\beta = -.17$, $p = .00$), fantasy ($\beta = -.17$, $p = .00$), and authoritarian worldview ($\beta = .38$, $p = .00$), ($F = 21.76$, $R = .51$, $R^2 = .26$, $p = .00$). When it comes to the perception of cultural threat significant predictors were fantasy ($\beta = -.15$, $p = .01$), personal distress ($\beta = -.12$, $p = .04$), and authoritarian worldview ($\beta = .33$, $p = .00$) ($F = 10.85$, $R = .38$, $R^2 = .15$, $p = .00$). Authoritarian worldview has shown to be a significant predictor ($\beta = .24$, $p = .00$) of perception of health-economic threat ($R = .27$, $R^2 = .07$, $F = 4.86$, $p = .00$). The results are discussed in accordance with previous findings and theory. Practical implications are provided.

Key words: attitudes towards immigrants, empathy, authoritarian worldview, Republic of Serbia

Introduction

Serbia was one of many countries that was dealing with the European migrant crisis that began in 2015. According to the Ministry of Internal Affairs of the Republic of Serbia, at the beginning of the crisis, 1000 to 4000 immigrants would pass through Serbia daily, whereas at one point, there were 70000 of them in the country (Simović, 2017), while approximately 800,000 people crossed the

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territory of Serbia in this period (FRONTEX, 2016; as cited in Petrović & Pešić, 2017). Unlike the countries of the European Union, the countries of Southeast Europe have so far not had the experience of accepting a larger number of immigrants from the Middle East and Africa, which creates new challenges in terms of integration of this population, state Petrović & Pešić (2017).

When it comes to attitudes towards immigrants and the possibilities of their integration, only few research has been conducted in our and neighboring countries providing certain insights. In a qualitative research conducted in Serbia (Vuletić & Pešić, 2017) it was shown that attitudes towards immigrants differ in the north and south part of the country, with a cold and rational attitude dominating in the north. When it comes to the south there is a greater degree of empathy, the suffering of homeless people is emphasized, but so are cultural differences e.g., religion. However, when it comes to the possibility of integration, resistance exists in both northern and southern parts of the country. Similar results were obtained in a study done by Petrović and Pešić (2017), as well as in Croatia. In a research that Župarić-Iljić and Gregurović (2013) conducted in Croatia it was shown that students perceive the presence of immigrants as social, cultural, and health-economical threats, which was confirmed in some other research (Kalebić Maglica, Švegar, & Jovković, 2018). In which way could such results be interpreted?

Namely, Župarić-Iljič and Gregurović (2013) state that in the search for protection and asylum, immigrants are often suspected of certain negativities in society in the eyes of the local population. Some parts of society can experience the kind of hostility made up of a complex set of attitudes and negative emotions towards immigrants. The perceived threat manifests itself as fear of losing social identity, national culture and national unity, fear of losing economic stability and employment of the local population, fear of crime and deviance, fear of disease and epidemic, fear of terrorism, etc. In line with that, it could be said that the perception of threat could be on a social, cultural and/or health-economic level (Župarić-Iljić & Gregurović, 2013). Undoubtedly, an important role in attitudes towards immigrants also have some individual factors, e.g., authoritarianism (Kalebić Maglica et al., 2018; Oyamot, Fisher, Deason, & Borgida, 2012), gender (Kalebić Maglica et al., 2018), religiosity (Župarić-Iljić & Gregurović, 2013), while empathy has been proven to be a protective factor in forming negative attitudes towards asylum seekers (Mikilkowska, 2017; 2018).

Having in mind that only a few qualitative studies have been conducted in our country when it comes to attitudes towards immigrants, a need was recognized for better understanding of whether immigrants are perceived as social, cultural, and health-economical threat in citizens of Republic of Serbia, as well as the role that some personal traits, such as empathy and authoritarian worldview, could have in forming attitudes towards immigrants.

Empathy was initially seen as "the ability to understand another person's emotion and to perceive reality in the way another person does" (Stojiljković, 2009) emphasizing the cognitive aspect. From the psychoanalytic and social

psychology point of view, empathy was viewed as a purely affective phenomenon and was presented as a phenomenon of "emotional contagion". Today's definitions of empathy are characterized by an integrative approach and perception of empathy as a cognitive-affective phenomenon (Stojiljković, 2009). One of the well known integrative models of empathy was given by Mark H. Davis. According to Davis (1983) empathy could be defined as a reactivity to the experiences of another person, which implies the involvement of the cognitive and affective components. The affective component, referred to as empathic concern or sympathy, pertains to the vicarious experience of emotions, consistent with those of the observed person, which often results in feelings of concern and compassion for another (Miklikowska, 2018). The cognitive component, or perspective taking, refers to the understanding of others' internal states. According to Miklikowska (2018) perspective taking influences processes involved in the representations of outgroup members, it enables putting oneself in the shoes of the stigmatized outgroup members, which increases the salience of injustice and arouses sympathetic feelings for the outgroup. On the other hand, affective dimension, more precisely empathic concern enables valuing others' well-being, sensitizes to their needs and negative experiences, and motivates to alleviate their distress.

In previous research, empathy as a trait has been linked to adults' prejudice (Bergh & Akrami, 2016; Miklikowska, 2018). More precisely, although both empathic concern and perspective taking were correlated with anti-immigrant attitudes (Miklikowska, 2018), empathic concern did not directly predict changes in anti-immigrant attitudes. It predicted them indirectly, via its effects on perspective taking. Similar results were found in research done by Gutsell & Inzlicht (2012), showing that prejudiced adults exhibit less empathic-concerning states than do non-prejudiced adults.

The concept of authoritarian personality was described by Erich Fromm (1969; as cited in Bojanović, 2004), referring to people who are submissive to the authority of some person or institution that has great power over them. Fromm believes that the main characteristics of an authoritarian personality is a pessimistic view of human nature. Such a view is characterized by a tendency towards hierarchy, striving for power, hostility, hatred, prejudice, perception of goodness as weakness, etc. (Stevović, 2004; as cited in Đigić, 2013). Adorno (1950; as cited in Grahek, 2008) conducted one of the first researches on authoritarianism and defined this concept using nine characteristics of authoritarian personality: conventionalism, authoritarian submissiveness, aggression, antiintraceptiveness, respect for the government and a positive attitude towards it, destructiveness and cynicism, frequent use of projection as a defense mechanism, rigid thinking and existence of superstitions and stereotypes, and interest in sexual perversions. If an authoritarian worldview is seen as a cognitive phenomenon, it represents a unique system of attitudes, beliefs, and values. As such, it has a dynamic character, i.e. the power to incite behaviors that are consistent with it. It is believed that because of this, people with this worldview tend to try to impose their views on

others, and criticize and condemn any attitude that is not in line with their personal one (Đigić, 2013). In line with that, in the research done by Kalebić Maglica et al. (2018) it was shown that authoritarian individuals, due to their tendency to view the world as a dangerous place, adhere to conventional values, obey authority, and have negative attitudes towards individuals who violate conventional norms perceive immigrants as social, cultural, and health-economic threats. Accordingly, the authors further state that if someone consider their own culture as the best and as a starting point for evaluation of other cultures, each arrival of immigrants of a different culture disrupts the existing culture with a foreign and "less valuable" culture, which also threatens the homogeneity of their own group. Therefore, it is not surprising that in their research, authoritarian worldview was proven to be the strongest predictor of threat perception. Similar results are obtained and in some oder studies (Oyamot et al., 2012).

Having in mind previously said, the main aim of this study is to provide a better understanding of attitudes of citizens of the Republic of Serbia towards immigrants, as well as to examine the role that empathy and authoritarian worldview could have in forming specific attitudes towards immigrants.

Method

Sample

The sample consisted of 322 subjects, aged 18 to 54 ($M = 23.54$, $SD = 5.94$). The majority of the sample (73%, $N = 253$) was female. The research was done online through a Google Form. The participants were informed about the subject matter of the research, as well as the participation being anonymous. They gave written agreement of consent to take part in this study. The research was conducted during April and May, 2020.

Instruments

Attitude towards immigrants was measured with The Scale of Attitudes towards Asylum Seekers (Župarić-Iljić & Gregurović, 2013). The scale was adapted to Serbian language for the purpose of this research. It consists of 16 items on a 5-point scale with the points meaning the following: 1 – I completely disagree to 5 – I completely agree. The scale consists of 3 subscales: *perception of social threat* - reflects the so-called "NIMBY - not in my backyard" (Župarić-Iljić, Gregurović, 2013, p. 45) rhetoric, where the attitude towards the object is accepting as long as there is a social distance from it (item example: "I would help an immigrant if I had the opportunity."; α = .91); *perception of cultural threat* - refers to the need for non-interference between immigrants' and Serbian culture (item example: "The immigrants' culture should not be mixed with Serbian culture."; α = .60); *perception of health-economic threat* - the perception of health threat refers to the fear due to hygienic and epidemiological conditions in asylums, whilst the economic threat

refers to the fear of economic deprivation and "stealing" of jobs (item example: "Immigrants are not a threat to the economic progress of Serbia."; α = .74).

Empathy was measured with the Interpersonal Reactivity Index scale (IRI; Davis, 1983). The scale consists of 4 subscales, with each subscale having 7 items on a 5-point scale (28 items in total). The subscales are: *perspective taking* - reflects the ability to take a flexible stand in social interactions, tendency to spontaneously accept the psychological point of view of another person (item example: "When I'm upset at someone, I usually try to "put myself in his shoes" for a while."; α = .71); *fantasy* refers to a person's tendency to get into the feelings and actions of fictional personalities (item example: "After seeing a play or movie, I have felt as though I were one of the characters."; α = .82); *empathic concern* measures individual differences in an individual's emotional response to perceived emotional manifestations of others (item example: "I am often quite touched by things that I see happen."; α = .74); *personal distress* - a person may experience a feeling of fear, discomfort only by perceiving the stressful situation or bad living conditions of other person/people (item example: "Being in a tense emotional situation scares me."; α = .77).

Authoritarian worldview was measured using the Authoritarian Worldview Scale 2 (AP2; Bojanović, 2004), which consists of 26 items with possible answers between 1 – completely untrue to 4 – completely true (item example: "I don't like people who stick out too much"; α = .82).

Results

The results of descriptive statistics will be presented first (Table 1), and then the focus will be on correlation and regression analysis.

Table 1
Descriptive statistic of variables

Variables	M	SD	Min	Max	Sk	Ku
Authoritarian worldview	2.24	0.39	1.31	3.38	0.07	-0.19
Perspective taking	3.70	0.64	1.14	5.00	-0.42	0.55
Fantasy	3.82	0.80	1.29	5.00	-0.55	-0.19
Emphatic concearn	3.46	0.73	1.43	5.00	-0.39	-0.24
Personal distress	3.02	0.80	1.00	4.71	-0.09	-0.55
Perception of social threat	2.32	0.96	1.00	5.00	0.69	-0.05
Perception of cultural threat	2.19	0.74	1.00	5.00	0.66	0.34
Perception of health-economic threat	3.28	1.00	1.00	5.00	-0.27	-0.14

In Table 2 correlations between the subscales of attitude towards immigrants, and subscales of empathy and authoritarian worldview are presented.

Table 2

Correlation between the subscales of attitude towards immigrants, and subscales of empathy and authoritarian worldview (Pearson correlation analysis)

Variables	Perspective taking	Fantasy	Empathic concern	Personal distress	Authoritarian worldview
Perception of social threat	-.30**	-.24**	-.20**	-.01	.39**
Perception of cultural threat	-.15**	-.17**	-.13*	-.08	.31**
Perception of health-economic threat	-.06	-.09	-.12*	-.00	.23**
Perspective taking	1	.31**	.32**	-.015	-.14**
Fantasy	/	1	.47**	.21**	.05
Empathic concern	/	/	1	.40**	.00
Personal distress	/	/	/	1	.21**

Note. *Correlation is significant at the .05 level; **correlation is significant at the .01 level.

According to Table 2 it can be seen that all subscales of attitudes towards immigrants are positively correlated with authoritarian worldview, whereby authoritarian worldview is in moderate correlation with both perception of social and cultural threat, and in weak correlation with perception of health-economic threat.

When it comes to empathy, empathic concern is the only subscale of empathy that correlates with all subscales of attitudes towards immigrants, and that correlation is weak and negative. Subscales of perspective taking and fantasy are in negative and weak correlation with both perception of social threat, and perception of cultural threat.

Table 3

Multiple regression analysis – empathy and authoritarian worldview as predictors of perception of social threat (Multiple regression analysis - method Enter)

Predictor variables	β	p	Model summary
Perspective taking	-.17	.00	$R= .51$
Fantasy	-.17	.00	$R^2= .26$
Empathic concern	-.05	.37	
Personal distress	-.04	.50	$F = 21.76$
Authoritarian worldview	.38	.00	$p= .00$

According to Table 3, it can be seen that the regression model is statistically significant, explaining 26% of variance of perception of social threat. It can be noticed that the authoritarian worldview has the largest contribution in predicting the perception of social threat. Perspective taking and fantasy were also shown to be statistically significant predictors.

Table 4

Multiple regression analysis – empathy and authoritarian worldview as predictors of perception of cultural threat (Multiple regression analysis - method Enter)

Predictor variables	β	p	Model summary
Perspective taking	-.06	.28	$R= .38$
Fantasy	-.15	.01	$R^2= .15$
Empathic concern	-.00	.99	
Personal distress	-.12	.04	$F= 10.85$
Authoritarian worldview	.33	.00	$p= .00$

The results show that the regression model is statistically significant, explaining 15% of variance of perception of cultural threat (Table 4). It can be noticed that the significant predictors are authoritarian worldview, perspective taking and fantasy.

Table 5

Multiple regression analysis – empathy and authoritarian worldview as predictors of perception of health-economic threat (Multiple regression analysis - method Enter)

Predictor variables	β	p	Model summary
Perspective taking	.03	.65	$R= .27$
Fantasy	-.07	.28	$R^2= .07$
Empathic concern	-.10	.14	
Personal distress	.00	.94	$F= 4.86$
Authoritarian worldview	.24	.00	$p= .00$

According to Table 5, it can be seen that the regression model is statistically significant, explaining 7% of variance of perception of health-economic threat, and authoritarian worldview is the only significant predictor.

Discussion

The main aim of this study was to provide better understanding of attitudes of citizens of the Republic of Serbia towards immigrants, as well as to examine the role that empathy and authoritarian worldview could have in forming specific attitudes towards immigrants.

In line with previous findings (Kalebić Maglica et al., 2018; Mikilkowska, 2017; 2018; Oyamot et al., 2012) results of our research show that both empathy and authoritarian worldview are not only correlated with, but also represent significant predictors of attitudes towards immigrants. More precisely, both perception of social threat and perception of cultural threat are positively correlated with perspective taking, fantasy, empathic concern, but in a negative correlation with authoritarian worldview. On the other hand, perception of health-economic threat is correlated positively with empathic concern and negatively with authoritarian worldview. In accordance with that, we could say that participants with a higher level of empathy are more likely to have a more positive attitude towards immigrants, while participants with a higher manifestation of the authoritarian worldview are more likely to have a negative attitude towards immigrants, confirming results of previous research.

Summing previously stated it can be noticed that authoritarian worldview is shown as a significant predictor of every perception of threat when it comes to immigrants. Considering that the authoritarian worldview implies conservatism, as well as difficulty accepting changes and differences in general (Bojanović, 2004), these results are expected. In this particular context, this would be manifested as a non-acceptance of a people that has quite different characteristics from people of the country immigrants are located in, and a country whose citizens were our participants. As Kalebić Maglica et al. (2018) stated, authoritarian individuals, due to their tendency to view the world as a dangerous place, adhere to conventional values, obey authority, and have negative attitudes towards individuals who violate conventional norms, also perceive immigrants as social, cultural, and health-economic threats.

On the other hand, empathy, primarily perspective taking, fantasy, and personal distress are shown as, perhaps we could say, a buffer against negative attitudes towards immigrants. These results indicate that compassion and understanding of human suffering are significant factors in perception and acceptance of others regardless of cultural differences. The results are in line with the previous findings (Bergh & Akrami, 2016; Gutsell & Inzlicht, 2012; Miklikowska, 2018). When it comes to dimensions of empathy, the obtained results have shown

that perspective taking is a significant predictor of attitudes towards immigrants, while the empathic concern is significantly correlated, which is in line with research done by Miklikowska (2018). Still, since the cited author did not include dimensions of fantasy and personal distress in her research, we are limited when it comes to comparing our results in more detail.

It is also important to look at the percent of variance of the criterion variable that is explained by the model. Namely, the model which consisted of dimensions of empathy and authoritarian worldview accounted for 26% of perception of social threat, 15% for perception of cultural threat, and only 7% for health-economic threat. Although empathy and authoritarian worldview were shown as significant predictors, it seems that a large percent of attitudes towards immigrants could also be explained by some other variables, e.g. personality traits, religiosity, experience with immigrants… In line with that, one of the recommendations for further research would be to include some other possible predictors of attitudes towards immigrants in order to better understand factors that are correlated with them. Another suggestion for future research could be to include samples that are more uniform in terms of variables such as age and gender. Perhaps it could be of importance to conduct research that would examine the attitudes of children towards child immigrants, or the attitudes of participants in late adulthood.

Having in mind that only little research was done when it comes to attitudes towards immigrants in our and neighboring countries, and that some of them are qualitative in nature, we believe that our research provides significant findings. In line with the results of previous findings (Miklikowska, 2017, 2018) as well as ours, it seems that preventive strategies aimed at reducing negative attitudes towards immigrants should focus on strengthening the empathic capacity of individuals through e.g. perspective taking and role playing. Further, relying on the results that a large percent of variance was not explained by variables included in the study, another possible direction for consideration could be paying more attention to environmental factors that can be influenced through public policy in order to enhance integration of immigrants. Namely, Pagotto, Voci and Maculan (2010) stated that intergroup contact between Italian hospital workers and foreign patients was effective in reducing prejudice towards immigrants in general. Similar findings could be found in the review paper done by Berg (2020) indicating that intergroup contact between native-born citizens and immigrants is associated with holding prosocial attitudes towards immigrants and immigration policy. Further, Vallejo-Martin, Canto, Garcia and Novas (2021) emphasize that in order to provide peaceful coexistence and reduce negative attitudes towards minority groups, including immigrants, it is a priority to design public policies that support the inclusion and integration of minority groups with the goal of building societies that respect human rights.

Conclusion

According to the obtained results we can conclude that both authoritarian worldview and empathy have an important role when it comes to attitudes towards immigrants, but in different directions. On one hand, authoritarian worldview contributes to forming more negative attitudes towards immigrants, while the dimensions of empathy, primarily fantasy, perspective taking, and personal distress were shown to be protective factors. Still, having in mind that a large percentage of criteria was not explained by included predictors, we could say that although authoritarian worldview and empathy are significant predictors of attitudes towards immigrants, further research on this topic is needed.

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ORGANIZATIONAL PSYCHOLOGY

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IS CAREER REALLY PLANNED?

Abstract

The current work context implies the challenges of a globalized world, where the successful adaptation to uncertainty and instability can involve situations that result from chance, as well as actions voluntarily taken in order to transform random events into opportunities. The objective of this work is exploratory, framed by the model of planned happenstance, analyzing the role of chance and initiative in the career. The participants were 20 adults, aged between 30 and 35 years, with more than 5 years of work experience and with higher education. Semi-structured interviews were carried out and submitted to a content analysis with NVIVO software. Findings indicate a high frequency of "chances" resulting from informal contacts with friends, former colleagues or employers but also from unpleasant and external events such as unemployment or the extinction of the previous job. Participants reported personal initiatives that resulted in career opportunities as the scheduling of meetings with acquaintances, making visible the willingness to change and the availability to make the initial objectives more flexible, participating in work or leisure activities not directly related with the desired functions. The analysis of the collected data highlights the role of chance and of the initiative of the individual in the construction of his career, as predicted in the Krumboltz model.

Key words: Planned Happenstance; Career; Initiative; Unplanned events

Introduction

With globalization and the fourth industrial revolution (Hirschi, 2018), the contextual factors over which the individual has no control has increased, implying that the number of career transitions that an individual is going through is significantly higher in this generation than in previous generations (Chudzikowski, 2012). In this sense, the process of adapting to the present context involves situations that result from mere chance, flexibility of career goals (Van Esbroeck, 2008), and the performance of actions that individuals can voluntarily undertake to create job opportunities (Krumboltz, Foley, & Cotter, 2013).

Although without much impact into the career counseling theory or practice (Patton & McMahon, 2014), the planned happenstance model (Krumboltz, 2009; Krumboltz, Foley, & Cotter, 2013; Krumboltz & Levin, 2004, 2010) can gain new prominence in the current context of total unpredictability. In fact, for Krumboltz,

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random events and the actions of individuals in the sense of building career opportunities are present in the construction of individual careers. These authors argue that the number and nature of employment and training opportunities are very often the result of environmental events that are generally beyond the control of the individual (Krumboltz, 2009; Krumboltz, Foley, & Cotter, 2013; Krumboltz & Levin, 2004, 2010). In fact, some studies report the role of chance or unplanned events in career decisions (e.g., Bright, Pryor, & Harpmam, 2005; Hirschi, 2009; Kindsiko & Baruch, 2019; Scott, & Hatalla, 1990).

Understanding the role of chance and/or uncertainty in career development and the perception of these "random" events as learning opportunities that occur from the moment of birth and continue in a pattern that alternates between the predictable and planned and the unpredictable and unexpected (Capuzzi & Gross, 2017; Patton & McMahon, 2014) can be a key element in career counseling processes. For this reason, for Krumboltz (2009), more than planning, it is important to be available for "the chances" that become opportunities.

The individual can thus integrate unplanned events in own career and understand the importance of developing and applying his skills of curiosity, flexibility, optimism, persistence, initiative and the ability to take some risks (Krumboltz, Mitchell, & Gelatt, 2011).

The aim of this work is exploratory, analyzing the role of chance and the actions taken by oneself in the careers of individuals.

Research questions

The following questions are addressed in this paper:
In the career path of graduated adults, was there a contribution of incidental or unplanned events?
In the career path of graduated adults, was there a contribution of own initiatives to create opportunities that were favorable for career progress?

Method

Participants

The participants were 20 adults, 10 men (50%) and 10 women (50%), graduates, aged between 30 and 35 years old with more than 5 years of work experience and with higher education. 4 with degrees in Pharmacy, 4 in Psychology, 6 in Management, 2 in Economics and 4 in Chemical Engineering.

Procedure

Data collection was carried out according to international research ethics, namely informed consent, voluntary participation and the use of the data

collected only for research purposes. The participants were informed about the goals of the research prior to give their consent and all of them confirmed their voluntary informed consent to participate in the study. The interviews were conducted face-to-face, in Lisbon, in 2019. Demographic data were collected. The name of the participant was omitted.

These interviews were semi-structured and were constituted by two open questions:

1-Which incidental or unplanned events contributed most to your career path?

2-What initiatives of yours have created career opportunities that you have taken advantage of in your career path?

Data analysis

To analyse the qualitative data, content analysis was used since it permits to make inferences from specific characteristics of a message, using systematic procedures and objective description of the message contents (Bardin 1993; Zhang & Wildemuth, 2009). The semantic criterion was chosen and a deductive and inductive approach was combined in the analysis of qualitative data. After transcribing and reading all the interviews, this content analysis was carried out, with the aid of the NVIVO software, in order to identify themes and categories that represent the content of the interviews emerging from the interview script itself.

The content analysis (Bardin 1993; Zhang & Wildemuth, 2009) carried out on the participants' interviews allowed the extraction of 2 major categories that are broken down into 8 subcategories each, i.e., 16 subcategories in total that will be presented below. After the 15th interview, saturation was verified, and new categories did not emerge.

To test the reliability of this system of categories and subcategories, it was tried by two judges who independently analyzed and categorized 10% of the registration units, taken from 4 interviews. After this analysis, the categorizations performed by both were analyzed, permitting to conclude that the consistency between the judges was 0.80, which means that they used the same categories in 80% of registration units.

Results

Tables 1 and 2 summarize the categories and subcategories found from the content analysis to the interviews, in response to question 1 - Which incidental or unplanned events contributed most to your career path?

Table 1. *Category 1 and subcategories emerging from content analysis*

Category 1	Fortuitous or unplanned events with an impact on career
Subcategories	1. Casual meeting with friends
	2. Casual meeting with people I had worked with
	3 .Unexpected unemployment
	4. Dissatisfaction with the functions / company / management
	5. Invitation from someone I have worked with
	6. Find an ad related to my area of studies
	7. Change of spouse's job
	8. Temporary jobs / functions

Table 2. *Category 1 subcategories and indicators. Frequencies*

Subcategories	Record units	F
Casual meeting with friends	Conversations with colleagues at a symposium " "Conversations with friends, where opportunities are perceived" "Reunion with a longtime friend" "Conversation with friends and colleagues" "Talk to friends from college"	8
Casual meeting with people I had worked with	"I happened to meet the president of a company where I had previously worked"	1
Unexpected unemployment	"They didn't renew my contract" "The company extinguished the job""Bankruptcy of (…)" "The fact of being unemployed" "Not having a job with my Bachelor's degree"	6
Dissatisfaction with the functions / company / management	"I was tired of my previous job" "Dissatisfaction with the salary"	3
Invitation from someone I have worked with	"Not losing contact with former employers has given methe opportunity to have my CV running by several people and being contacted by many of them" "I was recommended by one teacher" "It was a colleague who remembered that I would probably be the person indicated and gave my contact to the Manager " "To be recommended to a place by an old boss"	4
Find an ad related to my area of studies	"Casual internet search" "I saw it on the internet, when I wasn't even looking for anything"	2
Change of spouse's job	"My husband's job change"	1
Temporary jobs / functions	"Replacement of (…) during license" "My boss went to another company and her place was vacant" "I accepted a position for a limited time and then ended up staying" "Demonstration of talent and effort in a specific position in a temporary job"	4

In relation to the first question that was asked to the interviewees (Which incidental or unplanned events contributed most to your career path?) it appears that the subcategories that appear most frequently (13) are related to the importance of informal networks: conversations, casual encounters with friends or former colleagues, invitations from friends or people with whom individuals had already worked are many of these fortuitous events.

However, the situation of unemployment also arises with high frequency (6), revealing that the accidents that act as career determinants are often a reactive response to an unpleasant event external to the individual - unemployment, extinction of job position, company bankruptcy, etc. The acceptance of temporary jobs or the temporary replacement of colleagues has also an important role in creating opportunities with a positive impact on the career and is mentioned by 4 participants.

Furthermore, considering the content analysis of the data collected with the second question (What initiatives of yours have created career opportunities that you have taken advantage of in your career path?) the category 2 emerges - own initiatives that contributed to create career opportunities and 8 subcategories, presented in Tables 3 and 4.

Table 3. *Category 2 and subcategories emerging from content analysis*

Category 2	Own initiatives that contributed to create career opportunities
Subcategories	1. Schedule meetings with people I know
	2. Sending spontaneous applications
	3. Communicate to friends / getting people know the desire to change
	4. Going to interviews even without having much interest in the job
	5. Habit to always consult the ads
	6. Be available for geographical or job changes
	7. Social networks
	8. Participate in associations / actions / projects

Table 4. *Category 2 subcategories and indicators. Frequencies*

Subcategories	Record units	F
Schedule meetings with people I know	"Calling people" "A lunch I booked with my former mentor at the first company" "schedule meetings" "Call a colleague" "Didn't lose contact with former employers"	6
Sending spontaneous applications	"I heard a lecture about a company and I was interested. I personally went to speak with the speaker and try to know how I should do so I could apply to this company" "I remade my cv and sent it to several laboratories" "Spontaneous submission of resumes" "Spontaneous application"	4

Communicate to friends / getting people to know the desire to change	"Having informed a friend that I was available" "Talk to friends from college"	2
Go to interviews even without having much interest in the job	"I decided to go to the (…) interview with little conviction that it would be my decision to move so far" "To risk going to an interview, even though the job didn't seem ideal" "Going to an interview for a job that was not what you wanted" "At the beginning it was not an attractive project, but I took a chance	4
Habit to always consult the ads	"See job ads even when I wasn´t looking for a job" "Casual internet search"	2
Be available for geographical or job changes	"Being available to change my residence to in the Algarve" "Availability to travel, namely to Angola" "Replacement of (…) during birth license" "I accepted a position for a limited time and then ended up staying" "Demonstration of talent and effort in a certain position in a company where I knew from the start that I would not stay for long"	5
Social networks	"Linkedin"	2
Participate in associations / actions / projects	"I volunteered to help with the projects of some friends" "I developed knowledge of other languages "	1

The analysis of the responses reveals that most of the initiatives that translate into career opportunities result from the creation of meetings / contacts with known people and from making public the availability and interest in changing. Significant is the fact that personal contacts are more prominent than social networks, although these also reveal importance for these unforeseen career changes. Proactivity, in various ways – initiating personal contacts or sending spontaneous applications - appears as a major factor in the definition of career paths.

The data collected also highlights the importance of the ability to be flexible in the face of non-ideal situations "I went to an interview, even without having a strong belief that I could get the job", "My plans are flexible" and of accepting changes, being available for travel or for geographical changes. The acquisition of new skills - mastery of new languages - is also noteworthy.

Discussion

The analysis of the collected data highlights the perception of chance events and of own initiatives as influential factors in career decision making. These findings are consistent with earlier work revealing that individuals can benefit from chance or unexpected personal events by recognizing them, and acting according to the expected outcomes (e.g. Bright, Pryor, & Harpmam, 2005; Hirschi, 2009; Kindsiko & Baruch, 2019; Scott & Hatalla, 1990). It also makes clear

the importance of establishing and maintaining formal and informal contacts, at work and outside work, since it is often from this network that opportunities arise. In addition, it emphasizes the need to flexibilize objectives, attitudes and behaviors in order to more easily adapt to changing contexts.

Therefore, considering the challenges and unpredictability of this era in which the only predictable factor is the change itself, workers will have to appeal to their adaptability skills (Super, Savickas, & Super, 1996), will have to adapt and flexibilize their career goals to cope with the real context (Hirschi, Herrmann, & Keller, 2015; Hirschi & Vondracek, 2009) and will have to appeal some fundamental skills to transform events in opportunities.

In this context, the question arises: "What is the role of the career counselor?" Probably more important than helping to make a decision at the moment, will be to build change in clients, helping them to develop work habits and personal qualities that will lead them to create a professional satisfying life in a changing world of work. The promotion of skills to deal with unpredictability and to manage own careers, facilitating adaptability and the abilities to take advantage of unexpected events and create opportunities should be one of the goals of career counseling. According to Mitchell, Levin and Krumboltz (1999), these skills are availability to take risks, persistence, curiosity, flexibility and optimism. As stated by Krumboltz and Chan (2005), career counseling must also include the confrontation with dysfunctional and maladaptive beliefs and help clients to develop beliefs and attitudes that favor proactivity, flexibility and, consequently, employability.

This study is not without limitations since the data are based on self-report of a convenience sample. Relations of the perceived chance events and proactivity with sociodemographic variables as gender, educational level, attributional style or age could be the aim of future studies.

Conclusion

Overall, this study supports the concepts of the planned happenstance model, contributing to reveal that there is a role of chance and initiative of the individual in the construction of professional career. These findings suggest that, despite the diversity of contexts and the occurrence of negative events, the individuals' agency, their skills and proactivity can contribute to a satisfactory career path. Therefore, career counseling goals and techniques must stimulate clients for action (exploration), as this can generate unplanned events that can be seen as opportunities for career advancement.

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DEMOGRAPHIC CHARACTERISTICS AND JOB SATISFACTION OF PRIMARY SCHOOL TEACHERS

Abstract

Satisfied employees are more productive and create a better work atmosphere. The extent to which the teachers are satisfied with their job has a significant impact on pupils' quality of teaching and motivation. Many personal and organizational factors can influence job satisfaction. The aim of this study was to investigate whether there are differences in overall job satisfaction of teachers in primary schools in Bosnia and Herzegovina depending on teachers' demographic characteristics: gender, age, duration of service, position (class teachers/subject teachers), job affection, and marital status. The sample consisted of 907 teachers (80.8% female) from 32 elementary schools, aged 22 to 66 (M = 39.99, SD = 9.23). We used the Overall Job Satisfaction Measure (Brayfield & Rothe, 1951, adapted by Guzina, 1980) and demographic characteristics questionnaire. The analysis of variance and post - hoc test LSD was used for data processing. Statistically, a significant difference has been determined in overall job satisfaction considering gender, service duration, position, job affection, and marital status. Male teachers with 6 to 15 years of service, subject teachers, teachers who are not sure if they like their job, and unmarried teachers are the least satisfied with the job. This study suggests that overall job satisfaction is present in varying degrees in different demographic categories of teachers. It is up to future studies to examine satisfaction with certain aspects of the job in different demographic categories of teachers so that more specific measures can be created to increase job satisfaction for teachers.

Key words: overall job satisfaction, demographic characteristics, teachers

Introduction

Job satisfaction is one of the most studied employees' attitudes (Alotaibi, 2001; Parnell & Crandall, 2003). The reason is to be found in the belief that a satisfied employee is a productive employee and that the organisation's success cannot be achieved with dissatisfied employees. Job satisfaction is a cognitive, affective and evaluative response of an individual to his/her job (Grinberg, 1998). Therefore,

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it is a very complex attitude that includes certain assumptions and beliefs of an individual about his/her job, feelings towards the job and evaluation of his/her job. Job satisfaction can be studied in two ways: a holistic or facets approach (Wright, 2006). A holistic approach treats job satisfaction as a one-dimensional construct, i.e. one central feeling related to a job resulting from work experience (Wright, 2006). Facets approach to job satisfaction defines job satisfaction as a multi-dimensional construct, i.e. from the angle of work situation, and includes examining relevant work aspects, which contribute to the total job satisfaction. These aspects imply salary, management style, relationships with associates, advancement opportunities, and similar (Spector, 1985; Wright, 2006). According to this approach, job satisfaction presents satisfaction with certain aspects of the job, which emerges from comparing the current state of the job aspect and the reference framework a person relates to this aspect (Spector, 1985). Based on the above mentioned, we can say that teacher job satisfaction is the attitude of teachers towards the aspects of their work role, which arose as a result of the relationship between their work competencies, expectations and requirements of the work role on the one hand, and psychosocial conditions in which this role is realized on the other hand (Majstorović, Matanović & Gligorijević, 2017). Most studies today use the facets approach to job satisfaction since it provides more detailed and complete insight into the reasons for job (dis)satisfaction (Oshagbemi, 1999).

Job satisfaction is essential for the smooth functioning of each organization, including schools. More satisfied employees are more motivated and productive, less absent from work and less likely to leave a job (Judge, Thoresen, Bono & Patton, 2001; Kohler & Mathieu, 1993; Koys, 2001). Also, satisfied employees create a better working atmosphere and positively impact the contribution of other colleagues (Koys, 2001). The level of job satisfaction is a significant factor for the work and overall well-being of employees. A significant correlation was found between job satisfaction and employees' physical and mental health (e.g., Gechman & Wiener, 1975; Vecchio, 1995). Job dissatisfaction is significantly correlated with the emergence of burnout syndrome, depression and anxiety (e.g., Faragher, Cass, & Cooper, 2005). Studying teachers' job satisfaction is a significant research field since teacher job (dis)satisfaction is reflected not only on teachers but also on the teaching process and the students. Teacher job satisfaction greatly impacts students' motivation and the stability and quality of learning and teaching. Studies that have dealt with the effects of teacher job satisfaction show that greater job satisfaction leads to higher work engagement and efficiency of teachers and the establishment of better working conditions within the school as an organization (e.g., Hoerr, 2013; Ugrinović, Dobrijević, & Boljanović-Đorđević, 2015). In addition to this, the results of existing studies (e.g. Klassen & Chiu, 2010; Shann, 1998) indicate that teachers who are more satisfied with their job are more attached to the school and have no intention leaving their job. Also, the results of existing studies (e.g., Brackett, Palmer, Moses-Kaja, Reies & Salovei, 2010; Skaalvik

& Skaalvik, 2009; Zečević, Mirković & Marinković, 2020) show that teachers who are more satisfied with their job are less prone to burnout. Job satisfaction is essential for the smooth functioning of each organization, including schools. More satisfied employees are more motivated and productive, less absent from work and less likely to leave a job (Judge, Thoresen, Bono & Patton, 2001; Kohler & Mathieu, 1993; Koys, 2001). Also, satisfied employees create a better working atmosphere and positively impact the contribution of other colleagues (Koys, 2001). The level of job satisfaction is a significant factor for the work and overall well-being of employees. A significant correlation was found between job satisfaction and employees' physical and mental health (e.g., Gechman & Wiener, 1975; Vecchio, 1995). Job dissatisfaction is significantly correlated with the emergence of burnout syndrome, depression and anxiety (e.g., Faragher, Cass, & Cooper, 2005). Studying teachers' job satisfaction is a significant research field since teacher job (dis)satisfaction is reflected not only on teachers but also on the teaching process and the students. Teacher job satisfaction greatly impacts students' motivation and the stability and quality of learning and teaching. Studies that have dealt with the effects of teacher job satisfaction show that greater job satisfaction leads to higher work engagement and efficiency of teachers and the establishment of better working conditions within the school as an organization (e.g., Hoerr, 2013; Ugrinović, Dobrijević, & Boljanović-Đorđević, 2015). In addition to this, the results of existing studies (e.g., Klassen & Chiu, 2010; Shann, 1998) indicate that teachers who are more satisfied with their job are more attached to the school and have no intention leaving their job. Also, the results of existing studies (e.g., Brackett, Palmer, Moses-Kaja, Reies & Salovei, 2010; Skaalvik & Skaalvik, 2009; Zečević, Mirković & Marinković, 2020) show that teachers who are more satisfied with their job are less prone to burnout.

The job satisfaction of employees depends on numerous individual factors, such as personality traits, life satisfaction, work experience, age, and other, as well as organizational factors, which include the job itself, reward system, working conditions, co-workers, organizational structure etc. (Franceško & Mirković, 2008; Spector, 1997). When it comes to organizational factors of teachers' job satisfaction, the results of a study performed by Sharma and Jyoti (2006), which was conducted on a sample of elementary school teachers in the USA, show that teachers job satisfaction is mainly affected by salary, perception of school management support, working conditions, available resources and students' behaviour. Another American study, which encompassed a sample of 36.000 teachers in elementary and high schools (Perie & Baker, 1997), showed that good cooperation with parents, school management support, student behaviour, school work atmosphere, and teachers' autonomy are positive predictors of teacher job satisfaction. A study conducted in Great Britain (Oshagbemi, 1999) proved that the factor that had the greatest influence on teachers' job satisfaction is the job itself. The factors that most affected the teacher's job dissatisfaction are salary and (the lack of) possibility of promotion. A job satisfaction of employees depends

on numerous individual factors, such as personality traits, life satisfaction, work experience, age, and other, as well as organizational factors, which include the job itself, reward system, working conditions, co-workers, organizational structure etc. (Franceško & Mirković, 2008; Spector, 1997). When it comes to organizational factors of teachers' job satisfaction, the results of a study performed by Sharma and Jyoti (2006), which was conducted on a sample of elementary school teachers in the USA, show that teachers job satisfaction is mainly affected by salary, perception of school management support, working conditions, available resources and students' behaviour. Another American study, which encompassed a sample of 36.000 teachers in elementary and high schools (Perie & Baker, 1997), showed that good cooperation with parents, school management support, student behaviour, school work atmosphere, and teachers' autonomy are positive predictors of teacher job satisfaction. A study conducted in Great Britain (Oshagbemi, 1999) proved that the factor that had the greatest influence on teachers' job satisfaction is the job itself. The factors that most affected the teacher's job dissatisfaction are salary and (the lack of) possibility of promotion.

Concerning individual factors of teachers' job satisfaction, studying job satisfaction predictors on a sample composed of university professors in Serbia proved that personality traits pleasantness and neuroticism are considered significant predictors of job satisfaction. Professors who are more pleasant are also more satisfied with their job, while more neurotic professors are less satisfied with the job (Matanović, 2009). A slightly larger number of studies dealt with socio-demographic correlates of teacher job satisfaction. Still, the results of those studies are often contradictory. Thus, for example, Paul and Phua (2011) and Sseganga and Garrett (2005) did not determine a significant connection between gender and teacher job satisfaction. However, Bishay (1996), Demato (2001), Dinham and Scott (2000), and Perie and Baker (1997) determined that female teachers were more satisfied with their job. Ohide et al. (2017) believe that a reason for this may be that women are more present in this profession. Similarly, Paul and Phua (2011) and Sseganga and Garrett (2005) did not determine any significant correlation between age, work experience and marital status on one side and teacher job satisfaction on the other, while Cetin (2006), Demato (2001), DeVaney and Chen (2003) and Raisani (1988) determined that teachers with longer work experience (more than 10 years) and married teachers are more satisfied with their job. Such a result can be explained by the fact that older teachers and teachers with longer work experience, even if they showed dissatisfaction with their job in the beginning, will become more satisfied with their job over time due to cognitive dissonance. By staying in a certain job, the individual becomes more efficient in performing the job, which partially leads to greater satisfaction (Franceško & Mirković, 2008). If we talk about the relation between marital status and job satisfaction, the reason for the obtained result can be found in "the spillover effect". Namely, marital status positively impacts overall life satisfaction, which then spills over to job satisfaction (Franceško

& Mirković, 2008). Also, the results of some studies (e.g. Raisani 1988; Demato, 2001) showed that teachers who find their salaries adequate had significantly higher levels of job satisfaction than those who don't. Finally, the results of one study conducted in Croatia (Koludrović, Jukić & Reić Ercegovac, 2009) point out significant differences in job satisfaction between class teachers and subject specialized teachers, whereby class teachers are more satisfied with the job than the subject specialized teachers. The authors believe there are several potential reasons. First, the study curriculum for class teachers provides a better image of the future profession. It prepares them systematically for class teachers' role, which means they have more realistic expectations once they start working. Namely, by choosing the study curriculum class, teachers consciously accept teachers' role, unlike the subject specialized teachers whose study curriculum enables them to work in other jobs/positions related to the subject they specialized for, not just at schools. Second, unlike subject specialized teachers, class teachers are more extensively and thoroughly trained for the teaching job from the beginning of their studies. And third, class teachers have greater flexibility in curriculum, time and space frameworks. Class teachers stay with their students for several years and have more freedom to organize their work time, which enables them to get to know the needs and possibilities of their students better, and thus create an opportunity for self-realization of both teachers and students (Koludrović, Jukić & Reić Ercegovac, 2009).

Since teacher job satisfaction significantly impacts the quality of teaching and student motivation, it is important to increase teacher job satisfaction constantly. Still, the number of studies dealing with teacher job satisfaction in our country is deficient, and interventions aimed at increasing teacher job satisfaction are rarely implemented in practice. To design and implement an intervention that would lead to increased teacher job satisfaction, it is necessary to know which categories of teachers are not satisfied with the job. Therefore, this study aimed to investigate whether there are differences in teachers' overall job satisfaction depending on teachers' demographic characteristics: gender, age, duration of service, position (class teachers/subject teachers), job affection, and marital status. Having in mind the findings of the previous studies (e.g. Bishay, 1996; Cetin, 2006; Demato, 2001; DeVaney & Chen, 2003; Dinham & Scott, 2000; Koludrović, Jukić & Reić Ercegovac, 2009; Raisani, 1988), we expect that female teacher, older teachers, teachers with more years of service, class teachers, teachers who like their job, and married teachers are more satisfied with their job.

Method

Participants and procedure

The sample consisted of 907 teachers (80.8% female) from 32 elementary schools in Bosnia and Herzegovina. There were 46.1% of class teachers and

53.9% of the subject teachers. To be able to compare our results with the results of previous studies of job satisfaction on a sample of teachers, we followed the practice of those studies and divided the sample into five age cohorts: up to 25 years of age (3.4%), 26-35 years (32.7%), 36-45 years (41.2%), 46-55 years (15.2%) and over 56 years (7.4%). In terms of the duration of service, the sample was divided into four cohorts: up to 5 years of service (21.8%), 6-15 years (40.4%), 16-25 years (26.1%) and more than 26 years (11.7%). For the marital status, 69.3% were married and 30.7% were not married.

Data were collected in schools during working hours using a paper-and-pencil format, under the supervision of the researchers. The participants filled out the questionnaires in groups. Participation was anonymous and voluntary.

Instruments

Overall Job Satisfaction Scale (OJS; Brayfield & Rothe, 1951, adapted by Guzina, 1980). The questionnaire consists of 18 items. The participants' responses to the OJS are given on a 5-point Likert type scale from 0 (*Strongly disagree*) to 5 (*Strongly agree*). Higher results on the scale indicate a higher level of overall job satisfaction. For this study, the Cronbach's alpha was .84.

Socio-demographic Characteristics Questionnaire. The questionnaire consisted of seven questions about the following demographic characteristics: gender (male/female), age, duration of service, position (class teachers/subject teachers), job affection (I like my job/I'm not sure if I like my job/I don't like my job), and marital status (married/unmarried).

Data analysis

For data analysis, we used the following statistical procedures: descriptive statistics, t-test for independent samples, Analysis of Variance (ANOVA) and the following post-hoc tests. Data analysis was performed using the statistical software package SPSS for Windows, version 22.0.

Results

Table 1 presents the descriptive statistical measures for the Overall Job Satisfaction Scale. Measures of average and variability, skewness and kurtosis indicate that results of respondents were pushed towards higher values (Tabachnick & Fidell, 2001).

Table 1

Descriptive statistical measures for the Overall Job Satisfaction Scale

	Min	Max	M	SD	Sk	Ku
Job satisfaction	21	90	71.34	8.82	-.79	2.03

The results of the t-test for independent samples have shown significant differences, of moderate intensity, in overall job satisfaction considering the gender of teachers ($t(903) = 3.09$, $p = .002$, $\eta_p^2 = .013$). Female participants show a higher level of job satisfaction ($M = 71.83$, $SD = 8.22$) than men ($M = 69.20$, $SD =10.73$) (Figure 1).

Figure 1. *The relationship between gender and job satisfaction*

The ANOVA results have shown a significant difference, of moderate intensity, in overall job satisfaction considering the duration of service of teachers ($F(3,903) = 3.82$, $p = .010$, $\eta_p^2 = .012$). Applying the Bonferroni correction (p .012) did not change the previously obtained results. Results of LSD post hoc test reveal that teachers with less than 5 years of service show the highest level of overall job satisfaction ($M = 72.80$, $SD = 8.72$), while teachers with 6-15 years of service show the lowest level of overall job satisfaction ($M = 70.30$, $SD = 8.81$). Teachers with 16-25 years of service and those with more than 26 years of service do not significantly differ in overall job satisfaction, nor do they differ significantly in overall job satisfaction from teachers with less than 5 years and 6-15 years of service (Figure 2).
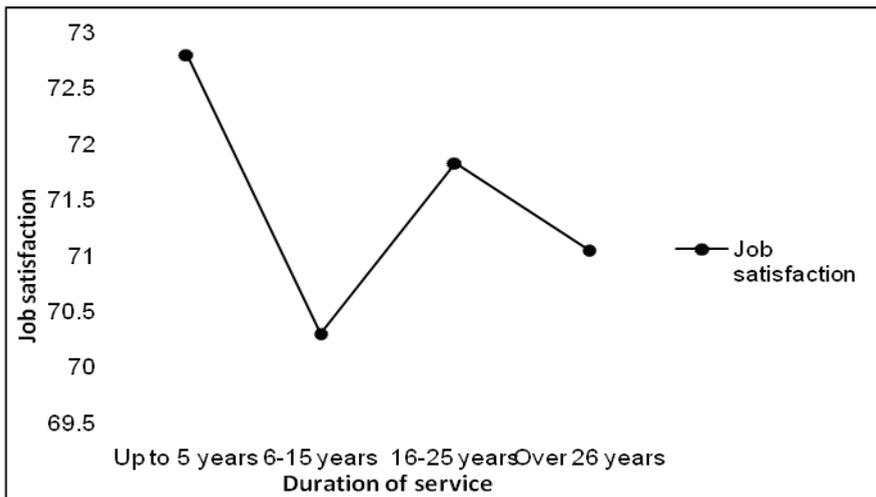
Figure 2. *The relationship between duration of service and job satisfaction*

The results of the t-test for independent samples have shown a significant difference, of moderate intensity, in overall job satisfaction considering the position of teachers ($t(903) = 5.06$, $p = .000$, $\eta_p^2 = .026$). Class teachers show a higher level of overall job satisfaction ($M = 72.87$, $SD = 8.15$) than subject teachers ($M = 70.02$, $SD = 9.16$) (Figure 3).
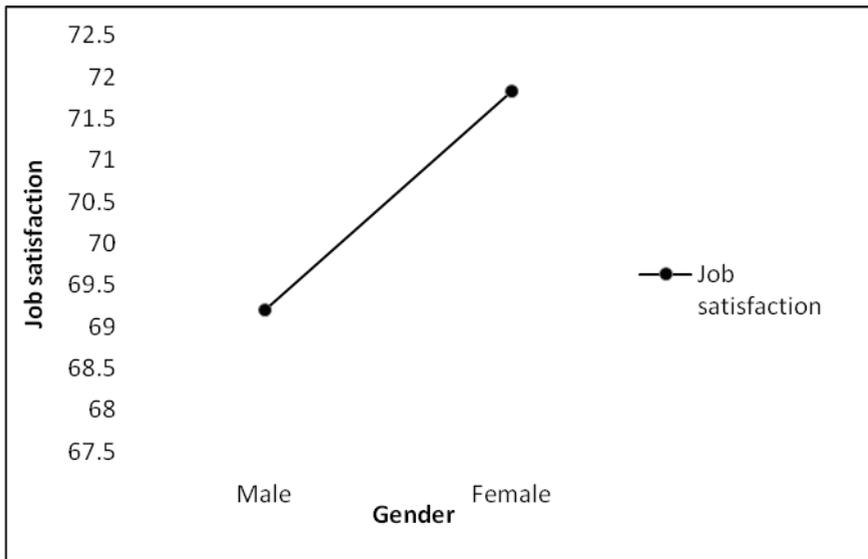

Figure 3. *The relationship between position and job satisfaction*

The results of the ANOVA have shown a significant difference, of moderate intensity, in overall job satisfaction considering the job affection of teachers ($F(2,904) = 31.31$, $p < .001$, $\eta_p^2 = .066$). Applying the Bonferroni correction ($p < .017$) did not change

136

the previously obtained results. Results of LSD post hoc test reveal that teachers who like their job show the highest level of overall job satisfaction ($M = 71.75$, $SD = 8.46$). Teachers who are not sure if they like their job show the lowest level of overall job satisfaction ($M = 59.20$, $SD = 9.70$). Teachers who don't like their job and teachers who are not sure if they like their job do not significantly differ in overall job satisfaction (Figure 4).
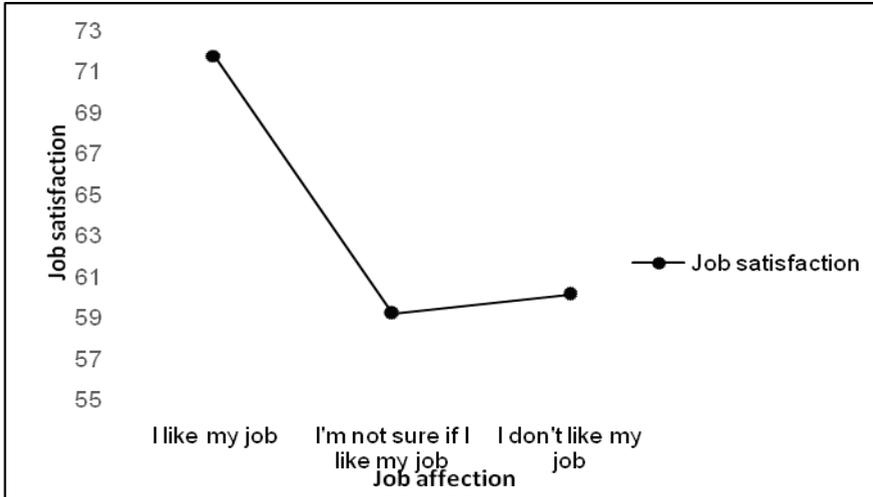
Figure 4. *The relationship between job affection and job satisfaction*

The results of the t-test for independent samples have shown a significant difference, of small intensity, in overall job satisfaction considering the marital status of teachers ($t(903) = -2.27$, $p = .024$, $\eta_p^2 = .006$). Married teachers show a higher level of overall job satisfaction ($M = 71.84$, $SD = 8.33$) than unmarried teachers ($M = 70.19$, $SD = 9.76$) (Figure 5).
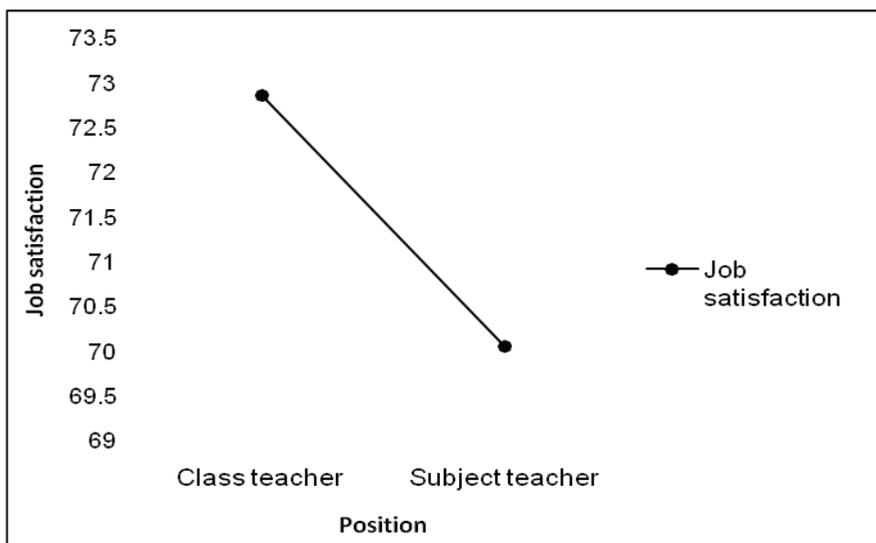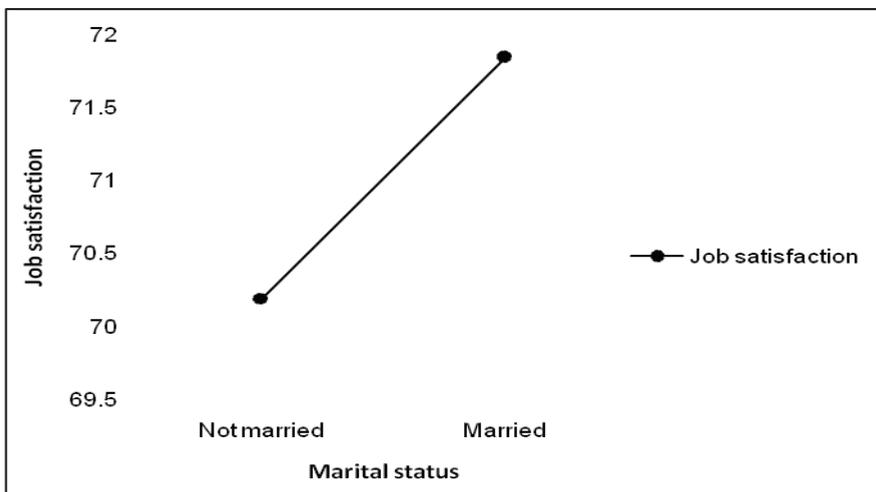

Figure 5. *The relationship between marital status and job satisfaction*

The results of the ANOVA have shown that there are no significant differences in overall job satisfaction considering the age of teachers ($F_{(4,902)} = 2.07$, $p = .082$, $\eta_p^2 = .009$).

Discussion and conclusion

This study aimed to investigate whether there are differences in teachers' overall job satisfaction depending on their socio-demographic characteristics. The obtained results have shown the significant differences in teachers' overall job satisfaction depending on their socio-demographic characteristics: gender, duration of service, position, job affection, and marital status. Some of the obtained results are following those of previous studies and some differences.

When it comes to gender, female teachers have shown a higher overall job satisfaction than male teachers. Also, some previous studies (e.g., Bishay, 1996; Dinham & Scott, 2000; Malik, 2013) indicate that female teacher are more satisfied with the job than male teachers. Ohide et al. (2017) believe that the reason can be found in the fact that women more often choose this profession. Reviewing local studies (e.g., Pralica, Zečević & Marinković, 2018; Subotić, 2010) as well as studies from around the region (e.g., Marić et al., 2020; Vidić, 2009) conducted on the samples of teachers, we can see that the sample of teachers is indeed composed mostly of women. Thus, in our culture, the obtained results may be interpreted from the aspect of gender roles, which implies teacher job as a profession more often chosen by women in our culture and society. The teaching profession has been presented by a phase "the right job for a woman". On the other hand, from the cultural perspective, men are "predestined" for engineering, legal, economic and physical jobs.

As for service duration, teachers with less than 5 years of service show the highest overall job satisfaction level. In addition to this, we can see that the lowest job satisfaction is characteristic for teachers with 6 and 15 years of service and that job satisfaction increases with teachers who have 16 to 25 years of service. The obtained results follow the results obtained in previous studies (e.g., Cetin, 2006; DeVaney & Chen, 2003; Malik, 2013) and the general trend following the relation between service and job satisfaction in a different profession. This trend is not linear (Franceško & Mirković, 2008: Van Maele & Van Houtte, 2012). Namely, only after ten years spent doing a specific job and organization of the job, the employees start realizing certain shortcomings in the organization and the job, which leads to certain job dissatisfaction (Franceško & Mirković, 2008). It is possible that teachers who have just started doing this job and are still doing it with enthusiasm do not still see shortcomings that occur in their job or do not see them as problems, which is why they have the highest level of job satisfaction. Besides, considering the bad economic factors and the situation in the region's labor market, young people may be satisfied just because they have a job. Van Maele and Van Houtte

(2012) believe that the decline in job satisfaction may occur due to a "material fatigue" that teachers work too hard, burn out and consequently feel a lower level of job satisfaction. Besides burn out at work, the decline in job satisfaction can also be explained by changes in the structure of aspirations related to work. Namely, after some time spent in educational institutions teaching, teachers start summarizing their work experience and, based on their unfulfilled expectations, realize that their careers are not developing in the desired direction, giving up on initial aspirations, and becoming dissatisfied with their jobs. This decline in teacher job satisfaction most often describes the decline in satisfaction related to teachers' rewarding, school management style and communication. The increase in job satisfaction towards the end of their professional careers can be explained by increased conformism and older teachers' desire to keep being active in school and continue their professional lives (Van Maele & Van Houtte, 2012).

Considering the position, class teachers have shown a higher level of overall job satisfaction than subject teachers. The obtained result follows the results of the study Koludrović, Jukić and Reić Ercegovac (2009) conducted in Croatia, which also indicates that class teachers have higher job satisfaction than subject teachers. The study curriculum for class teachers prepares them more adequately for the teaching job, educational work with students and cooperation with parents, unlike subject teachers who choose study curriculums that prepare them for specific professions which are not necessarily related to educational settings. Thus, class teachers enter the job more prepared, skilled and with more realistic expectations, which can be a significant factor in higher job satisfaction with teachers. In addition to this, class teachers, unlike subject teachers, are more flexible in curriculum, time and space frameworks within their work.

As for the marital status, married teachers have shown a higher overall job satisfaction than unmarried teachers. The obtained results follow the general trend between marital status and job satisfaction (Franceško & Mirković, 2008). They can be explained by the spill-over effect, meaning that marital status positively impacts overall life satisfaction, which then spills over to job satisfaction (Franceško & Mirković, 2008).

Considering the age of teachers, there were no significant differences in teacher overall job satisfaction. The obtained results are in line with the results of some earlier studies conducted on a sample of teachers (e.g., Paul & Phua, 2011; Sseganga & Garrett, 2005), but they are not following the trend we can find in another profession, where older employees are more satisfied with the job than younger employees (Franceško & Mirković, 2008).

Finally, the present study has several limitations. First, the study used a convenience sampling method, so our sample most probably is not representative. Second, the study used a measure of overall job satisfaction. Therefore, future research should examine satisfaction with certain aspects of the job so that more specific measures can be created to increase job satisfaction for teachers. Third, personal factors, such as personality traits, motivation, self-efficacy or alignment of

personal interests and job and organizational factors, such as working conditions, work colleagues or school climate, are important factors of job satisfaction (e.g. Frančesko & Mirković, 2008; Ma & MacMillan, 1999; Malinen & Savolainen, 2016; Van Maele & Van Huette, 2012), were not included in this research. Therefore, future research should examine their contribution to teacher job satisfaction.

In conclusion, this study's results have shown that gender, duration of service, position, job affection, and marital status are significant determinants of teacher job satisfaction. The results suggest that intervention programs aimed to increase teacher job satisfaction should primarily target male teachers, teachers with 6 to 15 years of service, subject teachers and unmarried teachers because they are the least satisfied with the job. Yet, to make the interventions as effective as possible, it is also necessary to examine what aspects of the job these categories of teachers are not satisfied with to work on their improvements. Teacher job satisfaction has a significant impact on the motivation of students, stability and quality of teaching. Therefore, it is important to work on increasing teacher job satisfaction constantly.

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DEMOGRAFSKE KARAKTERISTIKE I ZADOVOLJSTVO POSLOM NASTAVNIKA U OSNOVNIM ŠKOLAMA

Rezime

Zadovoljni zaposleni su produktivniji i stvaraju bolju radnu atmosferu. Zadovoljstvo poslom nastavnika u značajnoj mjeri utiče na kvalitet podučavanja i motivaciju učenika. Na zadovoljstvo poslom mogu uticati brojni lični i organizacioni faktori. Cilj ovog istraživanja je ispitati da li postoje razlike u ukupnom zadovoljstvu poslom nastavnika u osnovnim školama u Bosni i Hercegovini u zavisnosti od njihovih demografskih karakteristika: pol, starost, dužina radnog staža, pozicija (učitelji/ nastavnici predmetne nastave), odnos prema poslu i bračni status. Uzorak je činilo 907 nastavnika (80,8% žena) iz 32 osnovne škole, starosti od 22 do 66 godina (*AS* = 39,99, *SD* = 9,23). Korištena je mjera ukupnog zadovoljstva poslom (Brayfield & Rothe, 1951, adaptirala Guzina, 1980) i upitnik demografskih karakteristika. U obradi podataka korišćena je analiza varijanse i post-hoc test LSD. Utvrđena je statistički značajna razlika u ukupnom zadovoljstvu poslom nastavnika s obzirom na pol, dužinu radnog staža, poziciju, odnos prema poslu i bračni status. Muškarci, nastavnici sa 6 do 15 godina radnog staža, nastavnici predmetne nastave, nastavnici koji nisu sigurni da li im se sviđa njihov posao i nastavnici koji nisu u braku najmanje su zadovoljni poslom. Rezultati ovog istraživanja sugerišu da je ukupno zadovoljstvo poslom prisutno u različitom stepenu u različitim demografskim kategorijama nastavnika. Na budućim studijama je da ispitaju zadovoljstvo pojedinim aspektima posla u različitim demografskim kategorijama nastavnika, kako bi se mogle kreirati specifičnije mjere u cilju povećanja zadovoljstva poslom nastavnika.

Ključne riječi: ukupno zadovoljstvo poslom, demografske karakteristike, nastavnici

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EDUCATIONAL AND CYBERPSYCHOLOGY

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STUDENTS' ASSESSMENT OF ONLINE TEACHING AND DISTANCE LEARNING[22]

Abstract

Due to the coronavirus pandemic beginning in March 2020, educational work at the Faculty of Philosophy in Niš was completely rearranged to online. Two months after the implementation of distance learning and teaching, a survey was conducted to show how students assess its quality. The questionnaire was completed by 829 students. Students were quite satisfied with online teaching (M=3.08, SD=.771, scale ranged from 1 to 4). As the best, students rated classes organized via Google Meet (60.8%), Google Classroom (16.4%) and combined applications (13.8%). The most favorable grades were given by PhD students (M=4.00, SD=.00), and by fourth-year BA students (M=3.25, SD=.666). Although all relatively high, average grades given by students of particular departments differ as well (F(11, 817) = 3.674, p<.001). Regression analysis (R=.760; F(4, 824)=282.368; p<.001) showed that 57.8% of the variance of students' satisfaction with the organization of distance learning could be predicted by a set of variables (online realization of pre-exam obligations; availability of teachers and associates for communication with students; whole work organization at the Faculty of Philosophy during the emergency state; representation of online teaching that enables students to learn), one of which is the most significant predictor: perception of the overall work organization at the Faculty during the lockdown ($β$=.532, p<.001). Although it cannot be a complete substitute for face-to-face teaching, our results, based on students' statements about online teaching, indicate that online teaching and distance learning might have the capacity to enable process of knowledge and skills construction and acquiring educational outcomes.

Keywords: distance learning, online teaching, quality assessment, students

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Introduction

Distance learning, which literature also often refers to as *distance education*, *e-learning* and *online learning* is a form of education characterized by the physical separation of main participants in the learning process, and application of different technologies, i.e. available tools to ensure and support proper teacher-student communication, and student-student communication (AACSB International, 1999). Historically speaking, distance learning has been primarily targeted at various affinity groups such as non-traditional students, individuals with full-time jobs, military personnel, foreign nationals or individuals who live and work quite remotely and are therefore prevented from attending face-to-face lectures. However, in modern times, especially with the progress of modern information and communication technology, this type of learning, although specific in regard to its characteristics, has become generally acknowledged and widely accepted in education with a tendency of continuous growth in both intensity and extent. Although there has been an increase in the number of educational institutions that adopt, practice and invest in the application of educational technology to support teaching and learning worldwide, as well as various proposals in the online education market, online teaching and learning started to reach its full potential for all categories of participants in the education process and at all levels of education in spring of 2020, due to the coronavirus pandemic. This is especially evident at the higher education level.

The Faculty of Philosophy in Niš was also faced with the seemingly impossible mission of organizing learning activities in such extraordinary circumstances. Therefore, traditional learning in a classroom setting involving the conventional student-teacher-content relationship has been transformed into online learning. This type of learning encompasses much more complex relationships due to the radically increased application of technology and various digital platforms. Learning took place by using various Internet tools, including conference systems, navigation and communication tools, time-limited colloquiums and exams, e-mail, content search, as well as applications used for student progress monitoring, evaluation and self-evaluation, assessment and distribution of grades and learning material.

The typical teacher-student-content interaction that takes place in a usual classroom setting has changed its form in the online environment and it has divided into two types of interaction styles. The first type refers to teachers, students and learning content, while the second type includes technology, software and communication methods. These styles represent the synergy that makes online teaching and learning a unique learning experience for both university teachers and students.

Since the Faculty of Philosophy has accepted the duties and taken responsibility for providing, monitoring, developing and improving quality in various fields, another priority has been added to this list due to these specific

circumstances, and that is the concern for quality and sustainability of online teaching that was due to last for several months. The quality of response to the educational challenges faced by teachers, associates and students during the implementation of distance learning understandably imposed accompanying questions such as: (1) Which segment of distance learning should be improved and in what way? (2) Which platforms and available applications used are proving to be efficient and effective? (3) How (dis)satisfied students are with the organization of online teaching, i.e. teaching via various applications? (4) What are the advantages and disadvantages of distance teaching and learning? (5) How burdened students are with new requirements, learning materials and how they cope with this? (6) Which are the most suitable digital platforms that enable this type of learning? (7) In which segments were students provided with support and in which was it lacking? Since students are direct users of educational services, and the best critics of teaching, and as the value of feedback that can be obtained from them is significant, it would be meaningless to talk about the quality of online instruction without taking into account the assessment by immediate participants. Students' evaluation data are important for creating a plan and activities to improve the quality of online instruction, overcome and remove certain obstacles, as well as implement corrective measures in segments where inconsistencies and deficiencies have been identified.

Distance teaching and learning in the light of constructivism

A detailed review of literature could provide several theoretical approaches that experts in the field of education are guided by, especially in regard to the modern concept of distance teaching and learning. Namely, popularity, innovation, inevitability and development are just some of the descriptors that guide the authors towards the necessity to theoretically support and shed light on this concept of the modern age as precisely as possible. Without diminishing the value and significance of any theoretical orientation and tendency, but rather by considering their valuable contribution to the field of education, primarily in the field of teaching and learning, this paper singles out constructivism (Seifert & Sutton, 2009) as the leading paradigm of learning.

Constructivism also gives an important contribution considering teachers' styles of professional behavior. Namely, teacher's classroom management style is a significant factor of effectiveness of the teaching process (Marzano, Marzano & Pickering, 2003; Wang, Haerted & Wallberg, 1993) because it enables the process of knowledge construction in students. Empirical data point out interactionist style as the most effective (Đigić, 2017) and it could be said that this style represents teacher's behavior expected from the point of view of constructivist theory (Glickman & Tamashiro, 1980).

As the extraordinary circumstances caused by the current coronavirus pandemic made a radically rapid shift from traditional teaching to online teaching, there were also pedagogic and psychological changes to teaching and learning that happened at the same pace. Simply stated, the standard top-down approach in teaching and partial student passivity have changed in their form and essence towards a more interactive, much more collaborative learning environment in which teachers and students together master the learning process, and learn from each other online. The role of the teacher has changed significantly, from the main and central participant to the one who leads and guides on the side. From the point of view of the constructivistic theory, this would mean that all participants in the learning process actively construct their knowledge during the interaction with their environment. Therefore, according to this student-centered approach (Wright, 2011), students are those who co-create their learning experience. The essence of constructivism is reflected in the adequate empowerment, support and encouragement of students by teachers to become active constructors of their knowledge, as well as researchers, and engaged participants in teaching and learning instead of passive absorbers of information. Regarding this, teachers shift their focus to experiences that would result in constructive learning rather than to traditional lessons and evaluation of the level of information acquired by students that they deem necessary for students to know. Teachers' focus is on functional and applicable knowledge derived from construction and reconstruction. Every student should be provided with opportunities and support to be both the instructor (teacher) and the instructed (student) in the online environment. The job, i.e. professional roles, activities and tasks of the teacher are changed. From a single source of knowledge, teacher becomes a leader of his/her students' learning (co)construction process. Teacher becomes closer to students by addressing their learning needs, by opening and moderating discussions, creating problem situations for students to think about, investigating information and finding solutions. Such learning situations lead students to ever higher learning goals. It may be worth mentioning that this progressive approach arose from the idea of progressive education whose main advocate was the American philosopher and pedagogue John Dewey (Djui, 1966). This author emphasized that the education of a child in totality implies the achievement of intellectual, physical and emotional growth and development, and learning is best achieved when tasks are performed and not with mere memorization of facts. Jean Piaget (Pijaže, 1983) also made a valuable contribution to this concept, claiming that learning derives from constructing mental models based on experience.

From this perspective, constructivism could not be understood as a philosophy of learning but rather as a "knowledge model" that is both pedagogically and psychologically applicable and justified, and in the language of education, it is a model that advocates and supports multiple teaching strategies and approaches. Authors such as Yilmaz (2011) and Ćirić and Jovanović (2018) point to Piaget's understanding of the process of intellectual and cognitive development, which

is reminiscent of the biological act that requires adaptation to the requirements of the environment, which is confirmed by the online environment, teaching and learning.

Advantages and disadvantages of distance teaching and learning

Even though distance teaching and learning offer countless advantages from the aspect of technical, social and economic criteria, certain disadvantages are also inevitable, i.e. limitations contained within them that need to be pointed out (Oliveira, Penedo & Pereira, 2018). The pedagogical benefit of distance learning methods triggers different ways of understanding knowledge creation and acquisition, especially among students (Fincham, 2013). This type of learning significantly increases the following possibilities: learning and teaching, updating information, improving and advancing personally and professionally, cost-effectiveness of educational resources, availability of Internet platforms and tools for teaching and learning (especially free ones), improving the quality and diversity of existing educational structures, improvements and consolidation of all capacities. In addition to the fact that technology can be used at home without interruption, many forms of learning are characterized by flexibility in terms of student participation and organization according to their own wishes or individual needs, at minimal cost. The multisensory nature of distance teaching and learning (Kock, 2005) is also reflected in the availability of a wide range of learning materials that can support the desire for learning of each student. For example, while some students prefer visual stimuli, others prefer to learn by listening or communicating directly with the teacher through different educational software, platforms and tools, video conference calls and meetings, etc. Moreover, it seems that in the online environment, unlike traditional teaching in the classroom setting, there is more interaction and more freedom to communicate (Correia, Liu & Xu, 2020), even among the shy, introverted students, because they can use e-mail or other individualized tools to clarify any dilemmas and doubts. Also, all mentioned characteristics of distance learning are very close to the concept of active teaching and learning (Ivić, Pešikan & Antić, 2001) which represents much more favorable approach than traditional teaching. The main advantage of such conception is higher level of students' activity that is necessary condition for successful learning and high-quality educational achievement.

We should not disregard the fact that there are various shortcomings of distance learning, which students, teachers and institutions themselves should be aware of before launching any distance learning plan and program. Universities and faculties need to have the capacity not only to adapt and implement new work methodologies and procedures, but also to transform their teaching and learning culture (Rehn, Maor & McConney, 2016). Therefore, one should keep in mind both

technical, as well as organizational and pedagogical aspects. Online teaching (and learning) requires planning in advance. Also, one should keep in mind possible hidden costs, limitations and overburdening of online learning platforms, which makes it very difficult for these to function and deliver, which further impedes teachers from working properly as they use them to teach. Furthermore, teachers are expected to invest a disproportionate amount of effort because, in addition to learning material preparation and the actual lesson teaching, it is necessary to dedicate part of their time to additionally support and advise students.

Oliveira and associates (2018) presented a research conducted with the aim of identifying the main advantages and disadvantages of distance education for both students and educational institutions. These authors conducted an exploratory case study in Brazil with the aim of analyzing the effectiveness of this modality compared to traditional forms of teaching. The obtained results were divided into 4 categories: (1) advantages for students; (2) disadvantages for students; (3) advantages for the institution; (4) disadvantages for the institution. Among the numerous advantages of distance education for students, these authors particularly emphasize the following: flexibility, availability of content, low cost, learning from home. According to the findings of this study, the disadvantages or shortcomings of distance education for students are insufficient student discipline and lack of direct feedback to student questions. Speaking about the benefits of distance education for educational institutions, the authors highlight low cost, availability of educational services to a large number of students, less need for physical space, as well as using a video lesson several times (one video lesson can be used for several groups). Disadvantages of distance education for educational institutions which the authors particularly highlight are: decrease in the quality of the higher institution (students do not engage as much as they did during traditional lessons), students wait longer for feedback compared to traditional learning, difficulties in teaching online lessons (teachers are accustomed to regular classroom lessons), cultural aspect (prejudice regarding distance learning and genuine belief that distance learning courses are inefficient and ineffective compared to those in the classroom).

Authors such as Barr and Miller (2013) suggest that one of the essential limitations of the learning medium (the Internet) is isolation, which can result in the alienation of students from a social perspective. Social interaction in the online environment is influenced by communication approaches designed within online programs, as suggested by McInnerney and Roberts (2004). These authors refer to various studies which have shown that in online programs and learning platforms students spend significantly more time developing cognitive and critical thinking skills and significantly less time in social growth and development. Isolation occurs when students are unable to communicate with their peers, when they lack basic IT skills, or have technical difficulties or other barriers. Also, students often suffer from academic struggles leading to negative experiences online.

It is clear that online learning and face-to-face learning are very different and therefore it is not valid to equalize the benefits of online instruction and

the benefits of direct instruction in the classroom, because online instruction does not necessarily have to be as good as traditional. We need to be aware of differences between these two without assuming that they are the same, as this would disregard the fact that education is heterogeneous in nature, with highly variable and different values. Online teaching and learning may be effective, but not equally effective for all students and all subjects.

Method

Due to the coronavirus pandemic, during the spring semester of the 2019/2020 academic year, educational work at the Faculty of Philosophy in Nis was transformed to online teaching using available digital platforms. After two months of online teaching, a survey was conducted with the aim to find out how students assessed the quality of implemented online teaching and distance learning. The goals of the study were: (1) to explore how students evaluated various aspects of online teaching conducted during the spring semester at the Faculty of Philosophy in Niš (covering study courses by online teaching; provision of learning materials; quality of instruction via different applications; teachers' support to students; advantages and disadvantages of online teaching recognized by students; students' satisfaction with the organization of distance learning); and (2) to test the model predicting students' satisfaction with the organization of distance learning.

The online questionnaire was designed for purposes of this study. It covered many aspects of the new way of teaching and its effectiveness: covering study courses by online teaching; the possibility to finish pre-exam obligations via online applications; availability of teachers and associates for communication with students; teachers' support to students; provision of learning materials; students' statements about the capacity of online teaching via different applications to enable continuous learning; students' satisfaction with the organization of distance learning; students' satisfaction with the whole organization of work at the Faculty during the emergency state; their statement about availability of information for students; students' estimation of representation of online teaching that enables continuous learning. There were 10 items concerned with mentioned topics, which required answering in ranges or on the scale. The reliability of this part of the questionnaire was quite satisfactory (α=.857). There were also a few questions concerning with advantages and disadvantages of online teaching recognized by students. Also, students were asked to give additional explanation related to some assessments, for example to describe appropriate support obtained by their teachers and associates. This paper will address only the key issues examined in this survey.

The questionnaire was sent to students via their e-index accounts. Participation in this research was on a voluntary basis while ensuring complete

anonymity of the respondents. The research sample consisted of 829 students from all departments, all study levels and all study years (Table 1). Representation of students from different departments was in accordance with the total number of students enrolled to particular study programs.

Table 1
Number of students from different departments and study years

Department	Frequency	Percent	Study year	Frequency	Percent
English language and literature	118	14.2	first year BA	204	24.6
Philosophy	19	2.3	second year BA	213	25.7
French language and literature	50	6.0	third year BA	174	21.0
History	32	3.9	fourth year BA	189	22.8
Communicology and journalism	117	14.1	final (graduate) year BA	23	2.8
German language and literature	22	2.7	first year MA	14	1.7
Pedagogy	91	11.0	first year PhD	7	.8
Psychology	158	19.1	second year PhD	4	.5
Russian language and literature	21	2.5	third year PhD	1	.1
Social politics and social work	75	9.0			
Sociology	52	6.3			
Serbian language and literature	74	8.9			
Total	**829**	**100.0**	**Total**	**829**	**100.0**

Results and discussion

First of all, students were asked about the coverage of study courses by online teaching. Data showed that 93.9% of them answered that all (51.9%) or the majority of courses (42.0%) were covered by online teaching, while 5.4% answered that online teaching is organized for the minority of courses and 0.7% of students said that there was no online teaching for any course. Furthermore, 76.9% of students answered that they were required and provided with support to perform pre-exam tasks via online applications: for all courses (39.7%) or for the majority of courses (37.2%). More than 90% of participants answered that teachers provided learning materials for all or most of courses. Having in mind that teaching staff was suddenly faced with requirement to transform teaching process into online form, these estimations are quite satisfactory. The aforementioned lower percentage of those teachers who did not respond to the demands of online teaching might be justified by insufficient knowledge of modern ICT such as older teachers or some

other factors such as the lack of adequate technical devices or other technical issues.

At the beginning of the lockdown due to the pandemic, the main mission of the Faculty was to enable the continuity of students' learning. With the aim to find out if this mission was accomplished, students were asked to estimate if the distance learning does enable their learning. More than 75% of examinees answered that online teaching enables learning completely (21.1%), or to a greater extent (54.3%), while only 2.5% answered that it does not enable learning at all. Perhaps the reasons for the percentage of those who believe that such organized teaching does not enable learning could be found in the habits and advantages of face-to-face teaching and conventional teaching methods. Moreover, the lack of direct social interaction can impair students' motivation for active distance learning and adequate engagement in online teaching.

When it comes to the quality of instruction via different applications, students assessed that the most favorable application that enables learning is Google Meet (64%), followed by Google Classroom (16.1%), and also combined applications (11.6%) – students pointed out that the combination of these two applications was the best option. Such assessment is in line with many learning-related features of videoconferencing systems (Correia et al., 2020). Students also expressed the highest satisfaction with the instruction performed using these applications: 60.8% of students is the most satisfied with teaching via Google Meet, 16.4% with Google Classroom and 13.8% with combined applications, mostly mentioning combination of Meet and Classroom. Some teachers also used other applications like: Zoom, Edmodo, Viber, Skype, as well as Facebook and e-mail, but these applications were not recognized by greater number of students as satisfying and effective. A possible reason could be seen in the fact that almost all teachers used Google Meet and Google Classroom applications. At the end of March 2020, G-suite report for the Faculty as the user showed 1497 Google Meet sessions and 887 Google Classrooms opened during the previous two weeks. This report confirmed the estimation that almost all courses were covered via these applications.

It should be said that transformation of instruction from face-to-face mode into online teaching and distance learning was the great challenge for teaching staff of the Faculty. It was performed thanks to high enthusiasm and team work. Those who had higher ICT skills supported other colleagues making detailed guidelines for using these applications and encouraging them to try them out. Also, continuous support of Faculty IT Center was very important. By transferring learning process to online forms, teachers learned as well, and their learning process could be described in terms of Kolb's model of experiential learning that represents a process of constructing knowledge (Correia et al., 2020). The use and improvement of combined applications gives space for teachers to make work easier for students and themselves so that by managing them they can more easily monitor and evaluate student activities and include them in an adequate way

in the process of active learning and thus develop students' independence and autonomy. Furthermore, students   are given the opportunity to use online tools that are familiar to them and with the use of which they feel more comfortable.

It seems especially important that 68% of students stated that teachers and associates were fully available for them, 28% estimated that teachers were mostly available, and only 4% told that teachers were insufficiently available. Availability of teachers and associates for students is very important under normal and usual circumstances for the co-construction of knowledge and skills, but during the emergency state it was essential. The initial months of the pandemic were characterized with strong fear and concern about health and, on the other hand, discomfort caused by the lockdown (Aristovnik, Keržič, Ravšelj, Tomaževič & Umek, 2020). In such situation, learning and studying had healing effect on young people and open communication with teachers and associates supported this "piece of normal life".

More than 90% of students answered that teachers and associates supported them in appropriate way. As the appropriate support, they listed: teaching according to the regular schedule; teachers are ready for all types of consultations and are there to provide any clarification; teachers send learning materials and assignments that make exam preparation easier; teachers create different pre-examination obligations including more possibilities and various tasks taking into account students' proposals; teachers are professional, responsible and always available; teachers give all the necessary information and tend to offer the necessary explanations. Describing teachers' behavior experienced as inappropriate or missing support, students listed: delay in answering e-mails, informing students or in giving feedback on student work; too many pre-examination obligations and insufficient explanation; insufficient encouragement for interaction among students and discussions regarding the topics covered by teaching; lack of digital literature and textbooks; disregarding the fact that some students do not have adequate technical equipment and conditions for full participation in online educational activities. This is a clear sign that teachers also need support and more instruction on the importance of communicating with students in difficult circumstances. The absence of two-way and multi-way communication creates aversion towards online teaching on a global level and not just on the individual one.

Keeping in mind advantages and disadvantages of online teaching and distance learning (Barr & Miller, 2013; Oliveira et al., 2018) we asked students if they enjoyed distance learning and why. Around two third of students answered positively and explained their experience with following reasons: flexible and economical organization of time; continuous work, learning on time, no procrastination; participating in classes from the comfort of your home; possibility to watch the lecture again; new, different and more interesting approach; for some students it was easier to engage in discussion than in live lectures; real-time communication; there is no distraction by others in the background; less

pressure to deal with subjects that do not interest me; professors provide the material needed for learning; a way to pass the time during the isolation period. On the other hand, one third mostly did not enjoy distance learning and their reasons are the following: the lack of face-to-face interaction; unnatural situation does not encourage students to be active; despite more effort than usual, it seems that achievements are lower; some subjects are not taught online (because it is not possible); spending a lot of time in front of the computer; more pre-exam obligations than in usual conditions; weaker motivation to learn than in normal conditions, learning capacities are reduced due to stress because of coronavirus pandemic; problems with technology, mainly internet speed; high tension during the online colloquium; no exams (many exams were postponed).

Students expressed their satisfaction with the whole organization of distance learning on the scale ranging from 1 (not satisfied at all) to 4 (completely satisfied). The total average grade was 3.08 (Table 2).

Table 2
Average grades expressing students' satisfaction with the organization of distance learning (by departments)

Department	N	M	SD	Min.	Max.
English language and literature	118	3.06	.743	1	4
Philosophy	19	3.11	.658	2	4
French language and literature	50	3.32	.653	2	4
History	32	3.00	.984	1	4
Communicology and journalism	117	3.13	.749	1	4
German language and literature	22	3.00	.690	2	4
Pedagogy	91	3.24	.779	1	4
Psychology	158	2.84	.781	1	4
Russian language and literature	21	**2.71**	.845	1	4
Social politics and social work	75	3.11	.815	1	4
Sociology	52	3.08	.682	1	4
Serbian language and literature	74	**3.34**	.668	2	4
Total	**829**	**3.08**	**.771**	**1**	**4**

It could be seen that the level of students' satisfaction with the organization of distance learning differs among Faculty's departments (F(11, 817)=3.674, p<.001). The most satisfied were students from Serbian language, French language, and Pedagogy department. Least satisfied were students from Russian language and Psychology department. Anyhow, it should be highlighted that the distance between the lowest and the highest average grade is only 0.63. Obtained differences could be explained by the actual differences in the quality of online teaching at different departments, but students' expectations and criteria (that could be various, but there are not data concerning these variables) should be taken into account as well. Finally, it could be concluded that the average level of

students' satisfaction with new form of instruction is quite favorable – it belongs to the upper part of the scale – between the median and the highest value. However, a deeper analysis of the elements of the quality of online teaching is needed, especially the one which students from Psychology and Russian language and literature department are not satisfied with. Therefore, in the future we should work on overcoming them and defining measures to improve certain areas of teaching process quality.

When students' satisfaction with the organization of distance learning is seen in relation to the study level and the study year (Table 3), there were perceived differences as well (F(8, 820)=5.008, p<.001).

Table 3

Average grades expressing students' satisfaction with the organization of distance learning (by the study year)

Study year	N	M	SD	Min.	Max.
first year BA	204	3.07	.749	1	4
second year BA	213	3.05	.794	1	4
third year BA	174	2.89	.808	1	4
fourth year BA	189	**3.25**	.666	1	4
final (graduating) year BA	23	3.17	.937	1	4
first year MA	14	2.86	.663	1	4
first year PhD	7	**4.00**	.000	4	4
second year PhD	4	**4.00**	.000	4	4
third year PhD	1	**4.00**	.000	4	4
Total	**829**	**3.08**	**.771**	**1**	**4**

Based on these average grades, it could be said that older students are more satisfied with online teaching than younger ones. However, it is important to point out that the representation of PhD and especially MA students in the sample is lower than the representation of BA students. When it comes to MA students, most MA study programs do not have subjects in the spring semester – this semester is dedicated mainly to professional practice and work on MA thesis. Therefore, very small number of master's students had lessons during this semester and their grades could not be taken as representative. PhD students expressed the highest level of satisfaction with distance learning, but their instruction is anyway organized in a different way when compared to the first and the second level studies. The work with PhD students is usually organized in a very small groups and often individual, mainly through discussions focused on particular topic or problem. It seems that the new organization of teaching was more appropriate for PhD studies than for lower study levels. When it comes to differences among BA students from different study years, fourth year students expressed the highest satisfaction with distance learning. This finding is in accordance with the statement that distance learning requires more autonomy,

higher motivation, more learning skills and more previous knowledge in the field (Aristovnik et al., 2020).

The aim of the study was also to investigate the possibility of predicting students' satisfaction with the organization of distance learning. Before regression analysis, correlations between students' satisfaction with the organization of distance learning and its possible predictors were checked (Table 4).

Table 4

Correlations between students' satisfaction with the organization of distance learning and variables recognized as its possible predictors

	Students' satisfaction with the organization of distance learning	Students' satisfaction with the overall work organization at the Faculty during the lockdown	Students' estimation of representation of online teaching that enables continuous learning	The availability of teachers and associates for communication with students
Students' satisfaction with the overall work organization at the Faculty during the lockdown	.723**			
Students' estimation of representation of online teaching that enables continuous learning	.579**	.558**		
The availability of teachers and associates for communication with students	.481**	.529**	.454**	
The amount of completion of pre-exam obligations via online applications	.312**	.287**	.264**	.224**

** Correlation is significant at the 0.01 level

It could be seen that four variables represented in Table 4 significantly correlate with students' satisfaction with distance learning. The strongest correlation is achieved by students' satisfaction with the overall work organization at the Faculty during the lockdown. Also, analysis indicated that there were significant correlations between the examined variables.

Finally, having in mind previous correlation analysis, hierarchical regression analysis was performed to investigate the possibility of predicting students' satisfaction with the organization of distance learning (Table 5). First model involved students' satisfaction with the overall work organization at the Faculty

of Philosophy in Niš during the lockdown as the predictor. The second one involved mentioned predictor and students' estimation of representation of online teaching that enables continuous learning. Third model involved these two predictors and the availability of teachers and associates for communication with students. Finally, the last model involved all four predictors: (1) students' satisfaction with the overall work organization at the Faculty of Philosophy in Niš during the lockdown; (2) students' estimation of representation of online teaching that enables continuous learning; (3) the availability of teachers and associates for communication with students; and (4) the amount of completion of pre-exam obligations via online applications.

Table 5

Predicting students' satisfaction with the organization of distance learning by the set of variables – hierarchical regression analysis, models' summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.	Change Statistics				
							R Square Change	F Change	df1	df2	Sig. F Change
1	.723a	.522	.522	.533	903.911	.000[b]	.522	903.911	1	827	.000
2	.753b	.567	.566	.508	541.268	.000[c]	.045	85.867	1	826	.000
3	.756c	.572	.571	.505	367.790	.000[d]	.005	9.583	1	825	.002
4	.760d	.578	.576	.502	282.368	.000[e]	.006	11.739	1	824	.001

The last model involving all four predictors explained 57.8% of variance in students' satisfaction with distance teaching and learning. Although the addition of each subsequent predictor significantly increased the percentage of explained variance of the criterion variable, these changes were small. First tested model shows that students' satisfaction with the overall work organization at the Faculty explain the great amount of variance (52.2%) in students' satisfaction with the online teaching. The greatest increase of explained variance (up to 56.7%) followed the addition of students' estimation of representation of online teaching that enables continuous learning as the predictor. Further addition of predictors into the model increased the percentage of explained variance by only 1%.

Particular contribution of each predicting variable to the prediction of students' satisfaction with organized distance learning could be seen in Table 6.

Table 6

Particular contribution of examined variables to predicting students' satisfaction with the organization of distance learning – four models tested through hierarchical regression analysis

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.

1	Students' satisfaction with the overall work organization at the Faculty during the lockdown	.637	.021	.723	30.065	.000
2	Students' satisfaction with the overall work organization at the Faculty during the lockdown	.511	.024	.580	21.029	.000
	Students' estimation of representation of online teaching that enables continuous learning	.174	.019	.256	9.266	.000
3	Students' satisfaction with the overall work organization at the Faculty during the lockdown	.481	.026	.546	18.458	.000
	Students' estimation of representation of online teaching that enables continuous learning	.161	.019	.236	8.374	.000
	The availability of teachers and associates for communication with students	.118	.038	.085	3.096	.002
4	Students' satisfaction with the overall work organization at the Faculty during the lockdown	.468	.026	.532	17.915	.000
	Students' estimation of representation of online teaching that enables continuous learning	.153	.019	.225	7.981	.000
	The availability of teachers and associates for communication with students	.110	.038	.079	2.898	.004
	The amount of completion of pre-exam obligations via online applications	.076	.022	.082	3.426	.001

The most powerful predictor was students' perception of the overall organization of work at the Faculty (β=.723, p<.001). This finding has confirmed that the overall organization of the work at the Faculty level represented a framework that influences all areas of work. First of all, Faculty management strongly supported online teaching from the very beginning of the lockdown. The other priority during the lockdown was to obtain reliable information for students and employees. The Faculty's official website and student portal were the main sources of information for students. Also, student vice-dean and representatives of students' organizations were in regular communication with Faculty management members and they also shared information with students via social networks. Faculty of Philosophy is a very complex organization with 32 study programs at all three levels and it was very important to find the way for Faculty bodies (scientific, teaching and managing) to be able to make important decisions. Their work was organized online as well, via Google Meet and other applications, and this was another way to encourage teachers to use online applications. Also, all departments had intensive online activities which included working with students, but also the activities directed to the community (online and phone psychological support, pedagogical assistance to pupils and their parents, professional services for local crisis headquarters, educative blog posts etc.). Finally, preparatory classes for entrance exams were organized online for around a thousand participants and with the contribution of the most of teaching

staff working at all thirteen departments. All described and other activities performed at the Faculty level ensured an organized and reliable environment for teaching activities, whereby everything was transferred to online form.

The second powerful particular predictor was the representation of online teaching that enables students to learn (β=.256, p<.001). This is quite understandable relation. If the students' main goal is to obtain planned educational achievement, it is expected for them to be satisfied when teaching process enables the realization of this goal. Such relation could be recognized also in students' answers concerning the effectiveness of particular online applications and their satisfaction with the instruction realized via different applications (mentioned at the beginning of the results presentation).

The availability of teachers and associates and the possibility of online completion of pre-exam obligations contributed significantly to increasing the amount of explained variance of students' satisfaction with distance learning, but this increase was low (only about 1%). It could be said that these variables represent mainly the aspects of the other two predictors: quality of the overall work organization implies the availability of teaching staff to students, and realizing effective teaching implies the realization of pre-exam tasks. Earlier presented mutual correlations between predicting variables confirm this statement as well. After all, it could be concluded that the quality of overall work organization at the Faculty is shown as the most important predictor of students' satisfaction with organized distance learning.

Conclusion

This survey offers a few important findings. First of all, in general, it could be said that students were satisfied with the online teaching organized at the Faculty of Philosophy in Niš during the lockdown caused by the coronavirus pandemic. Students rated classes organized via Google Meet application as those of the best quality, which enabled communication in real time, making it seem like face-to-face teaching. The second favored application was Google Classroom that requires students' individual work and teachers' feedback. Such learning activities contribute to building knowledge and skills in a way explained by constructivist approach. Students were most satisfied with the instruction realized through some combination of online applications, that is, the combination of Google Meet and Google Classroom. It could be concluded that these two applications obtained two main criteria of teaching process' effectiveness: communication in real time and knowledge construction by working on given tasks. Although online teaching and distance learning have their own specifics, these two aspects are important aspects of teaching in general. PhD students expressed the highest satisfaction with online teaching and distance learning and among BA students, fourth year students were most satisfied. This finding could indicate that higher

learner's autonomy and greater closeness with the discipline contribute to easy and successful distance learning. This also indicates that older students have more experience and more mature understanding of the benefits of distance learning and its inevitability in risky circumstances, and it can be expected that they will be more willing to access later trainings that are organized in different ways, including necessity of online schooling. For younger students, this way of working is probably less known and less close due to their lack of experience, so it is logical and necessary for them to develop a habit to learn in an online environment. This would mean that in the future much more time and support need to be invested in preparing and introducing younger students to online activities. The sudden transition from face-to-face to online teaching for younger generations can be difficult, but overcoming these requires a certain period of adapting and developing a basis for new skills.

The results showed that students' satisfaction with the organization of distance learning could be predicted by students' perception of the overall organization of the Faculty during the lockdown, by the representation of online teaching that students assess as efficient, by the availability of teachers and assistants for communication with students, and by the possibility of online completion of pre-exam obligations. The first mentioned variable was proven to be the most powerful predictor of students' satisfaction of distance learning.

It is worth mentioning that a significant number of students commented that online teaching cannot completely adequately replace face-to-face teaching. So, despite favorable students' assessment of online teaching implemented during the lockdown, the most preferred way of teaching is still via direct face-to-face communication.

The presented study has provided important feedback concerning the way of organizing teaching process under conditions that were altered due to the corona virus pandemic. The results were the starting point in finding the best solution, designing and implementing certain measures to improve the quality of online teaching for the next academic year. Finally, it could be expected that experiences with online teaching and distance learning will bring significant changes in the future even when the pandemic becomes the past (Veletsianos, 2020). Therefore, some of the identified disadvantages can serve as a good basis for the implementation and enforcement of new measures in order to improve online teaching. This would create adequate opportunities for Faculty of Philosophy in Niš to be able to work properly in the event of unforeseen or risky circumstances, but also to improve teaching process in regular conditions supplementing traditional teaching with classes that will be realized online from time to time.

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OCENE STUDENATA O NASTAVI I UČENJU NA DALJINU

Rezime

Usled pandemije korona virusa, u martu 2020. godine, obrazovni rad na Filozofskom fakultetu u Nišu potpuno je transformisan u rad na daljinu. Nakon dva meseca realizacije onlajn nastave, sprovedeno je istraživanje sa ciljem da pokaže kako studenti ocenjuju njen kvalitet. Upitnik je popunilo 829 studenata. Studenti su uglavnom bili zadovoljni nastavom na daljinu (M=3.08 na skali od 1 do 4, SD=.771). Kao najbolju, student su ocenili nastavu organizovanu primenom aplikacije Google Meet (60.8%), Google Classroom (16.4%) i kombinacijom aplikacija (13.8%). Najpovoljnije su onlajn nastavu ocenili studenti doktorskih studija (M=4.00, SD=.00), a među studentima osnovnih studija, najpovoljnije ocene su dali studenti četvrte godine (M=3.25, SD=.666). Mada su sve relativno visoke, prosečne ocene koje su dali studenti sa različitih departmana se takođe razlikuju (F(11, 817)=3.674, p<.001). Regresiona analiza (R=.760; F(4, 824)==282.368; p<.001) pokazuje da se 57.8% varijanse zadovoljstva studenata organizacijom učenja na daljinu može predvideti setom varijabli (onlajn realizacija predispitnih obaveza; dostupnost nastavnika I saradnika za komunikaciju sa studentima; ukupna organizacija rada Filozofskog fakulteta tokom vanrednog stanja; zastupljenost onlajn nastave koja omogućava učenje), od kojih se kao najznačajniji prediktor izdvojila percepcija ukupne organizacije rada na Fakultetu za vreme vanrednog stanja (β=.532, p<.001).

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Iako ne može u potpunosti da zameni nastavu licem u lice, rezultati ove studije, zasnovani na stavovima studenata, ukazuju na to da bi nastava na daljinu mogla imati kapaciteta da omogući proces konstrukcije znanja i veština i ostvarivanje obrazovnih ishoda.

Ključne reči: učenje na daljinu, onlajn nastava, ocenjivanje kvaliteta, student

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THE USE OF LEARNING STRATEGIES IN E-LEARNING AND ACHIEVEMENT

Abstract

Using strategies in learning is one of the main predictors of achievement. In learning from digital texts, it is even more important because, compared to learning from printed material, it gives the learner more opportunities to look for different options and at the same time lose focus while learning. Therefore, the aim of our study was to find out: 1) what learning strategies students use during learning from digital text and how often they use them; 2) how the use of these strategies is related to achievement; and 3) the differences in the use of learning strategies and in achievement between boys and girls. 443 students (219 boys and 224 girls) from grade 9 of primary school participated in the study. The students learned about the perception of colors with the help of an e-learning unit. They had the choice to make notes for learning. The notes were collected after learning and analyzed according to the learning strategy used (rehearsing, elaboration, and organization). Their knowledge on the subject was assessed by a pre- and post-test consisting of 5 open and 8 multiple-choice questions covering the learning material. Results showed that students who took notes scored higher on the post-test than those who did not take notes ($M_1 = 8.78$, $SE_1 = 0.19$, $M_2 = 6.18$, $SE_2 = 0.34$; $t(438) = 6.78$, $p < 0.001$). Analysis of students' notes showed that rehearsing strategies ($f = 555$) were used more frequently than elaboration ($f = 415$) and organization strategies ($f = 357$). The correlation between deep strategies (elaboration and organization) and achievement on post-test ($r = 0.44$, $p < 0.001$) was significantly higher ($z(326) = 4.52$, $p < 0.001$) than the correlation between surface strategies and achievement ($r = 0.17$, $p < 0.01$). Compared to boys, girls took longer notes ($M_1 = 77,67$, $SE_1 = 5,19$, $M_2 = 123.34$, $SE_2 = 5.67$, $t(327) = 5.75$, $p < 0.001$), used more strategies ($M_1 = 3,02$, $SE1 = 0.18$, $M_2 = 4.79$, $SE_2 = 0.21$, $t(327) = 6.12$, $p < 0.001$), and achieved a higher score on the post-test ($M_1 = 7.45$, $SE_1 = 0.27$, $M_2 = 8.73$, $SE2 = 0.23$, $t(440) = 3.68$, $p < 0.001$). The results showed the importance of prompting the making of notes and use of higher order learning skills for successful learning in e-environment.

Keywords: digital text, learning strategies, note-taking, students, achievement

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Introduction

Different digital sources are increasingly used in the school environment. In the last 10 years, e-learning sources such as digital textbooks, interactive videos and various learning platforms for adaptive learning are being rapidly developed (Novak et al., 2018). Therefore, the aim of our study was to investigate how students approach learning when learning from digital text.

The use e-sources in learning provides relatively easy and quick access to the vast amount of information, involves a high degree of interactivity and adaptability, and offers the possibility of instant feedback on a person's learning progress (Embong et al., 2012). However, the main feature is its multimodality (Cope & Kalantzis, 2010), the possibility that different perceptual and cognitive systems are involved in the learning process. Research in this area indicates that the multimodal nature of learning, the integration of images and words, is more efficient than learning from simple text or traditional textbooks (Mayer, 2009).

Although learning from digital texts has many advantages, it also has some disadvantages (Kwan, 2001). Effective navigation through digital sources is more difficult than on paper (Wolf, 2008), especially with longer texts (Jabr, 2013). The so-called "tempting details" (i.e., interesting but irrelevant words or images (Grosman, 2011)) may draw the reader's attention in an undesirable direction. Therefore, it requires more attention and effort from the reader than learning from a textbook (Liu, 2005). Compared to paper sources, readers report higher levels of stress and fatigue (Wästund et al., 2005), and approach reading less seriously when using digital sources (Ackerman & Goldsmith, 2011), which potentially leads to lower achievement (Mangen, et al., 2013).

To overcome these disadvantages and achieve their learning goals when learning with digital sources, students need even more self-regulation than when learning with paper texts. They need to put in more effort, suppress distractions, direct their attention, and use different learning strategies. Thus, self-regulated learning involves cognitive, metacognitive, affective, and motivational processes. In our study, we focus on one part of self-regulation, namely the cognitive processes, and investigate the cognitive learning strategies students use when learning from digital text.

Cognitive learning theory with multimedia (Mayer, 2014) assumes that learning is optimal when the design of the multimedia unit considers the cognitive capacity of the students. It must minimize the processing of irrelevant information and maximize the important and generative processing of information. However, for optimal learning outcomes and overcoming disadvantages resulting from the complexity of digital sources, students need to activate two aspects of cognitive self-regulatory processes. On the one hand, they need to use cognitive processes for processing information and encoding it into long-term memory in a way that can be used later. They need various learning strategies to select, organize and integrate information meaningfully into their cognitive structure (Mayer &

Wittrock, 2006). On the other hand, students also need the metacognitive aspect of self-regulation, which is the awareness of their goals, cognitive processes, and their needs in the learning situation.

As Subramanian (2018, p. 864) states, "strategies are secret algorithms of learning" and they represent executive processes of selecting, adapting, and using different learning skills. The strategies a student uses depend on his learning goal, which can be memorization of learning content or its comprehension. For memorization, rehearsing an information in its original form may be sufficient; for meaningful learning, other strategies are necessary. Weinsten & Mayer (1986) proposed three cognitive strategies, namely, rehearsal, elaboration, and organization strategies. All these groups of strategies have a basic and a complex form. We have used their conceptualization of cognitive learning strategies as a framework for analysis in our research. Rehearsal strategies are used to store information in long-term memory without changing or transforming it. Elaboration strategies are used to integrate existing prior knowledge with new information. Organization strategies are used to sort and cluster the information based on the relationship that these new concepts have with other concepts. Elaboration and organization strategies are higher order strategies often associated with deep and meaningful learning (Mayer, 1996).

Research on the use of learning strategies showed moderate (for rehearsing strategies) to high (for elaboration and organization strategies) effects on student achievement (Hattie, 2009). One of the ways to use different strategies during learning is notetaking, which involves repeating, selecting, and integrating incoming information, thus promoting deep learning. Notetaking has been found to be a very effective approach to improve student achievement (Haghverdi et al., 2010; Subramanian, 2018). In addition to the effect on achievement, it is also important for research purposes as it is direct evidence of students' strategy use. Therefore, we decided to use notes taken during learning as a direct measure of students' cognitive learning strategies.

We were also interested in gender differences in learning from digital text. The differences between boys and girls were found in terms of learning strategies, mainly in favour of girls. Girls use all types of strategies more frequently, during and after reading (Ghiasvand, 2010; Pečjak & Košir, 2003), they show higher awareness of the importance of using cognitive learning strategies, especially elaboration, organization, and active forms of rehearsal (Tomec et al., 2006). They also write more relevant information in their notes, write faster (Reddington et al., 2015), and are better at summarizing the text they read (Kolić-Vehovec et al., 2008).

To summarize, in our study we focused on three research questions: 1) Which and how many cognitive learning strategies students used in learning from digital text? 2) What is the relationship between the strategies they used during learning and achievement? 3) Are there differences in the use of learning strategies in terms of their quantity and quality between boys and girls.

Method

Participants

The sample of our study consisted of 443 students (224 girls and 219 boys) of 9th grade from 15 primary schools in Slovenia. Their average age was 14.38 years ($SD = 0.40$). Out of 443 students, 329 students took notes.

Instruments and materials

E-unit on perception of colors: Students learned from interactive learning unit in the field of natural science. E-unit was based on a unit from digital textbook with the title "Chemistry 9: textbook for chemistry in the 9th grade of primary school" (Jamšek et al., 2014). The topic of unit is the perception of colors. E-unit was composed of 1073 words, with another 226 words in glossary, which was available for additional explanation of main concepts (electromagnetic waves, photons etc.). It was divided into six chapters: 1. Eyes and the perception of colors, 2. How a human being is perceiving colors, 3. Why are carrots well-recommended for good sight, 4. The solubility of β carotene, 5. How can we use the knowledge about the solubility in different solvents in real life, and 6. Vitamin A for healthy living. The chapters contained text, pictures (21), schemes (5), 1 video clip and 1 choice task, which served as a quick check-up of the understanding of the watched video clip. Interactive parts of e-unit were therefore: 1. Video clip showing solubility of β carotene in water and in hexane, which the students could stop and play according to their needs, 2. Choice task below video clip, which checked student's understanding of the video clip, and 3. The important terms they could click on to get more information from the additional glossary. Students progressed through the text by clicking to open individual chapters, video or terms in the glossary.

Perception of colors achievement test: Students' knowledge was assessed with the same achievement test (Boh et al., 2019) before and after learning. It contained five open ended questions (i.e., "Describe how the process of perceiving visual stimuli takes place?") and eight multiple-choice questions with five possible answers, the last of which was always "I don't know". Students' responses to open-ended questions were scored on a three-point scale: no answer or incorrect answer (0), partially correct answer (1) and correct answer (2). Two independent assessors evaluated all answers and resolved all the existing discrepancies. Cronbach's α reliability coefficient for post-test was 0,77.

The process of data collection

Data was collected as part of the project Effectiveness of different types of scaffolding in self-regulated e-learning (project number: J5-9437). Students for whom their parents gave informed consent participated in the study. They learned about colour perception individually on their own computers during their chemistry class. The researcher gave instructions and told the students that

they could take notes while learning. The students were given a sheet of paper to take notes on. When they were done learning, the notes were collected for further analysis. Students completed the pre-test about two weeks before learning from e-unit and took the post-test immediately after learning. The amount of time students invested in learning ranged from 5 to 55 minutes ($M = 30.75$, $SD = 8.60$).

Data analysis and coding scheme

Notes were then coded using a coding scheme developed based on Weinstein and Mayer's (1986) cognitive strategy model, which consists of three groups of strategies: rehearsal, elaboration, and organization. Each strategy has two subcategories, basic and complex. Following Marton and Säljö (1976), who suggested that rehearsal leads to surface learning, while the use of elaboration and organization leads to deep learning, we also formed two supercategories. Elaboration and organization strategies therefore represent supercategory of deep learning strategies (strategies for constructing and integrating knowledge), while rehearsal strategies represent supercategory of surface learning strategies (strategies for acquisition and memorization - lower order strategies).

Therefore, the final coding scheme consists of six categories on the <u>first level of coding</u>: 1) basic rehearsal strategies (writing down single concepts/words, "telegraphic" input), 2) complex rehearsal strategies (word-for-word transcription of a sentence or sentences), 3) basic elaboration strategies (forming a sentence linking two or more different concepts, associations, mnemonics, and answering questions), 4) complex elaboration strategies (paraphrasing, summarizing, analogies, and turning words into drawings), 5) basic organization strategies (grouping information based on common features but without a hierarchy), and 6) complex organization strategies (grouping information based on common features into a hierarchy or sequence of events); three categories on the <u>second level of coding</u>: 1) rehearsal strategies, 2) elaboration strategies and 3) organizational strategies; and two categories on the <u>third level of coding</u>: 1) surface strategies and 2) deep strategies.

Each strategy switch (change from one strategy to another) was coded as a separate strategy. Two coders independently coded 1/3 of the notes. The initial level of agreement between coders was 90.61% (Krippendorff's α = 0.87). Although it was high enough, the coders discussed the discrepancies and additionally adjusted certain coding criteria. After each coder coded the notes according to the agreed-upon criteria, the level of agreement was 98.46% (Krippendorff's α = 0.98). We also counted the number of words used in each note as a measure of the notes' length.

For statistical analysis, we used SPSS. After reviewing the data, we deleted missing values (less than 5%). We also checked all variables for normal distribution and calculated descriptive statistics. For the analysis of differences, we used the t-test when the assumptions for its use were met. When the assumptions were not met, the Mann-Whitney U test was used. For the analysis of differences in

the decision to take notes between genders, we used the χ2 test. We calculated Pearson's correlation coefficient (r) for the associations between learning achievement and different learning strategies and used Fisher's Z-transformation to determine the significance of the correlation differences.

Results

Learning strategies

Table 1 presents means, standard deviations, and frequencies of cognitive learning strategies at all coding levels. Out of 443 students, 329 took notes. The mean length of the notes was 103.76 words ($SD = 74.70$), and the average number of strategies used was 4.03 ($SD = 2.74$).

Table 1

Frequencies, average frequencies and standard deviations of cognitive learning strategies used by students.

Strategies			f	M	SD
Surface			555	1.50	1.00
	Rehearsal				
		Basic rehearsal	63	.21	.44
		Complex rehearsal	492	1.29	.95
Deep			772	1.52	1.61
	Elaboration		415	1.05	1.16
		Basic elaboration	59	.11	.34
		Complex elaboration	356	.94	1.09
	Organization		357	.47	.84
		Basic organization	195	.25	.56
		Complex organization	162	.22	.55

Students used deep strategies ($f = 772$) more often than surface strategies, with rehearsal ($f = 555$) being used separately more often compared to elaboration ($f = 415$) and organization ($f = 357$) strategies.

Correlations between learning strategies and achievement

On average, students scored 2.62 points ($SD = 2.09$) on the pre-test and 8.10 points ($SD = 3.69$) on the post-test. Students who took notes had significantly higher scores on the post-test ($M_1 = 8.78$, $SE_1 = 0.19$) than those who did not take notes ($M_2 = 6.18$, $SE_2 = 0.34$; $t(438) = 6.78$, $p < 0.001$).

The correlation between the number of strategies used and post-test score was 0.41 ($p < 0.001$), while the correlation between the length of notes and post-test score was slightly lower ($r = 0.25$, $p < 0.001$). The correlation between note length and number of strategies was 0.56, $p < 0.001$.

Table 2

Pearson's correlations and partial correlations between used cognitive learning strategies and post-test score

Strategies		Post-test score	
		r	partial r
Surface		.17**	.18**
	Rehearsal		
	Basic rehearsal	.08	.05
	Complex rehearsal	.14**	.16**
Deep		.44***	.39***
	Elaboration	.28***	.24***
	Basic elaboration	.10	.07
	Complex elaboration	.28***	.24***
	Organization	.41***	.38***
	Basic organization	.32***	.28***
	Complex organization	.35***	.33***

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. Partial correlations were controlled for the effect prior knowledge (pre-test score).

As shown in Table 2, there are no significant differences between the ordinary and partial correlation. The largest difference between the ordinary and partial correlation was found for the deep strategies although this difference was small and insignificant ($z(323) = 0.76$, $p > 0.05$). Therefore, we decided to use the absolute score (post-test score) instead of the relative one (post-test score controlled for the effect of prior knowledge) for interpretation.

The correlation between the deep strategies and the post-test score ($r = 0.44$, $p < 0.001$) was statistically significantly higher ($z(326) = 4.52$, $p < 0.001$) than the correlation between the surface strategies and the post-test ($r = 0.17$, $p < 0.01$). For surface strategies, only a low positve correlation was found between complex rehearsal and the post-test ($r = 0.14$, $p < 0.01$), whereas for deep strategies, moderate positive correlations were found between complex elaboration and the post-test ($r = 0.28$, $p < 0.001$), basic organization and the post-test ($r = 0.32$, $p < 0.001$), and complex organization and the post-test ($r = 0.35$, $p < 0.001$).

The differences between boys and girls

The X^2 test showed that there was a significant relationship between students' gender and the decision to take notes ($X^2 (1, N = 443) = 23.29$, $p = 0.000$). Girls ($N = 188$, 84.38%) were more likely to choose to take notes than boys ($N = 141$, 64.38%).

The *t*-test showed that girls took longer notes ($M_1 = 77,67$, $SE_1 = 5,19$, $M_2 = 123.34$, $SE_2 = 5.67$, $t(327) = 5.75$, $p < 0.001$), on average used more strategies ($M_1 = 3,02$, $SE1 = 0.18$, $M_2 = 4.79$, $SE_2 = 0.21$, $t(327) = 6.12$, $p < 0.001$), and scored higher on the post-test ($M_1 = 7.45$, $SE_1 = 0.27$, $M_2 = 8.73$, $SE2 = 0.23$, $t(440) = 3.68$, $p < 0.001$.

Table 3

Results of t-test for gender differences in average use of cognitive learning strategies at each level of coding

| Strategies | girls | | boys | | |
	M	SE	M	SE	t(327)
Surface	1.82	.10	1.50	.08	2.44*
Rehearsal					
Basic rehearsal	.18	.03	.21	.04	-.73
Complex rehearsal	1.65	.09	1.29	.08	2.80**
Deep	2.97	.16	1.52	.14	6.55***
Elaboration	1.42	.10	1.05	.10	2.64**
Basic elaboration	.23	.04	.11	.03	2.28*
Complex elaboration	1.19	.08	.94	.09	2.05*
Organization	1.55	.11	.47	.07	7.67***
Basic organization	.85	.07	.25	.05	6.34***
Complex organization	.70	.07	.22	.05	5.59***

Note. $* p < 0.05$, $** p < 0.01$, $*** p < 0.001$, $df = 327$. $N_{girls} = 188$, $N_{boys} = 141$.

All the significant differences between boys and girls in learning strategy use were in favour of girls (Table 3). These differences are somewhat smaller for surface strategies than for deep strategies.

Discussion

The use of learning strategies is an important mediator between the learner, his environment, and his learning achievement. In learning with digital texts, the use of learning strategies is even more important as digital environment can be disorienting compared to paper material (Jabr, 2013), learners are less serious about learning (Ackerman & Goldsmith, 2011), which means less concentration (Liu, 2005; Wästund et al., 2005) and a less successful learning process (Mangen et. al., 2013). Our study focuses on the use of learning strategies in learning with digital text.

The first research question of our study was which and how many strategies students use when learning from digital text. In the school context, an important strategy for achieving academic goals is note-taking (Haghverdi et al., 2010). Our findings showed that most students chose to take notes, indicating that they are aware of the usefulness of notetaking, including while learning with digital text. Students who took notes performed better on the tests than those who did not take notes, confirming the importance of notetaking in learning in the digital environment. By taking notes, students process the new information in a way that best suits their needs and existing cognitive structure (Ward & Tatsukawa, 2003), which can lead to better understanding of the new content and higher test scores (Haghverdi et al., 2010; Subramanian, 2018).

174

Students used rehearsal strategies more often than elaboration and organization strategies in their notes. The reason for this may be that the content they were learning about was completely new to them, so they focused primarily on memorizing the basic concepts. They used fewer organizational strategies, although when they did use them, these strategies often covered a wider range of content and therefore took more time than the memorization strategies. This may explain their lower numbers. Nevertheless, students used more deep strategies (organization and elaboration together) than surface strategies.

Our second research question was to determine the degree of correlation between the use of learning strategies and learning achievement. We found a moderate correlation between the number of strategies used and post-test score. Students who used more strategies were more likely to achieve higher test scores. This result is consistent with other research on the connection between the use of learning strategies and achievement (Hattie, 2009; Semperio, 2019; Subramanian, 2018). The correlation between note length and test score was weak, while the correlation between note length and number of strategies used was strong. This clearly shows that the longer the notes were, the more likely they were to contain more learning strategies, which is also reported by other authors (e.g., Peverly et al., 2007). However, longer notes do not necessarily mean higher achievement. For example, many students in our study made large organizational structures in their notes, which covered the most important concepts from e-unit. These, when counting the number of words to the determine the length of notes, weren't long, and indeed often included smaller number of strategies. Yet it's precisely the organizational strategies that were associated with the higher achievement the most. There were also student's notes that were especially long, yet mostly included rehearsal strategies, which had the weakest relationship with achievement.

Studies showed that organizing and elaborating strategies are higher-order strategies that are often associated with deep, meaningful learning (Mayer, 1996). We also found a higher association between deep strategies and test scores than between surface strategies and test scores. Most strategies were positively related to test scores, apart from Basic Elaboration and Basic Rehearsal. These might be more useful in learning isolated information, such as words in the foreign language or concepts in a particular order. We found the strongest correlation between the two organizational strategies (basic and complex) and the test score. Accordingly, the organizing strategies were the most useful for students learning about colour perception. When combined with the elaboration strategies, they were likely used to reorganize and reshape the information into a new, subjectively adapted knowledge structure that better matched their individual understanding (e.g., explaining the process of colour perception, explaining why we don't perceive colours in the dark).

Research has shown that girls are on average more academically successful than boys (Hočevar, 2014) and boys are more positive about learning in the digital environment (Liu & Huaung, 2007), so our aim was also to investigate the differences in the effectiveness of learning with digital text between boys and girls. We found a significant relationship between gender and notetaking; girls were more likely to

take notes than boys. This finding is congruent with several studies that found that girls are more likely to use learning strategies (Ghiasvand, 2010; Pečjak & Košir, 2003) and are more aware of their importance (Tomec et al., 2006). This metacognitive awareness of the importance of strategy use is likely to be the key component in their decision to use them and thus achieve higher achievement. Since girls' anxiety levels in the digital environment are higher than boys' (Cooper, 2006) and they feel less competent in this regard (Hargittai & Shafer, 2006; Tsai & Tsai, 2010), using learning strategies may also help them overcome their insecurities and lower their anxiety levels. Boys, on the other hand, because they are more confident and positive about digital sources, may find notetaking redundant.

Conclusions

We found an important relationship between the use of learning strategies and learning success in the e-environment, with this relationship being slightly stronger for deep strategies (elaboration and organization). We also found gender differences in learning with digital text, similar to those we find in the traditional environment. Thus, in the digital environment, it is important to help students, especially boys, recognize the usefulness of strategy use and help them learn how to use them, especially the deep learning strategies.

The advantage of our study is that it includes both a qualitative and a quantitative analysis of the relationship between learning strategies and learning achievement in learning with digital text. However, one of the main limitations is the lack of control for individual differences (e.g., motivation, anxiety level, time spent in learning, etc.) that could influence the learning process and the use of learning strategies. Furthermore, the use of additional online measures to observe cognitive self-regulatory processes (e.g., eye movements, etc.) and the think-aloud method would provide additional insights into the use of cognitive as well as metacognitive learning strategies.

Acknowledgements

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CLINICAL PSYCHOLOGY AND PSYCHOTHERAPY

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DIFFERENCES IN RECOGNITION OF FACIAL EMOTIONAL EXPRESSIONS BETWEEN BIPOLAR DISORDER, SCHIZOPHRENIA AND HEALTHY GROUPS

Abstract

Recognition of facial emotional expression is one of the main skills for efficient functioning in social situations. But schizophrenia (SZ) and bipolar disorder (BD) patients are facing some deteriorations in this skill. Aim of the current research was to explore differences in recognition of facial emotional expression between BD, SZ and healthy groups. Participants were 150 adults (18 till 65 years old) from Bosnia and Herzegovina, 50 of them were BD outpatients, 50 SZ outpatients and 50 healthy controls. Penn Emotion Recognition test (ER40, Kohler et al, 2004) were used.

Statistically significant differences were observed in recognition of facial expression of fear and no emotion between BD and healthy group and SZ outpatient and healthy group. Also differences in recognition of facial expression of fear were obtained when these groups were compared for mild and extreme facial emotion expression. The results of this research, the first of this kind in Bosnia and Herzegovina, confirmed some of the previous research findings by obtaining significant differences in recognition of emotionally neutral faces. When it comes to anger, statistically significant differences between the examined groups were not established, which brought new insight for future research

Keywords: Emotion recognition, facial expression, bipolar disorder, schizophrenia

Introduction

Recognition of facial emotional expressions is the skill of a person to acknowledge and differentiate emotions saw on other people's faces (Yalcin-Siedentopf, et al., 2014). It is considered to be one of the very important skills for successful social functioning. Deficits in this competency are connected to poor functioning in social situations (Erickson & Schulkin, 2003).

Deficits in acknowledge of different emotions, expressed on people faces, are very good established findings in patients with schizophrenia (SZ) (e.g., Lee, Hong, Shin, & Kwon, 2015) and also in bipolar disorder (BD) patients (e.g., Samamé, Martino, & Strejilevich, 2011). This is not a surprise if we take into consideration that both disorders are connected to different abnormalities in few brain regions,

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like the ventromedial prefrontal cortex. Those regions are important for abilities that are cognitive in their nature and which outcomes are expressed in social situations (Delvecchio, Sugranyes, & Frangou, 2012).

Many researchers were interested to investigate differences in recognition of emotion that are expressed on someone's face and impairment in schizophrenia patients, so studies results in this field have shown that SZ patients performance on facial emotion recognition tasks were worse when they were compared to healthy control subjects (Muzekari & Bates, 1977; Morrison, Bellack & Mueser, 1988). Also, emotion recognition deficits are believed to persevere beside the SZ acute phases and into periods of recovery and remission (Harvey, Patterson, Potter, Zhong, & Brecher, 2006), suggesting that there is a present feature of emotion recognition deficit in the SZ patients.

Problems in emotional expression in SZ patients have been found in the early portrayed of schizophrenia (Bleuler, 1911). Studies showed that SZ patients performed worse compared to patients with affective psychosis and healthy people or control participants, primarily in recognition of emotions of fear and sadness (Edwards, Pattison, Jackson, & Wales, 2001).

Those deficits in processing emotions can be caused by problems in mesial temporal brain regions. Those problems were observed in SZ patients and it was shown that they are important in recognition of fear emotion, which is impaired in SZ (Gur, et. al., 2000).

According to the research conducted by Kohler, et. al. (2003) SZ patients performed worse compared to the control participants on acknowledge all fundamental emotions and neutral faces. This also included variations of mild and extreme facial emotional expressions. When the focus was on the individual emotions, SZ patients showed more problems and they had worse performance in recognition of fear, disgust, and no emotional expressions. Also for all emotions that were researched, except disgust, extreme intensity facial expressions were better recognized than mild intensity emotions expressions.

Impairment in the same field was also noted in bipolar disorder (BD) (Kohler, Hoffman, Eastman, Healey, & Moberg 2011). Some studies (Summers, Papadopoulou, Bruno, Cipolotti, & Ron 2006) pointed out that deficits in BD emotion recognition can be just for some emotions, like anger, but usually more generalized deficits in emotion recognition have been found in research like one conducted by Derntl and colleagues (2009). Results of studies conducted about facial emotion recognition performance in BD outpatients showed great distinctions. So Yurgelun-Todd et al. (2000) research results showed that there were no deficits in acknowledge of happiness, but they observed wantage in fear recognition. On the other side, Venn, et. al. (2004) reported no impairment in recognition of facial emotions in the BD outpatients. Beside this, other study (Harmer, Grayson, & Goodwin, 2002) showed increased receptivity that was observed in BD outpatients in the recognition of disgust. But in research conducted by Kim, et. al. (2016) BD patients expressed impairments in recognition of disgust, anger, fearful and no emotions faces compared to healthy groups.

However, there is also a gap in agreement about whether the severity of symptoms in BD patients has an influence on facial emotion recognition. Results of some of the research show no correlation (Venn et al., 2004), but on the other side, there are studies in which researchers observed negative correlations between manic symptoms in BD patients and their recognition of negative emotions (Harmer, Grayson, & Goodwin, 2002). Besides this Gray, et. al. (2006) notified about negative correlations between receptivity in recognizing happiness and depressive symptoms and on the other side about positive correlations between depressive symptoms and recognition of sadness.

Few studies that deliberated to compare SZ and BD patients show higher facial emotion processing deficits in SZ than BD (Goghari & Sponheim, 2013). According to a study conducted by Yalcin-Siedentopf, et. al. (2014) compared to healthy groups, SZ patients showed deficits in the recognition of the following expressions: angry, disgust, sadness and happiness, on the other side patients with BD diagnoses showed deficits just in disgust and happy facial expressions recognitions.

Besides few studies that are conducted in order to investigate the difference in this skill comparing SZ and BD patients (e.g. Goghari & Sponheim, 2013), the majority of the studies are focused either on bipolar disorder (e.g. Kohler, Hoffman, Eastman, Healey, & Moberg 2011) or on schizophrenia (e. g. Lee, Hong, Shin, & Kwon, 2015). So there is still a gap in studies that are focusing on comparing SZ and BD patients groups between themselves and with healthy groups. Also, a majority of previously mentioned studies were conducted with inpatients and not including outpatients. Lastly best to our knowledge in Bosnia and Hercegovina, this kind of study was not conducted.

The aim of the current research was to explore differences in recognition of facial emotional expression between bipolar disorder, schizophrenia and healthy groups.

Methods

Sample and procedures

In the present study, participants were 150 adults age range from 18 to 65 years from Bosnia and Herzegovina. From the total number of participants, 50 were bipolar disorder outpatients, 50 schizophrenia outpatients and 50 healthy controls.

Variables	Groups		
	SZ	BD	healthy
N	50	50	50
Mean age (SD)	43.7 (4.72)	45.6 (5.43)	34.5 (4.21)
Gender			
Female	29	23	27
Male	21	27	23
Place of living N(%)			
Urban area	28 (56%)	31 (62%)	38 (76%)
Rural area	22 (44%)	19 (38%)	12 (24%)
Marital status N(%)			
Single	17 (34%)	15 (30%)	18 (36%)
Living with the partner	2 (4%)	1 (2%)	6 (12%)
Married	17 (34%)	17 (34%)	19 (38%)
Divorced	8 (16%)	10 (20%)	7 (14%)
Widow	6 (12%)	7 (14%)	0 (0%)
Education N(%)			
Elementary school	15 (30%)	14 (28%)	4 (8%)
Secondary school	25 (50%)	26 (52%)	23 (46%)
Bachelor degree	7 (14%)	8 (16%)	15 (30%)
Master degree	3 (6%)	2 (4%)	5 (10%)
PhD	0 (0%)	0 (0%)	3 (6%)
Employment status N(%)			
Part time employed	11 (22%)	10 (20%)	10 (20%)
Full time employed	9 (18%)	8 (16%)	24 (48%)
Unemployed	23 (46%)	24 (48%)	16 (32%)
Retired	7 (14%)	8 (16%)	0 (0%)
Income level N(%)			
Low	24 (48%)	22 (44%)	12 (24%)
Middle	18 (36%)	22 (44%)	25 (50%)
High	8 (16%)	6 (12%)	13 (26%)

Outpatients were recruited from Psychiatry Clinic, Clinical Canter University of Sarajevo, Bosnia and Herzegovina. All outpatients have been diagnosed with SZ or BD disorder by the Diagnostic and Statistical Manual of Mental Disorders V (DSM-V) and healthy groups were recruited from a healthy population without a diagnosis of BD or SZ and without a family history of same or other psychiatry disorders. This study was approved by the local ethic committee and participants' written informed consent was collected.

Firstly, all participants were asked to read and sign an informed consent and then those participants were evaluated using the Structured Clinical Interview for DSM-5 (SCID-5) to confirm their diagnoses or absence of diagnoses in the

case of healthy control participants.   As next step participants were asked to fill demographic information form questionnaire that was designed for purpose of this study. Finally, facial emotion recognition was measured by asking all participants to individually take part in (ER40).

Instruments

SCID-5 is a semi-structured interview guide that is usually used together with DSM-5 as a supplement in confirmation of the diagnoses (APA, 2013).

Penn Emotion Recognition Test (ER40) is used to evaluate recognition of facial expressions of emotion (Kohler, Turner, Gur, & Gur, 2004). A version of the ER40 used in this research includes 40 photos (in color) of stationary faces expressing happy, sad, anger, fear, and neutral expressions. There were eight neutral faces and also for each of four observed emotions there were also eight faces. Besides this half of them were mild and another half was extreme emotional expressions. Also, those color photographs were balanced for actor gender and ethnicity and they included 21 white and 19 non-white faces.

Each correct answer was scored as 1 point and incorrect one was scored as 0 point. According to this, the highest total score was 40 and the lowest was 0. Also, higher scores refer to better recognition of emotional expressions. Besides this individual subscale scores were also taken into consideration for all emotions that were studied. Here the highest score for each subscale was 8 points and the lowest was 0 points (Gur, et. al., 2002). Also, in the current study scores for mild and extreme emotion expression were calculated for each observed emotional expression.

Data were analyzed and results were obtained using IBM SPSS Statistics for Windows, Version 25.0.

Results

Test results on emotion recognition from three groups (BD outpatients, SZ outpatients, and healthy group) were compared and analyses of variance (ANOVA) were conducted, accompanied with Fisher's Least Significant Difference (LSD) post-hoc test that was set at $p<.05$ significant level.

First, three participant groups were compared on total emotion recognition scores (see Table 2.), then they were compared on mild (see Table 3.) and extreme (see Table 4.) emotions recognition scores.

Table 2

ANOVA and post-hoc test results for total emotions recognition scores

	ANOVA						Post-hoc test (p-values)		
	SZ	BD	Healthy				BDvsH	SZvsH	BDvsSZ
Emotions	M(SD)	M(SD)	M(SD)	F	df	p			
Happiness	7.74(0.60)	7.62(1.01)	7.82(0.63)	0.86	2,15	.426	.132	.328	.105
Sadness	6.38(1.35)	6.26(1.54)	6.66(1.17)	1.14	2,15	.324	.237	.356	.261
Anger	4.50(1.37)	4.22(1.21)	4.72(1.13)	2.05	2,15	.132	.616	.241	.477
Fear	4.90(1.92)	5.02(1.53)	6.16(1.17)	9.81	2,15	.000***	.003**	.004**	.151
No emotion	5.58(2.28)	5.40(2.38)	6.48(1.59)	3.75	2,15	.026*	.012*	.017*	.613

Note. SZ-schizophrenia outpatients, BD-bipolar disorder outpatients, H-healthy group

*p<.05; ** p<.01; ***p<.001

In Table 2 results of the total emotion recognition scores were presented for each observed emotion. As it can be seen that highest mean score on measurement of each emotion was observed in the healthy group. In the SZ outpatient group means of four (happiness, sadness, anger and, no emotion) out of five accuracy of emotion expressions recognition were higher compared to the BD group. Overall between group ANOVA results showed statistically significant differences in recognition of fear (F(2,15) = 9.81, p<.001) and no emotion (F(2,15) = 3.74, p <.01). But significant differences were not observed for happiness, sadness and anger.

When BD (M=5.02, SD=1.53) and healthy group (M=6.16, SD=1.17) were compared in post-hoc test statistically significant differences (p<.01) were found in emotion recognition of fear. Also, between BD (M=5.40, SD=2.38) and the healthy group (M=6.48, SD=1.59) statistically significant differences (p<.05) were observed in case of no emotion.

When SZ (M=4.90, SD=1.92) and healthy group (M=6.16, SD=1.17) were compared, statistically significant differences were observed in recognition of fear (p<.01), also between SZ (M=5.58, SD=2.28) and healthy group (M=6.48, SD=1.59) significant difference were observed on the no emotion (p<.05).

But when BD and SZ groups were compared, no statistically significant differences in recognition of any of the five observed emotions were obtained.

Table 3

ANOVA and post-hoc test results for mild emotions recognition scores

Emotions-mild	ANOVA						Post-hoc test (p-values)		
	SZ	BD	Healthy				BDvsH	SZvsH	BDvsSZ
	M(SD)	M(SD)	M(SD)	F	df	p			
Happiness	6.94(0.82)	6.82(1.21)	7.54(0.83)	0.75	2,15	0.563	0.042	0.295	0.119
Sadness	5.88(1.45)	5.86(1.43)	6.56(1.18)	1.05	2,15	0.428	0.117	0.478	0.371
Anger	4.33(1.38)	4.12(1.32)	4.62(1.43)	2.15	2,15	0.156	0.546	0.341	0.587
Fear	4.68(1.82)	4.92(1.67)	6.11(1.07)	8.72	2,15	0.000**	0.002**	0.003**	0.243

Note. SZ-schizophrenia outpatients, BD-bipolar disorder outpatients, H-healthy group;

*p<.05; ** p<.01; ***p<.001

In the Table 3 results of the mild emotions recognition scores were presented for each observed emotion. As it can be seen the highest mean score on measurement of each mild emotion recognition was observed in the healthy group. Also between group ANOVA results showed statistically significant differences in recognition of mild expression of fear (F(2, 15) = 8.72, p<.001).

Then when BD (M=4.92, SD=1.67) and healthy group (M=6.11, SD=1.07) were compared statistically significant differences were found in recognition of mild expression fear (p<.01).

Also, when SZ (M=4.68, SD=1.82) and healthy group (M=6.11, SD=1.07) were compared significant differences were found in mild emotion recognition of fear (p<.01).

But when BD and SZ groups were compared, no statistically significant differences were found in recognition of any of the five mild emotions that were observed.

Table 4

ANOVA and post-hoc test results for extreme emotions recognition scores

Emotions-extreme	ANOVA						Post-hoc test (p-values)		
	SZ	BD	Healthy				BDvsH	SZvsH	BDvsSZ
	M(SD)	M(SD)	M(SD)	F	df	p			
Happiness	7.34(0.71)	7.22(1.11)	7.68(0.73)	0.65	2,15	.354	.157	.398	.254
Sadness	6.13(1.40)	6.06(1.49)	6.61(1.17)	1.29	2,15	.438	.134	.387	.578
Anger	4.42(1.38)	4.17(1.27)	4.68(1.28)	2.35	2,15	.198	.646	.351	.653
Fear	4.79(1.87)	4.97(1.60)	6.14(1.12)	8.81	2,15	.000**	.006**	.004**	.312

Note. SZ-schizophrenia outpatients, BD-bipolar disorder outpatients, H-healthy group

*p<.05; ** p<.01; ***p<.001

In Table 4 results of the extreme emotion recognition scores were presented for each observed emotion. The highest mean score on measurement of each extreme emotion was observed in the healthy group. Overall between group ANOVA results showed significant differences in recognition of fear ($F_{(2, 147)}$ = 8.81, $p < .001$).

When BD (M=4.97, SD=1.60) and healthy group (M=6.14, SD=1.12) were compared statistically significant differences were found in recognition of extreme expression of fear ($p < .01$).

Besides this when SZ (M=4.79, SD=1.87) and healthy group (M=6.14, SD=1.12) were compared significant differences were found in recognition of extreme expression of fear ($p < .01$).

However, when BD and SZ groups were compared, no statistically significant differences on any of the five extreme emotion recognition were observed.

Discussion

In the research conducted by Ruocco, et. al. (2014) healthy groups compared to SZ and BD patients showed significant deficits in emotion recognition, in particular in the case of neutral and angry faces. Besides this in the same research it was found that fearful, happy and sad faces were better recognized by BD patients compared to SZ patients.

Results of the current research partly confirm previously mentioned research results and found statistically significant differences for neutral or no emotion faces, but in recognition of the angry faces statistically significant differences were not found. Also in the current research there were statistically significant difference for recognition of fearful faces, which was not the case in the previously mentioned research. But Kohler, et. al. (2003) found significant differences in emotion recognition of all basic emotions, including fear and in the current research impairment in fear recognition were confirmed but differences were not found for happiness, sadness and anger. Also, some other research (Penn, et. al., 2000) suggested that individuals with SZ and BD are impaired in their ability to recognize the facial emotion expression of others and that this deficit can be more expressed in the acute compared to patients in remission. Because in the current study impairment was found just for fear and no emotion and it was conducted with outpatients which were in the remitted phase of their illness this can be part of the explanation why slightly different results were obtained compared to previous research (Ruocco, et. al., 2014).

Besides this when SZ and BD groups were compared statistically significant differences were not found for any of the observed emotions. Also, when attention is paid to the mean scores, higher mean scores, which means better recognition of emotions, were observed in SZ compared to the BD group. This is contrary to previous research (Ruocco, et. al., 2014) because it was found that BD patients

perform better when they were compared to SZ patients.

However, results of the research that included healthy participants showed consistently in emotional recognition of happiness, which is the most easily identified emotion, even at low levels of intensity (Hess, Blairy, & Kleck, 1997). In the current research, it was found that mean scores for happiness were the highest in all three observed groups which are in the line with previous research. Another research (Kohler, Turner, Gur, & Gur, 2004) suggest that after happiness most accurately recognized were neutral expressions, then fear, sadness, anger, and lastly disgust expressions. In the current research according to mean results after happiness, most accurately were recognized sadness, no emotion, fear and lastly anger.

Also, according to Kohler, et. al. (2004) recognition of extreme intensity of emotion expressions for all emotions, except disgust, was better compared to the mild intensity emotions expression. In the current research higher mean scores were observed in all three groups in extreme emotional expression (see Table 4) compared to mild emotions expressions (see Table 3). Also in both mild and extreme emotion expression conditions statistically significant differences were found for fear when SZ and healthy and BD and healthy groups were compared.

However few limitations should be taken into consideration while trying to interpret the results of this study. All possible emotional expressions were not investigated and the focus was just on basic emotions that were already quite extensively studied in patients with psychiatry disorders. So, for example disgust as an emotion was not examined and in some previous research (e.g. Harmer, Grayson, & Goodwin, 2002) statistically significant differences were observed in disgust when healthy and SZ and BD patients groups were compared. Besides this SZ and BD outpatients included in this study may not be quite representative participants for further generalization, because they voluntarily accepted to take part in the research and come to the hospital. Also detailed diagnoses, course of the illness and medication that they are currently taking were not analyzed. Lastly, location on which research was conducted was the hospital which may have an influence on the results and for the future research it should be considered to conduct it in the different location.

Conclusions

According to the study results, two out of three hypotheses that were set were partly confirmed. So statistically significant differences in emotional recognition of facial expressions between bipolar disorder outpatients and healthy group and between schizophrenia outpatients and healthy group were found. These differences were observed just in the case of two (fear and no emotion) out of five expressions (happiness, sadness, anger, fear and no emotion). These results were partly in the line with previous studies (e.g. Ruocco, et. al., 2014), but not completely because differences were not found for happiness, sadness and anger.

On the other side, statistically significant differences in emotional recognition of facial expressions between bipolar disorder and schizophrenia outpatients were not found. This gives new insight for future research.

When the focus was on the intensity of emotion expression statistically significant differences in fear were observed in both mild and extreme emotional expression between SZ and healthy group and BD and healthy group.

Also at the same time, it should be noted that his study had some methodological limitations because not all emotions were observed, and there is a question about the representativeness of the sample and the effect of the hospital as a location in which the study was conducted.

Lastly, this was a preliminary study that was for the first time conducted in Bosnia and Herzegovina and it open some questions for future research.

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PSYCHOANALYSIS AND ABERRANT FORMS OF PROSODY

Abstract

The psychotherapeutic situation is predominantly a dialogical relation, a speech event. In an analytic situation, the psychoanalyst is faced with a complex interplay between sound (prosody) and meaning of analysand's discourse. In the case of psychoses and primitive mental organisations, the damaged (or malformated) capacity for simbolization (and mentalization) results in a specific appearance of aberrant prosody into the individual's discourse. The speech of borderline patients, as Kristeva notices, is full of acoustic (prosodic) elements. It reveals the process of collapsing of the signifier, its desemantization, "to the point of reverberating only as notes, music" which need to be (thanks to the therapeutic action) built into the language code. In some cases, it would be right to believe that the patient is (with the prosody of his speech) attacking (Bion would say) the analysts' ability to make a link. In the case of primitively organized and psychotic patients, the stability of the function of the poetic and semiotic in his language is been eluded by its aberrant prosody. Thus, when it comes to primitive mental organizations, the aberrant prosody (which in terms of development is adopted before semantics and syntax) predominantly serves to evacuate inner tension not mediated through language. The Kleinian school would call it the evacuation of beta elements.

Key words: aberant prosody, orality, therapeutic situation

Oral discourse in psychoterapeutic situation
and the aberant prosody

The psychoanalytic situation is a speech relation, a speech event. In the psychoanalytic situation, the therapist is, inevitably, exposed to a complex interplay between meaning and sound. Not rarely, performative effects of language are also involved. Words can actually do an action. Through abstract linguistic units (words), the subject produces a concrete effect, which situates the performative at the intersection between the symbolic and concrete.

Speech implies sound, that is, voice. Sound, says Jakobson, is inseparable from meaning – every linguistic sign is a unity of sound and meaning, or in other words, of signifier (sound-sensory image) and signified (the concept it signifies).

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This close union between sound and meaning is created by means of the phoneme. The phoneme, a linguistic entity without conceptual content and its own meaning, is a tool which serves to establish meaning (Jakobson, 1977).

Developmentally, sound acquisition precedes the acquisition of semantics and syntax. Exposure to speech in a particular environment triggers memory traces that have acoustic characteristics of the native language (Kuhl, 2000, 2001). A memory trace, according to Jevremović, is something presented, mentalised. "What it is primarily about is a (in fact, always mental or mentalised) reality of a (group and individual) subjectivity in statu nascendi. Re-presentation rests on the verbalisation of that which was initially mentalised (Jevremović, 2013, p. 43).

To say something about something presupposes a stable order of re-presentation, that is, stable distinction between the signifier and the signified. Destabilization of the order of re-presentation could potentially bring sound into play. In the case of primitive mental organisations, the collapse of the symbolic function can lead to the intrusion of the acoustic into the speech of an individual. Often, aberrant forms of prosody are at play. Or, the evacuation of unsymbolised material (beta elements), as the Kleinian school would say. This material (mostly) has no meaning but can have an effect on the recipient.

Psychoanalysis and primitive mental states

Psychotherapy is a talking cure. In his metapsychological and other works, Freud will (mainly drawing on his experience in working with neurotic patients) establish a theoretical foundation that makes possible the psychotherapeutic practice itself. The interpretation of the phenomena of normal life (dreams and parapraxes) and the neurotic symptom is possible because the unconscious, by its nature, is semiotic. It is structured like a language, as Lacan would say. In order to eliminate the neurotic symptom, it is necessary to connect the thing-presentation with the word-presentation.

Freud was not insensitive to the difference in semiotic status of dream and psychotic phenomena. In his texts The Unconscious and Metapsychological Supplement to the Theory of Dreams, he discerns the differences between the dream-work and the utterances of schizophrenic patients (Freud, 1917a, 1917 b). Dream implies topographic regression, schizophrenia does not. The meaning of a dream, unlike schizophrenic neologisms, can be established through interpretation, that is, by relating word-presentations to thing-presentations. As De Saussure would say, by relating the signifier to the signified.

Freud (besides this insight) did not develop a coherent theory of speech and thought in psychotic patients. Hence the absence of a more elaborate story about the pre-narrative, the pre-linguistic[29]. About those psychic contents which, being

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[29] Freud did not have a developed theory of psychose. He explained psychotic phenomena by neurotic mechanisms. His text on Schreber demonstrates that this is the case. Cf. Jevremović P. (2019). Skotom. [Scotoma]*Hermeneutički triptih.*Beograd: Gramatik, and Vulević G. (2016). *Razvojna*

beyond the signifier, are not subject to repression and therefore not subject to interpretation either.

Freud lacked a theory of psychoticism, which Melanie Klein will later develop, in her own distinctive manner. More or less integrated parts of the personality, according to Klein, could simultaneously co-exist with more primitive, psychotic ones. She says: "My experience has showed that full integration is never achieved, but the closer the subject gets to it, the greater his insight into his anxieties and drives, the stronger his character and the greater his mental balance."(Klein, 1977, p. 274).Psychoticism is thus an inherent dimension of subjectivity.

Neither Freud nor Melanie Klein had a theory of lacunae in mentalisation work. It should be added, they did not even have complete theories of mentalisation. Lacunae are places of raw, mentally unmediated tension. Lacunae are (figuratively speaking) gaps in mentalisation. Psychotic phenomena such as insanity and hallucinations, are thinkable and relatively analysable. Lacuna is unthinkable. It is characterized by a specific (certainly not hysterical) mutism. Lacuna is the birthplace of alexithymia. Lacuna is what lies behind autistic disorders and primitive somatizations (Jevremović, 2007).

The theory of the coexistence of the normal and the psychotic in the order of subjectivity must be supplemented with a theory of the simultaneous coexistence of the re-presented, the present (psychotic) and the unmentalised. The speech of the subject of analytic experience will largely be determined by the functionality of the alpha and beta functions.

I will use a clinical vignette to illustrate this.

Clinical vignette

Marija's father had long suffered from leukaemia (over fifteen years). His condition would worsen and improve over the years, so Marija hoped that he would eventually defeat the disease. Although he was fading away day by day and his death was imminent, it nevertheless surprised Marija. She felt the news of his death as a blow. She did not cry. She did not feel sorrow. All she felt was what she described as a *tense emptiness*. She hoped that she would cry at her father's funeral and that tears would bring her relief. That did not happen. There was no relief for that unbearable state of *tense emptiness*. She thought that unnamed thing caused a rash on her skin. It was a severe rash.

It was a serious tension that could not be named and therefore could not be evacuated, a tension that implodes into the body and gives rise to primitive somatisations. The *tense emptiness* is a *lacuna* in mentalisation.

psihopatologija. [*Developmental Psychopathology*] Novi Sad: Akademska knjiga, pp. 111-134. A germ of a theory of psychotic mechanisms is found in Freud's paper *The Loss of Reality in Neurosis and Psychosis.* In it, Freud states that the mechanism of disavowal *(Verleungen)* of reality is something specific to psychoses: "Neurosis does not disavow *(Verleungen)* the reality, it only ignores it; psychosis disavows it *(Verleungen)* and tries to replace it. (Freud, 1924, p. 185).

Over time (although she still could not feel sadness or cry), Marija's *tense emptiness* became more bearable. Gradually, the *lacunae* were filled with mentally *mediated material*. The raw tension (*tense emptiness*) was at this stage presented through sound. Marija's voice (otherwise clear and well-modulated) *became fainter*. Whatever she was talking about, she spoke in a low, barely audible voice. The prosody of her speech did not match the sound of a lament. Her speech was a speech of a dying person. If we were to stick to Freud's theory, we would say that Marija identified with the lost object.

Grieving is based on the experience of inaccessibility (otherness, loss) of an object. By identifying with the lost object, the person (potentially always pathologically) *makes the absent present*. In this way, the loss is *denied*. Therefore, the possibility of verbal articulation of grief for the lost object is abolished.

The poetic of sorrow and the acoustic

Greek tragedians, according to Segal, drew on the function of song in an oral culture as the ritualized expression of pain. "By absorbing the cries of grief into lyricism of choral lament, the tragic poet is able to identify the emotional experience of suffering with musical and rhythmic impulse of choral dance and song...Tragedy's transformation of cries of woe into song constitutes at least part of the creative power of the *poietes* (poet-as-maker) and of his divinity, the Muse. Pindar is perhaps aware of this process when he relates how the wail for the dying Medusa is transformed by Athena into the flute song performed at musical competitions. (*Pythian* 12) (Segal, 1993, p. 16)".

Tragic poetry, through aestheticization of pain, aims to produce *terpsis*, or pleasure. This paradox, Segal says, extends the Homeric paradox of "joy in lament" not only because it gives it a new intensity (especially in its choral lyric), but also because the tragic Muse is present in it in the form of negated *music*." All three tragedians use the rhetorical figure of negated song (unmusic singing, lyreless Muse, unchorused dance, or the like) to express these paradoxical relations between art, beauty, ritual, and tragic suffering. These oxymora call attention to the fact that joyful songs and dances being performed have as their goal the representation of joylessness. They thus point to the fruitful tension between the mythical threats of the disorder in self, city, and world enacted on the stage and order-enhancing celebration of community inherent in the civic performance itself (Segal, 1993, p. 17)".

Euripides, continues Segal, is particularly fond of the figure of negated song. In *The Trojan Women*, Hecuba lamenting for lost Troy, the death of her husband and children, calls her lament a *joyless song*, a *song for those in misfortune*.

"Ah me, ah me! What lament is there that I cannot utter, unlucky woman that I am? My country is gone, my children, my husband! Great pride of my ancestors, now cut short, how slight a thing you were after all! What should I wrap in silence,

what should I not wrap in silence? (What should I lament?) How luckless I am, how miserably my body recline, my back stretched out on its hard bed. Alas for the temples of my head and for my sides! How I long to roll my back and spine about, listing now to this side of my body, now to that, as I utter continually my tearful song of woe! This too is the music for those in misfortune, to utter aloud their joyless troubles (119-121)."[30]

The cry becomes *the music for the unfortunate*. With such music, the joy of dance is *impossible. Hecuba does not dance*. Instead of a dance, *stretching of the body* takes place. Repetitive movements like *rocking*. Battezzato says on this: "Instead of a dance, Hecuba now longs to twist her back and spine 'on both sides of her limbs, in endless tearful laments'. She complains of the 'Music' that sings of a *joyless* trouble; a paradoxical music, because the troubles do not know the joy of dance'. The aristocratic muse of her past is now replaced by monotonous music of sorrow (Battezzato, 2005, p. 9).

By this transformation of cry into music, the potentially unarticulated voice becomes *organised*. And thereby – *aestheticized* as well. And as such, lament pacifies (at least partially) the disorganisation of self and the socium caused by the loss and brings relief from pain.

The lament is addressed to the (lost) *Other*. It is the (poeticised) cry of *someone for someone*. The lament implies a stably maintained order of re-presentation, the difference between subject and object, signifier and signified.

The acoustic, pre-narrative penetrates the lament. The effects of the lament come from the interplay of meaning and sound. The poet *intentionally* uses rhythm and melody to produce a certain effect.

The destabilization of the order of re-presentation, as has been indicated before, potentially brings *aberrant forms of prosody* into play. In the case of the mentioned patient, narcissistic identifications produce a specific *sound*. Her voice is *dying down*. Beyond any reflexive intentionality, the state of her *external* (and internal) objects is *presented* through prosody. It is a specific *mimesis*–their demise, loss of life, is presented through sound.

Melancholia, mentalisation and language

Freud says that narcissistic identifications with a lost, ambivalently invested object play a key role in the psychodynamics of melancholia. In the case of melancholia, the shadow of the object falls upon the ego. Hence the tension between the ego and the ego-ideal. Reproach (self-reproach) initially directed at the lost objects is now re-directed by the ego-ideal to the ego instance.

Freud's theory of narcissism is characterized by vagueness analogous to the vagueness of his theory of psychosis. As Jevremović rightly remarks: "At least

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[30] Euripides's verses are quoted according to Kovac' s translaton. Cf. Eurpides. *Trojan women, Iphigenia among Taurians, Ion*. Ed. and transl. Davic Kovacs London: Harvard University Press, 1999.

197

in principle, any neurotic distortion of meaning (even with the inevitable delay) is subject to interpretation. More precisely, to the analytic procedure. On the other hand, the mirror state of narcissistic investment, which is developmentally constituted beyond the Oedipal structure, irreversibly abolishes the possibility of commonly accepted understanding (and interpretation) of mental disorder (Jevremović, 2019 a, p. 70). In the case of narcissistic identifications, the psychodynamics of the symptoms are different.

In melancholia (as Lacan would say) we find the dialectic between the narcissistic and the symbolic (Lacan, 1993). The ability of a subject to convey his relation to his own self via language indicates that he is situated in the symbolic order. Self-reproaches as well as hysteric's question are situated in the place of the Other[31].

The mentioned patient does not suffer from melancholia. In her case, the loss of a loved one leads to the destabilization of the inner container, and thus to the (temporary, partial) collapse of mentalisation and symbolisation functions. The period of tense emptiness (a lacuna in mentalisation), as has been said before, was followed by the mediation of the internal content through sound. This progress did not occur as a result of the withdrawal of cathexis from the lost object, but as a result of the increased capacity for mentalisation. Soon, it became possible for her to symbolise her inner state. The patient begins to dream about water. In these recurring dreams, there was water overflowing from jugs, taps from which water flew uncontrollably, flooded bathrooms. These dreams, in terms of their function, are analogous to lamentation. Through an image, it was possible to evacuate and (potentially) communicate the suffering caused by the loss of an object.

As Melanie Klein would put it, Marija arrived at the depressive position.

Mourning, destruction and the effects of speech

The ability to endure loss (especially the traumatically excessive one) rests on the capacities necessary for overcoming destruction available to the subject. My patient (Maria), as we have seen, was painfully overwhelmed by devastating destruction. A destruction in its most concrete (somatic, symbolised and unmentalised) form. In her case, the loss did not intensify depressive anxieties. It triggered persecutory fears - fears of annihilation. The fear of annihilation arising from the death instinct does not result in the feeling of sadness but in the feeling of horror. It is the feeling of horror that led to the collapse of her inner container.

Thereafter, the tension is mentalised and evacuated by means of sound. Based on the prosodic characteristics and effects of her speech, through which, as has been noted earlier, she presented the state of her objects, and her identification with them, an insight into the psychodynamics of her phantasies could be gained.

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[31] For more on hysteric's questions cf. Lacan J. (1993). *Psychoses.The Seminar of Jacques Lacan.* Ed.Jacques-Alain Miller. New York: W.W. Norton & Company.

Identification with the lost objects stems from the need to negate the loss. In that situation the testing of reality is (at least temporarily) compromised. In Freud's opinion, reality testing plays an important role in the process of mourning. In his paper Mourning and Melancholia, Freud says: „In mourning time is needed for the command of reality testing to be carried out in detail, and that when this work has been accomplished the ego will have succeeded in freeing its libido from the lost object" (Freud, 1917 c, p. 252, italics mine). In the same paper, discussing reality testing and the economics of pain, Freud further says: "Each single one of the memories and expectations in which the libido is bound to the object is brought up and hypercathected, and detachment of the libido is accomplished in in respect to it. Why this compromise by which the command of reality is carried out piecemeal should be so extraordinary painful is not at all easy to explain in terms of economics. It is remarkable that this painful unpleasure is taken as a matter of course by us (Freud, 1917 c, p. 245).

Melanie Klein, building upon Freud's observations from Mourning and Melancholia, developed her distinctive approach to this matter. According to Klein, during the depressive position, the child, having internalised his whole objects (which Klein thought are felt by the child as living beings within his own body), fears that he has destroyed or will destroy them by his aggression. His internal world and the objects it contain are not capable of being directly perceived by him. The doubts and fears that arise as a result of this, prompt the child to increasingly rely on his perception of the external objects in order to know his internal world, which originates from the external world. The visible mother, thus, continuously points to the characteristics of the internal mother, her anger, tenderness or vengefulness. The degree to which external reality can diminish anxieties relating to internal reality is an indicator of normal development.

With her father's death, Marija's destructive phantasies coincided with reality. Her feeling that she had hurt her objects, and that they were injured, dying or dead, was confirmed. By denying her loss, she also denied her own destruction. Only her voice betrayed her feeling of deadness of her inner world.

Conclusion

What follows from all the above, is a clearly important conclusion for clinical practice: in working with fragile unstable structures that are in a state of acute stress, it can be observed, in addition to the preserved ability to symbolise, that there are contents that escape from the symbolic order. These contents can be presented through sound, so it is important to move away from the content of free associations as the most important starting point for interpretation and focus on the prosodic effects. Analysts of the Kleinian school would say that interpretations that rely on free associations alone would not lead to progress in the analysis, because they would only deal with those better integrated, mature parts of the

patient's personality. Analysts are expected to carefully observe and interpret their countertransference reaction, and to verbally articulate the content of the material that patients project onto them.

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FUNCTION OF THE DREAM IN AUTOBIOGRAPHICAL NARRATIVES OF ADOLESCENTS

Abstract

Adolescence is a time of continuity and change. Processes of identity organization are reflected in construction of an Autobiographical narrative with distinct features of a Life Story (Habermas & Bluck, 2000). Adolescents acquire mastery in keeping a coherent view for themselves and in integrating past, present and future dimensions of their personal time. The present work is aimed at revealing the function and place of the Dream (Levinson et al., 1978) in adolescents' life narratives. Semi-structured interviews were conducted using the method of Habermas and de Silveira (2008). Two theoretically derived functions of the Dream (defensive and motivational) were formulated and operationalized in rating criteria. A sample consists of of 48 adolescents, age 15-19 (M=16.41, SD=1.08). Defense mechanisms and mentalization were assessed using Bulgarian versions of Defense Style Questionnaire and Reflective Functioning Questionnaire (Hancheva, 2010, 2017). Interviews with 28 participants were transcribed verbatim, analyzed and rated for causal and thematic coherence. Contents and function of the Dream were coded by two independent researchers. Correlations were found between causal coherence and motivational function of the Dream (r=.379, p <.05) and a tendency for negative connection to defensive function. There were no significant differences in results of boys and girls, but life events like parental divorce and domestic violence resulted in tendency for defensive hypermentalization and lower thematic coherence.

Key words: life narrative, dream, defense mechanisms, mentalization

Introduction

Adolescence is the period of a person's life between childhood and adulthood. It is an intense time of many changes and opportunities. Adolescents need to adapt to physiological, cognitive, psychological, and social changes. There is a necessity of having the skills to integrate the new acquisitions within the existing structure of the Self. According to developmental theories of Erik Erikson (1968), Daniel

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Levinson (Levinson, Darrow, Klein, & Levinson, 1978) and Charlotte Buchler (Buchler, & Massarik, 1968) the main task of adolescents is to acquire mastery in keeping a coherent view of themselves by integrating past, present and future dimensions of individual life time. Dan McAdams (1996) believes that when dealing with this complicated task adolescents start to create a story in which they narrate important events in accordance with their values, conscious and unconscious believes. These life stories help young people to create a better understanding of themselves and to present a desirable image in front of others. Habermas and his colleagues (Habermas, Ehlert-Lerche, & de Silveira, 2009) invented a methodology to reveal the process of integration of different experiences into a coherent story. Habermas and de Silvera (2008) formulate four different aspects of the global coherence in every story – causal, temporal, thematic and cultural. In the present study only indicators for causal and for thematic coherence are used. Causal coherence refers to "how actions and changes in personality are caused and motivated by biographical experience" (Habermas & de Silvera, 2008, p. 709). Thematic coherence refers to the listener's "orientation as to which are the dominant thematic strands in the life. Dominant themes create coherence through repetition of and variation on the same theme again and again" (Habermas & de Silvera, 2008, p.710). Achievement of coherence in the narrative presupposes certain level of cognitive and self-reflection (mentalization) skills. Mentalization is the act of hypothetical, imaginative (mostly preconscious) mental activity for interpretation of human behaviors and experiences (including one's own) in terms of intentional mental states (e.g. needs, desires, feelings, beliefs, goals, purposes, and reasons) (Fonagy, Gergely, Jurist, & Target, 2002).

The main research interest is to reveal the interconnectedness of conscious (memories, causal reasoning) and preconscious (defense mechanisms, Dream) processes in construction of personal future projects and integration of future dimension into present life narrative. Personal Dream is a concept introduced by Levinson and col. (1978) and defined as "a vague sense of self in the adult world, of the kind of life one wants to lead as an adult. It has the quality of a vision, an imagined possibility that generates excitement and vitality" (p. 91). It was theoretically derived that Dreams may have two functions - motivational and/or defensive. The motivational function is related more to goal construction and goals are viewed as motivating forces giving certain energy and direction to personal acts. Defensive function is a form of compensation and it is related to the use of defensive mechanisms (such as autistic fantasy), as described in psychoanalytic literature (Freud, 1937). Defensive mechanisms are unconscious psychological strategies that reduce anxiety arising from unacceptable or potentially harmful stimuli. To explore defensive mechanisms in their relation of the Dream we used later conceptualizations of Anna Freud's distinction of defences - mature, immature and neurotic (Bond, 1986).

The purpose of the present study is to reveal factors (socio-demographic and early experiences), processes, and mechanisms of identity construction as defined in psychodynamic literature.

First, we explore the thematic contents of the Dream and its correspondence to the age-related developmental tasks. The formation of the Dream as a projection of oneself in the future is an essential process of the anticipatory socialization and self-regulation of personal development. Additionally, motivational versus defensive function of the Dream are examined as dynamic aspects in the preconscious and unconscious process of identity formation.

Second, we assess qualities of life narrative (namely causal and thematic coherence) as indirect markers of identity consolidation.

Finally, in order to shed light on self-regulatory mechanisms (as the core of adaptive functioning) we measure: 1) the levels of defense strategies (neurotic, immature, and mature), 2) capacity for social-relational and self-reflection (mentalization).

Our first hypothesis is that the thematic contents of life narrative and the Dream should reflect important age-related tasks as significant personal relations and vocational aspirations.

Hypothesis 2: Causal coherence of adolescents' stories will correlate: a) positively with the motivational function of the Dream, b) negatively with the defensive function of the Dream, and c) positively with mature defenses.

Hypothesis 3: Thematic coherence will correlate positively with: a) mature defense mechanisms, b) motivational function of the Dream, and c) high mentalizing capacity (balanced towards certainty).

Hypothesis 4: It is expected that socio-demographics and challenging experiences (parental divorce, violence, loss etc.) affect: a) causal and thematic coherence of life narrative, b) levels of mentalization, and c) defensive functioning.

Method

Sample

The total number of participants in the study is 48. They are students from a high-school in Sofia, Bulgaria, aged 15-19 (M=16.41, SD=1.08). Girls are 62.5 % of the sample.

Procedure

The study was conducted in two stages. In the first stage all 48 students completed two self-report questionnaires. Additionally, information about socio-demographics and adverse/traumatic experience was gathered. In the second stage, all participants were invited for an individual semi-structured interview (Habermas methodology see above), and 28 of them responded. Adolescents had some difficulties in pointing out seven important events. Some of them (54%) tried to negotiate the number of events. However, everyone managed to conclude the task. The most popular strategy (50%) to start the life narrative is speaking about the first thing which was written on the cards. Only 20% of

adolescent started with introducing their names. There is a small percent (14%) of students who constructed a beginning sentence which gave a general idea of what their lives were ("My life is very interesting indeed. I had many obstacles in it and this taught me to be stronger and to not give up whatever happens."). Putting an end to the life story was also difficult for the study participants. In most of the cases, they said something about the last important event and added phrase like "And that is it". Only two students used some common wisdom or moral as ending of the story ("It's just that life is way too beautiful, and we should not be mad at it, even thought that there are some awful things that happen. We should get back on our feet and keep going").

Instruments

The Bulgarian adaptations of the Defense Style Questionnaire (DSQ, Hancheva, 2010) and the Reflective Functioning Questionnaire (Fonagy et al., 2016) were used. The Bulgarian version of DSQ contains three factor structure – mature ($α=0.61$), neurotic ($α=0.57$) and immature ($α=0.71$) defenses. Bulgarian version of RFQ follows the original two-dimensional structure: RFQ-C ($α=0.57$) – reflecting the certainty in perceptions of mental states (both observed and experienced), and RFQ-U ($α=0.71$) – the uncertainty of one's own perceptions of mental life.

The interview takes place in two parts. The first involves completing the task of pointing out seven most important life events (Habermas & de Silvera, 2008). The participants are instructed to think about seven important events that had happened to them and to write them down. Then they have to arrange the events in chronological order and tell a story about who they are by including these seven important events. Their stories are transcribed verbatim, analyzed and rated by two independent raters (first and second author) for causal and thematic coherence.

To assess causal and thematic coherence we use the indicators of coherence provided by Habermas and de Silvera (Habermas & de Silvera, 2008). Then we created an additional rating system from 0 to 3 to evaluate how complex and representative every preposition for thematic and causal coherence was (see table 1).

Table 1
The rating system for coherent and thematic coherence

Value	Criterion	Example
	Causal coherence	
0	there is no causal connection	-
1	there is general causal connection	"Hm.. they help me to grow and to become who I am now."

2	there are causal connections and reflections	"But now I think that .. I won't… I mean I learned my lesson and now I can think about things better and I know what I am doing.. I wasn't like that before. Back then I thought after I had already done something."
3	there are causal connections, moving forces, developmental aspects	"My parents got divorced. I guess this was the worst, because I was a young kid and I didn't accept the situation very well. I felt bad and in that time a lot of things changed in my life"
	Thematic coherence	
0	there is no connection	
1	there are implicit connections	"I thought that he was like me, that he is good and he won't do anything to hurt me."
2	there are some connections with some level of probability	"And I came back here (in the school). May be this was one of the good things, because most of the teachers already knew me, my sister studied here also."
3	there are many connections with some level of probability	"All of a sudden it turned out that he and his friends were making fun of me. He was showing our private chats to his friends. I think that this experience made me incredulous. Until today it is hard for me to open up about my feelings and trust to someone, especially if it is a boy."

The second part of the interview was focused on the content and origin of adolescents' Dream. Participants were asked questions like: "What do you dream about?""How long have you dreamt about it?", "Was there something or someone who influenced your Dreams?""Have you done anything to achieve your Dream?".

In order to differentiate the function of the Dream in personal life narrative a content analysis scheme has been developed, consisting of two broad coding categories – motivational and defensive function. Two independent coders rated each Dream for motivational/defensive function on a 4-point scale (0 – no formulation to 3 – elaborated statement) (see table 2).

Table 2

Rating system for motivational and defensive function of the dreams

Values	Criterion	Example
	Motivational function of the dream	
0	no dream	-
1	general idea of a dream	„ I want to have a normal life."
2	a specific dream	„ Yes, I have. I was thinking many times about this. I want to have my own club."
3	a specific dream and actions taken toward achieving it	„ when I was around 4-5 grade a dream was created. I am still following the same dream and I have not given up on it.… yes I am doing some things."
	Defensive function of the dream	
0	no defensive function	„Yes, I have. I was thinking many times about this. I want to have my own club."

1	there is a defensive function and its connected with experience of some relative	„I want to work in the field of social work… actually my sister has this education, but she didn't continue to develop. And maybe I want to become what she wanted to be"
2	there is a defensive function which is connected with own experience	„One day I want to have lots of money, and when I enter a shop, and this is really my dream, I want to just take whatever I want without looking for its price tag… once I was with my friend in a shop. We were about to buy something together and we had to gather all that we had together to buy it and then I started to think about this dream.…"
3	there is a defensive function and its connected with traumatic experience	„For love, nothing else. Actually, the absence of my parents, it's absence of love…"

Results

A number of statistical procedures for data processing are performed in order to test the set hypotheses.

A content analysis is performed in order to extract quantitative data from the interview. The content analysis of life narratives of the participants reveals several common topics. The most important events for them are relationships with their friends (for 75% from the sample), with their parents (71%), with their intimate partners (36%), with other relatives (32%), and with siblings (28%). Half of them (54%) included a story about school. Hobbies are important also for 50% of them. Large percent of them (43%) said that an important event is the loss of someone. Part of adolescents (10%) described experiences with religion and another part (10%) with having a pet (see figure 1).
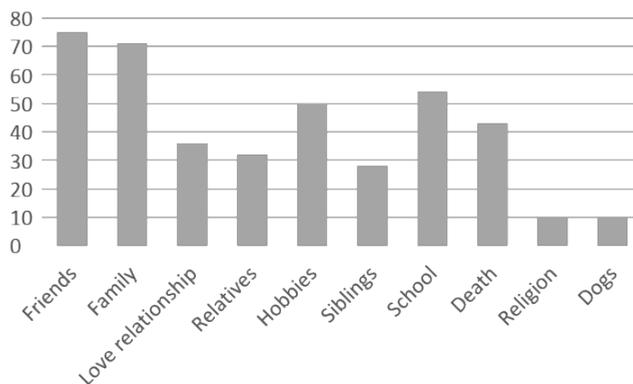

Figure 1. *Frequency of life narrative topics (in %)*

The content analysis of adolescent Dreams elicit ten thematic categories: *Future occupation, Education, Love status, Specific interest, General idea, Abroad,*

Relatives, Independence, Material status, Travelling (see figure 2). *Future occupation* (35%) and *Education* (23%) had the largest relative shares. Some of the answers classified in the *Future occupations* category are answers like: "I want to be teacher", "policeman", "to have my own business", but also answers like: "I want to have a good job". For the *Education* category there are more specific answers like "I want to study psychology", "I want to study about Japanese culture in Japan", and less specific ones like "I want to finish school", "I want to study at university". Ten percent of the Dreams are in the *Romantic status* category (e.g. "I want to be with my girlfriend","I want to be alone, not in a relationship"). The *General ideas* category has a small share - around 6%. The answers in it sound like: "I want "normal life", "to be happy", "to be chill", "not losing hope". In the *Specific interest* category, (6%) there are diverse responses, from: "I want to have others like me who will understand me, this can happen in YouTube, so I want to be successful in it""realization of my poems", to "my parents to buy me a cavalier (dog)". Another category with a small share (5%) is the *Abroad* category. Some statements include negative formulations "I don't want to live here (Bulgaria)", others – concrete locations "I may start learning German and I will go to Germany". There are responses like "I want everyone around me to be in good health", "I want to separate myself from my relatives". These responses are 5 % of the total 82 formulations of Dreams and are reffered as *Relatives.* Only 4 % of the Dreams are about material things (*Matherial status*) like "money, house", "lots of money, so I can buy without looking for price tags in the shops". Another 4 % are about *Independence* (e.g. "to be free", " to do whatever I want instead of what I was told to do"). The category with the smallest share (2%) is *Travelling* (e.g. "I want to travel the world", "I want to go to Russia").
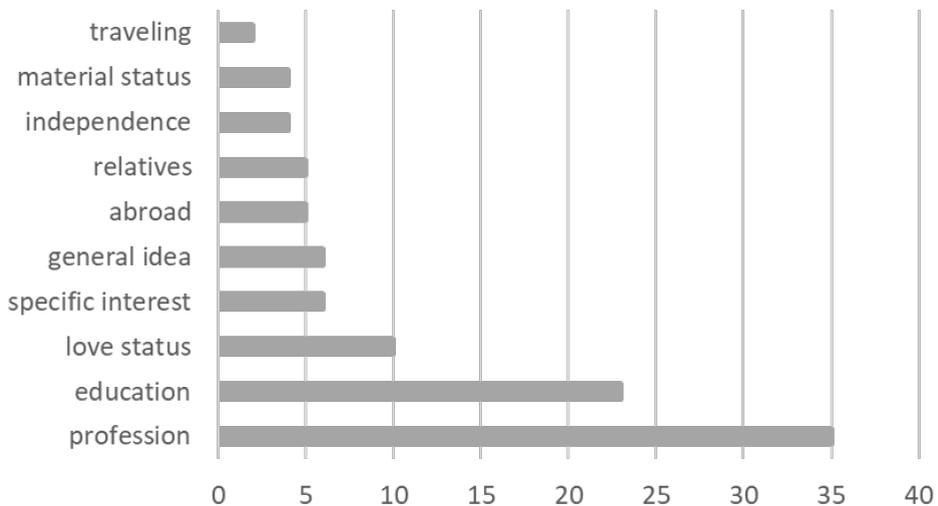

Figure 2. *Thematic categories of adolescents' Dreams (in %)*

The Dreams of the participants are coded and quantified by assessing the two factors defensive function of the Dream (DFD) and motivational function of

the Dream (MFD) on a 4-point scale (0-3). The largest number of participants (20) are assessed with a high degree of MFD and a low degree of DFD. The next largest group is that of participants who have a high degree of MFD and a high degree of DFD. Their number is 7. The Dream of one participant received low marks on the MFD scale and high on the DFD scale. There is no participant that has low scores on both scales (see Table 1).

Table 1

Distribution on motivational and defensive function of the Dream

high MFD low DFD	high MFD high DFD
(20)	(7)
low MFD low DFD	low MFD high DFD
(0)	(1)

There are also some additional findings about adolescents' Dreams. One third of the participants shared that they are inspired to dream by something, which they had seen in the media (mostly movies and interviews with celebrities on YouTube). Some of them (57%) shared that they had support from the members of their families and friends in elaborating their Dream. Almost half of them (46%) remembered a particular moment when they have started to formulate their Dreams. Some of them claimed to have had their Dreams since they were 10 years old (38%), the rest 62% reportrd to have formulated their Dreams after the age of 13. It is interesting that 32% of participants know exactly what is needed in order to fulfill their Dream (e.g. "I have been waiting so long, I just need to wait a couple of months").

A correlation analysis (Spearman method) for causal coherence, thematic coherence, neurotic defenses, immature defenses, mature defenses, motivational function of the Dream, defensive function of the Dream, mentalization level is performed (see table 3).

Positive significant correlation between causal and thematic coherence was found ($r = 0.487$, $p < 0.01$). A moderate positive correlation is found between causal coherence and motivational function of the Dream ($r = 0.379$, $p < 0.05$). There is no statistically significant correlation between causal coherence and defensive function of the Dream ($r = -0.081$, $p = 0.68$). The correlation between causal coherence and mature defenses is positive, but not significant ($r=0.382$, $p=0.113$).

There is no statistically significant correlation between thematic coherence and mature defense mechanisms ($r = - 0.072$, $p = 0.768$), and between thematic coherence and the motivational function of the Dream ($r=-0,055$, $p=0,783$). The correlation between thematic coherence and certainty scale of mentalization is negative and significant ($r = -0,386$, $p = 0,05$).

Table 3
Correlational matrix

	CC	TC	MD	ND	ID	DFD	MFD	SM	UM
Causal coherence (CC)	r=1	r=,487** p=,009	r=,375 p=,113	r=,382 p=,088	r=,027 p=,917	r=-,081 p=,680	r=0,379* p=0,046	r=-,186 p=,363	r=,161 p=,431
Thematic coherence (TC)		r=1,000	r=-, 072 p=,768	r=,175 p=,449	r=,158 p=,545	r=,287 p=,138	r=-,055 p=783	r=-386 p=,051	r=,201 p=,324
Mature defenses (MD)			r=1,000	r = , 554** p=0,001	r=,186 p=,333	r=,263 p=277	r=,179 p=,462	r=-,327 p=,055	r=,182 p=,312
Neurotic defenses (ND)				r=1,000	r=,208 p=,298	r=-,082 p=,725	r=,195 p=,396	r=-,342 p=,038	r=,174 p=,309
Immature defenses (ID)					r=1,000	r=,195 p=,452	r=-,277 p=,282	r=-,259 p=,168	r=,074 p=,708
Defensive function of Dream (DFD)						r=1,000	r=-,345 p=,072	r=-,134 p=,513	r=,275 p=,174
Motivational function of Dream (MFD)							r=1,000	r=-,225 p=,269	r=-,022 p=,914
Certain mentalization (SM)								r=1,000	r = -,515** p=,000
Uncertain mentalization (UM)									r=1,000

A t-test for independent samples is performed to check whether gender would affect the results of any of the variables - causal and thematic coherence,

defensive and motivational function of the Dream, mature, immature and neurotic defenses. The null hypothesis for all variables is confirmed, except for the mature defense mechanisms (t (34) = - 3, 127, p = 0,004). Boys have statistically significant higher scores on this variable (X = 6.48, SD = 0.90) than girls (X = 5.25, SD = 1.27).

ANOVA one-factor analyzes are performed to check the impact of challenging experiences (parental divorce, violence or loss of loved ones) on narrative coherence, on level of mentalization, and defensive functions. Many of the participants (61%) reported that they had experienced loss of a relative or a friend, one third of them are children of divorced parents, and 27.1% had experienced or observed violence. Participants who have experienced parental divorce have statistically significantly higher scores (X = 1.10, SD = 0.79) on the certainty scale of mentalization than those of intact families (X = 0.60, SD = 0.48), F (1.40) = 6.553, p = 0.014. The impact of other events is not statistically significant on any other variable in the present study.

Discussion

The focus of the study is on the qualities of life narrative and the Dream content & function in the process of identity construction and mature functioning in the face of normative and non-normative challenges. The results confirm the main hypothesis that age-appropriate tasks are predominant and importance of significant others is present in past, present and future accounts. Afforisticlly formulated measure of mental health and maturity in psychoanalytic literature – "to love and to work" – has been derived from personal narratives of adolescents (Erikson, 1963).

The fact that 28 participants have formulated a total of 82 Personal Dreams reveals that the processing of dreaming is highly relevant to them. In according to Levinson's description for this sample the Dream has more motivational than defensive function. It is in high relevance to their current activities and it is inspired by socializing agents in their cultural context (e.g. social media influencers and adult role models). In the present study Personal Dreams of Bulgarian adolescents are divided into ten categories. The categories with the largest relative share concern their education and professional realization. These particular findings are in accord with Levinson's and colleagues' conceptualization of the transition to adulthood (Levinson et al., 1978). The choises of carrer and education are key components of the emerging life structure. The components perform an important function of bridging personal asspirations and normative cultural conceptions of "successful" adulthood. Similar results come from earlier study on Bulgarian emerging adults (21-24 years) (Hristova, 2002). In Hristova's research the interest in the occupational self-determination, immediate and long-term educational tasks, and cognitive mastery keep stable and central position in motivational hierarchy of future time perspective, regardless of historical and societal changes. Our results confirm the

importance of Personal Dream in self-regulation and identity construction. The Dream keeps both the main content (education, vocation, relations) and function (motivational) in subsequent generations of adolescents. We could conclude that development from adolescence to adulthood includes inevitably interaction of individual strivings with societal standards. Cultural prototypes and paths to adulthood, despite of their pluralism, keep the same core of values – "to love and to work".

Overall, the results show that participants are able to create a life story that includes moments from their past, present and desired future. Most of them are capable of constructing and presenting life narratives with a good structure, but in most of the stories, this structure is still rudimental. This reflects the expected qualities of the narrative representative for certain level of identity formation, which has already begun, but is still far from completion. However, their enthusiastic sharing of experiences, openness and willingness to participate reveal other age-specific processes and needs. The Effect of auditorium and Personal fable (Elkind & Bowen, 1979) is representative of a need for a social mirroring, a considered listener – someone confirming their perception and construction of themselves.

The second hypothesis is partially confirmed. The ability to make causal inferences in construction of life narrative is connected to the goal-oriented quality of the Dream (thus supporting hypothesis 2a). Causal coherence tends to be associated with the use of more mature defense mechanisms, providing evidence for developmental advances in cognitive and emotional functioning (hypothesis 2c). Defensive functioning of the Dream is rarely independently identified in the answers of the participants (only in one) and is not statistically related to the causal coherence.

Thematic coherence is reflecting main topics in life which are supposed to be highly personalized and unique. The lack of correlation between thematic coherence and both mature defense mechanisms and motivational function of the Dream (hypotheses 3a/b) might be explainained by the turbulence of adolescency period. Stivings for diverse experiences and oftentimes – testing of limits, are incongruent with focus on reduced number of themes. Higher thematic coherence is associated with lower levels of certainty in one's reflective capacity (mentalization). The result is in contradiction with hypothesis 3c, further theoretical conceptualization and research of the processe of mentalization is needed.

In regard of the fourth hypothesis, there are no greater diversity in socio-demographic variables. All participants are the same age, live in the capital city, study in the same public school and are of a similar socio-economic background. Theoretically based gender differences are expected in the process of construction of life narrative but in-group variances are also huge, especially in smaller samples. A statistically significant difference is found between boys and girls in their scores on mature defense mechanisms. These results might be explained by the fact that boys endure more social pressure to be efficient and they internalize these

expectations. Another possible explanation might be related to methodology – the defense mechanisms are unconscious strategies but when measured with self-report instruments there is a tendency the results to be biased towards social desirability.

Children of divorced parents demonstrate elevated levels of certainty in mentalization. Certainty in mentalization is usually considered an adaptive characteristic but only when appropriately balanced with understanding of opacity of mental states – e.g reasonable levels of doubts. When certainty is overemphasized it is a marker of desadaptive tendency of highly sophisticated reasoning with no relevance to the applied strategies of adaptation. One possible explanation of the abovementioned result is connected to this peculiarity – named hypermentalization (Fonagy et al., 2002). Parental divorce as a potentially traumatic and challenging experience provokes a need to control or at least create a plausible understanding of the situation. In this context, development of intellectualized explanations (high certainty in mentalization) might alievate anxiety but does not serve the purpose of engagement in reality.

them to create explanations for themselves which help them cope with stress and restore calm. This scale, however, measures hypermentalization, which suggests that this approach is not effective.

Conclusion

The stydy design combines qualitative and quantitative methods, providing opportunity for an in-depth understanding of psychological processes with preconscious nature and thus revealing the function of personal meaning construction in identity formation and its future projections in the Dream. The prevailing contents of the Dream reflect the anticipatory positioning in the adult world. Education and occupational domains are perceived as a "high-way" for achievement of desired socially approved adult status and recognition. Significant others and human bonds are a salient topic pointing out the relational nature of human identity.

Limitations of the study include the cross-sectional design, and the small sample size. A bigger sample and more socio-demographically diverse participants are needed. Futher development of the adapted instruments and longitudinal design are to be planned.

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INDIVIDUAL DIFFERENCES

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THE ROLE OF PERSONALITY TRAITS IN PREDICTION OF GENERATIVITY

Abstract

According to E. Erikson (1980) *generativity* can be defined as creating, guiding and taking care of the next generation. This study investigates whether the five-factor (FF) personality traits predict generativity, while accounting for the impact of the demographic factors. The sample comprises 217 Bulgarian participants aged 16-65 years. They filled out The Mini IPIP FF model personality scale (Karabeliova, Petrov, Milanov & Ivanova, 2016) and *The Loyola Generativity Scale* (LGS, McAdams & de St. Aubin, 1992). Two-steps hierarchical regression analysis was used to create predictions for generativity. Socio-demographics entered model 1 ($F_{(4, 207)}$ = 9.225, $p < .001$, $R^2 = .151$) where *marital status* ($\beta = .229$, $p < .01$) and *education* ($\beta = .187$, $p < .01$) proved to be significant predictive factors. FF traits were added to Model 2 ($F_{(9, 202)}$ = 13.689, $p < .001$), $R^2 = .379$) where *Extraversion* ($\beta = .295$; $p < .001$), *Agreeableness* ($\beta = .233$; $p < .001$), *Intellect/Imagination* ($\beta = .149$; $p < .01$) and *Conscientiousness* ($\beta = .147$; $p < .05$) contributed and explained most of the variance ($\Delta R^2 = .228$) than demographics alone. Findings are in line with earlier studies and provide insights into the range of socio-demographic and personality factors which shape the context and the potential for generativity

Key words: generativity, generative concern, personality traits

Introduction

One of the aspects of being actively and productively included in society is through being generative. The idea of *generativity* was introduced by Erik Erikson in his psychosocial theory of identity development through the life cycle (Erikson, 1950). It postulates that human life consists of 8 stages, each represented by a critical conflict between two contrary dispositions. The adaptive stage outcome, named *basic virtue or basic psychosocial strength, reveals* the balance achieved between the two opposing developmental forces.

The stage of *generativity versus stagnation* is situated approximately between 40 and 65 years of age, i.e., in the middle adulthood. According to Erikson, generativity can be defined as "primarily the concern in establishing

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and guiding the next generation" (Erikson, 1950, p. 267). Although the parent is a prototypical figure of the generative adult, generativity includes any form of productivity, intended to create something of lasting worth in benefit of others and society (Erikson, 1968). Besides caring for one's own offspring, generativity could be expressed through being a leader, a teacher, a mentor, a volunteer, or in more general terms - by creating something that would outlast you (McAdams, 2013).

The disposition contrary to generativity is *stagnation*. It consists of self-absorption, caring for no one, not having desire to be an active member of society or to create something with intention to benefit others.

Basic stage virtue – *care* is an indicator for successfully resolution of the conflict *generativity versus stagnation* and it is an adaptive prerequisite for all the further development.

Enriching and elaborating Eriksonian construct of generativity into a multi-facet model, McAdams and de St Aubin (1992) differentiate seven features of generativity: 1) *Cultural demand*, 2) *Inner desire*, 3) *Concern*, 4) *Belief in the worthiness of human life*, 5) *Commitment*, 6) *Action* and 7) *Narration* (McAdams & de St Aubin, 1992). They believe cultural demand about age-appropriate behavior and inner desire to be needed and attain symbolic immortality promote the concern for the next generation. This concern combined with having a belief in the goodness of human kind may lead to commitment to promote the development and well-being of future generation. Taking action may be directly driven by cultural demands or inner desire but, according to McAdams and de St Aubin, "…the most personally efficacious, psychologically fulfilling, and socially valuable behavioral expressions of generativity are often the products of the adult's reasoned commitments to generative endeavors and goals." (McAdams & de St Aubin, 1992, p. 680). Generative narration integrates all these and is expressed by the way in which the adult narrates and integrates his/her generative projects and endeavors into a self-defining life story.

As Erikson postulated it, generativity is mostly attributed to middle-aged people. Empirical studies revealed that it may appear earlier. Recently, a cross-sectional study of adolescents and young adults showed that generative concern may be present before middle age when identity and intimacy are already established (Lawford, Astrologo, Ramey & Linden-Andersen, 2020). The age-related tendency depends on how generativity is measured and "a substantial evidence suggests that a wide variation in generativity scores can be found in any age cohort among adults from late-adolescence to old age" (McAdams, 2006. p. 83). As a multifaceted developmental task, it may be influenced and nuanced by diverse contextual factors.

When it comes to generativity though, it is crucial to gain a more understanding of the relationship it may have with personality and examine which are the traits that predict higher levels of generative concern. Personality traits are often examined via the five-factor model of personality (McCrae & Costa,

1987) which consists of the traits *Intellect/Imagination* (also called *Openness)*, *Conscientiousness*, *Extraversion*, *Agreeableness* and *Neuroticism*. The association of generativity with these traits is an issue that has been of persistent research interest. For example, a study, conducted by Cox et al. showed that generativity correlates strongly and positively with *Extraversion* and *Intellect/Imagination*. Results also revealed a positive correlation with *Conscientiousness* and a negative one with *Neuroticism* (Cox, Wilt, Olson & McAdams, 2010). In a study of de St Aubin and McAdams, the authors found a positive relationship between generative concern, life satisfaction and overall happiness. Furthermore, their research indicated a significant relation to *Extraversion*, *Intellect/Imagination*, *Agreeableness* and *Emotional stability* (Aubin & McAdams, 1995). Peterson et al. also identified a positive correlation between generativity and *Intellect/Imagination* (Peterson, Smirles & Wentworth, 1997). Ten years later, Peterson and Duncan found that: generativity was positively associated with *Extraversion*, *Agreeableness* and *Intellect/Imagination* and negatively – with *Neuroticism* (Peterson & Duncan, 2007). More recently, a longitudinal study identified a significant effect of *Extraversion*, *Conscientiousness* and *Intellect/Imagination* on generativity (Blatný, Millová, Jelínek, & Romaňáková, 2019).

The current study aims to contribute to the investigation of the relationship between generativity and personality traits. Specifically, we have decided to broaden the perspective by including certain socio-demographic variables as possible contextual predictors. *Marital status* is of particular interest. Thus, a study by Peterson and Duncan showed that generativity plays a predictive role on satisfaction with marriage. The more generative persons are, the more satisfied they will be with their marriage (Peterson & Duncan, 2007). These findings are also supported by a research done by Snarey et al. who found that highly generative men were more likely to be satisfied with their marriage, rather than divorced or not satisfied (Snarey, Son, Kuehne, Hauser & Vaillant, 1987). On the base of these findings, it is interesting to examine the opposite direction, i.e., whether being married predicts generativity.

As to *educational level*, older and newer studies highlight its relationship and positive effect on generativity (e.g., Becchetti & Bellucci, 2021; Hofer, Busch, Au, Poláčková Šolcová, Tavel & Tsien Wong, 2014; McAdams & de StAubin, 1998; Muñoz-Rodríguez, González & Navarro, 2019). In particular, a study of Keyes and Ryff showed that respondents with 12 or more years of education expressed more concern for other's well-being than those with less education (Keyes, Ryff as cited by McAdams & de St. Aubin, 1998).

The current study

The purpose of our study is to examine how personality trait dimensions predict generative concern, while accounting for the effect of socio-demographic factors.

On the base of earlier studies mentioned above, we hypothesize that:

1. Among socio-demographic factors, *marital status* and *educational level* are significant predictors of generative concern;
2. We expect that personality traits, except for *Neuroticism* (a trait associated with negative experiences and desadaptive behaviors), will contribute statistically significantly to the explanation of the variance of generative concern above and beyond the effect of the demographics alone.

Method

Participants

The research included 217 Bulgarian citizens, aged 16 - 65 years (M = 33.64, SD = 13.28). 70% were women, 30% - men. Regarding marital status, 53% of the respondents were not married, 47% were married. 34% had a high school diploma, 34% had a bachelor's degree and 32% had either a MD or a PhD. 54% do not have children, and 46% had at least one child. Regarding occupation, 56% of the participants were working full-time, 44% were students. As to residence, 67% of the respondents were resident of the capital of Bulgaria (the city of Sofia), 14% - of a village, 11% - of a big city, and 8% - of a small town.

Measures

Personality: To assess personality traits, we adopted the five-factor model (McCrae, & Costa, 1987). In the study, we used the Bulgarian version of the MiNi-IPIP questionnaire (Donnellan, Oswald, Baird, Lucas, 2006; Karabeliova, Petrov, Milanov & Ivanova,, 2016). It consists of 20 items, four for each of the scales representing the five personality dimensions: *Intellect/Imagination, Conscientiousness, Extraversion, Agreeableness* and *Neuroticism*. Answers were given on a 5-point Likert-type scale from **1** (*It does not apply to me at all*) to **5** (*It completely applies to me*). Some example items are: *"I have lively imagination."* (Intellect/Imagination); *"I like order."* (Conscientiousness); *"I talk to a lot of different people at events."* (Extraversion); *"I understand other people's emotions."* (Agreeableness) and *"I get easily upset."* (Neuroticism).

Generativity: The 20-items *Loyola Generativity Scale* (McAdams & de St. Aubin, 1992), designed to measure a general disposition to generativity, was used to assess generative concern. The participants had to mark their choice on a Likert-type scale from **1** (*It does not apply to me at all*) to **4** (*It completely applies to me*). Some of the items were: "*I try to be creative in most of the things I do.*"; "*I would adopt and raise a child if I'm unable to have one on my own.*"; "*People think of me as a very productive person.*"; "*I try to impart my gained experience and knowledge to others.*".

Procedure: The study began in the last quarter of 2019 and finished in 2020. Initially the data were collected via paper-based questionnaires. Due to the

COVID-19 pandemic, part of the data were collected online. The respondents were informed at the top of the questionnaires that their participation is anonymous and were asked to be sincere and to answer all of the questions. Data were analyzed by using SPSS, Version 20.0 (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp).

Results

Correlation analysis

An intercorrelation matrix was calculated for the scores on the five personality traits and generative concern. **Table** 1 shows tha**t** generative concern was significantly correlated with all personality traits, except for *Neuroticism* (r = -.065, p = .208). Generative concern and *Extraversion* marked the strongest association (r = .426, p < .001). The generative concern was moderately linked to *Agreeableness* (r = .320, p < .001) and *Conscientiousness* (r = .263, p < .001). Its relationship with *Openness to experience* was a week one *(r = .180, p < .01).*

Table 1

Correlations between personality traits and generative concern

	1	2	3	4	5	6
1. Extraversion	-					
2. Agreeableness	.113*	-				
3. Conscientiousness	.103	.130*	-			
4. Neuroticism	-.071	.179*	-.107	-		
5. Openness	.067	.218**	.054	.167**	-	
6. Generative concern	.426***	.320***	.263***	-.059	.180**	-

* - p < .05; ** - p < .01; *** - p < .001

For the purposes of the statistical analysis, the demographic variables *occupation*, *residence marital status* and *having children* were transformed in binary variables. In the case of *occupation*, **1** was used to designate the students' group and **2** – to designate the full-time working participants. As to *residence*, **1** was assigned to the participants inhabiting small towns and villages, and **2** – to those from the capital and big cities. Regarding *marital status*, the unmarried people in the sample were coded as **1**, the married ones – as **2**. The participants without children were coded as **1**, those with one or more children – as **2**. Men were coded as **1** and women – as **2**.

Table 2 presents the correlations between the socio-demographics and generative concern. The strongest correlations were between the factors *age* and

occupation (r = .740, p < .001) and *age* and *having children* (r = .732, p < .001). The variables with a significant intercorrelation above 0.7 could not be used for predictive purposes, so the socio-demographic factors *age* and *having children* were excluded from the further prediction equation (Schroeder, Sjoquist & Stephan, 2017). The participant's *gender* did not have a significant correlation with any other variable and was also excluded from the further regression analysis.

G*enerative concern* scores significantly correlated with all socio-demographic factors, except for *gender*. Its correlations were significant and positive with the factors: *education* (r = .318, p < .001), *occupation* (r = .277, p < .001), *marital status* (r = .313, p < .001) and *having children* (r = .320, p < .001), and negative – with *residence* (r = -.179, p < .01).

Table 2
Correlations between the demographic variables and generativity

	1	2	3	4	5	6	7	8
1. Age	-							
2. Gender	-.098	-						
3. Level of education	.528***	.044	-					
4. Occupation	.740***	-.137	.454***	-				
5. Residence	-.279***	-.068	-.001	-.024	-.275***			
6. Marital status	.510***	-.016	.295***	.392***	-.279***	-		
7. Having children	.732***	-.032	.392***	.645***	-.372***	.594***	-	
8. Generative concern	.318***	.082	.277***	.227***	-.179**	.313***	.320***	-

** *p*<.01; ***; *p* < .001

Hierarchical regression analysis. For the purpose of the study, a two-step hierarchical regression analysis was applied. In the first model, we entered the demographic factors (*education*, *occupation*, *residence* and *marital status*) as predictors, and *generative concern* as a criterion variable ($F_{(4, 207)}$ = 9.225, $p < .001$). Both *marital status* (β = .229, $p < .01$) and *education* (β = .187, $p < .01$) were identified as significant predictors of generative concern. *Occupation* and *residence* did not have significant effects on the outcome. This model explained 15% of the variance (R^2 = .151, ΔR^2 = .151).

In the second model ($F_{(9, 202)}$ = 13.689, $p < .001$), the personality traits were entered as predictors and the explained variance was up to 38% (R^2 = .379, ΔR^2 = .228). The demographic factors *education* (β = .164, p= .01) and *marital status* (β = .138, $p < .05$) remained significant predictors of generative concern. All personality traits, except for *Neuroticism*, significantly predicted the levels of the dependent variable and contributed almost 23% to the variance explained. *Extraversion* had the biggest effect on the generative concern (β = .295, $p < .001$),

followed by *Agreeableness (β = .233, p < .001)*, *Intellect/Imagination (β = .149, p < .01)* and *Conscientiousness (β = .147, p < .05)*.

The summary of regression models is presented at **Table 3**.

Table 3
Summary of hierarchical multiple regression analysis

Model	R	R^2	Adj, R^2	SE	ΔR^2	ΔF	P
1	.389[a]	.151	.135	7.784	.151	9.225	.000
2	.616[b]	.379	.351	6.741	.228	14.801	.000

a. Predictors: (Constant), occupation, residence, marital status, education
b. Predictors: (Constant), occupation, residence, marital status, education, openness, conscientiousness, extraversion, agreeableness, neuroticism
Dependent variable: generative concern

Discussion

In an attempt to shed light on positive adult development, our study is focused on the construct of generativity and its predictors. In the seminal Erikson's lifespan theory, generativity represents a socially significant level in identity development, leading to self-enrichment by personal commitment to intergenerational continuity and strivings for enduring impact on historical future. In this way, the temporal frame of the generative project goes beyond the individual life and implies that people tend to project themselves in a way that allows them to keep the sense that their contribution is relevant to the well-being of the larger community and young generations. The purpose of this study was to give insight into the relationship between generativity and personality traits, while accounting for the impact of the socio-demographic factors. Given the importance of generativity in creating and maintaining the intergenerational continuity, we need in-deep understanding of the contextual factors in which it occurs, as well as personality dispositions it is shaped by. In the study reported here, along with demographic information about the participants we used the LGS (Loyola Generativity Scale) to measure a general disposition for generativity as a criterion variable and a five-factor personality traits questionnaire (Mini IPIP) - to assess the trait dimensions as predictive variables.

The results of correlation analyses revealed that from socio-demographic perspective, the disposition reflecting generativity increased with being married and having children, as well as with higher educational and occupational attainment. All these demographic factors are socially valued and referred to domains of realization which are supposed to create contextual opportunities for social engagement, generative involvement and growth. Participants from smaller towns and villages scored higher on generativity, indicated by a statistically significant negative

correlation between the factor *residence* and the scores on generative concern. Finding suggests that the more collectivist and tradition-oriented communities with cultural demand for filial piety, interdependence and group welfare seem beneficial for generativity. It is in line with cross-cultural studies (Hofer, Busch, Chasiotis, Kärtner & Campos, 2008; Hofer, Busch, Au, Poláčková Šolcová, Tavel & Wong, 2016) where, in particular, was shown that internalized cultural demand affects generative behaviors indirectly through generative concern.

Demographic factor *residence* however didn't prove further in our regression analyses to be a significant predictor of generative concern. So, it seems that *per se* it expresses a beneficial trend but is not enough to account for the differences in generativity.

From personality perspective, all personality traits, except for *Neuroticism*, demonstrated a significant and positive linear link to the criterion variable. The result highlights the importance of the stabile and consistent personality characteristics to the general disposition for generativity. Participants who rated themselves higher on *Extraversion*, *Agreeableness*, *Conscientiousness* and *Intellect/ Imagination* scored higher on generative concern.

The hypotheses 1 and 2 were empirically supported. A two-step hierarchical regression analytical strategy was applied for their verification. Among demographic predictors in the first model, *marital status* and *education* were identified as significant predictors with 15% contribution. Consistent with our results, educational attainment and identity one forms in psychosocial contexts of couple relationships have important implications for generativity. With adding personality traits in model 2, *Extraversion*, *Agreeableness*, *Intellect/Imagination* and *Conscientiousness* significantly contributed to the explanation of the individual differences in generative concern, accounting most of the outcome variance (23%) in comparison to the contribution of the socio-demographics alone.

Taking these results together, the study revealed that the family way of life and higher educational level, combined with an adaptive multifaceted personality profile explain a meaningful part of the individual differences in disposition to be productive, driven by the care for the future of human kind, culture and society. In general, findings backs-up previous studies, pointed out in the Introduction. As it appears, the personal and societal relevance as well as multi-task nature of the generative mission implementation needs the full potential of personality adaptive features, and education and family ensure a beneficial context.

The present study has some limitations. The design was cross sectional, men were underrepresented in the sample, and pandemic time of measuring – unusual and challenging. Although at the core of generativity, generative concern is one of the many facets of this rich and complex construct. Regardless, findings are in line with earlier studies and provide insights into the range of socio-demographic and personality factors which shape the context and the individual potential for generativity. It would be useful to be taken into accounts by institutionalists, policymakers and all whom may concern the future of human society.

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THE DIMENSIONS OF SOCIAL SUPPORT AS PREDICTORS OF GENERATIVITY

Abstract

The purpose of this study is to examine how the four dimensions of social support (SS) – giving and receiving emotional and instrumental support respectively – predict generativity (Erikson, 1968). Given the essence of generativity, we hypothesize that the giving aspects of SS are predictors of generativity and have a greater effect on it than receiving ones. Our sample (222 people) is aged between 16 and 74 (M = 34.90; SD = 14.36) and is predominantly female (70 % women). Participants filled out two self-report measures – the Loyola Generativity Scale (McAdams, & de St. Aubin, 1992) and the Brief 2-Way Social Support Scale (Obst, et al., 2019). The multiple hierarchical regression analysis has the receiving SS dimensions as a first model (F (2, 219) = 10.822, p < .001), with the giving SS dimensions included in the second one (F (4, 217) = 15.708, p < .001). First model (9% explained variance) identifies receiving emotional support (β = .211, p < .05) as a predictor of generativity. In the second model (22% explained variance), the two giving SS dimensions – of emotional (β = .269, p < .001) and instrumental support (β = .241, p < .001), have a significant effect, while receiving emotional support loses its predictive value. Findings provide important evidence for the need to examine both giving and receiving support (emotional and instrumental) in prediction of generativity

Key words: generativity, social support dimensions, giving and receiving support.

Introduction

According to Erik Erikson (1968), in the seventh stage of development in his theory on ego identity, the stage which corresponds to middle adulthood, people are supposed to be driven by an inner call for procreativity, productivity and creativity, and to be mostly occupied with generating and nurturing whom and what will outlive them. That call he shortly defines as "the concern for establishing and guiding the next generation" (Erikson, 1968, p. 138) and terms "generativity". The opposing tendency one may have, namely the lack of such concern, Erikson calls "stagnation".

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Generativity is what ensures the continuation of culture and society. There could be some misunderstanding that it is a simply biological concept – hence, that it can be reduced to biologically procreating and nurturing one's offspring. Quite the opposite – generativity is a rather broad category, which may encompass not only parenting, but also teaching, mentoring, volunteer work, leadership, charitable activities, religious involvements, political activities, and even paying one's taxes (McAdams, 2013). Moreover, according to McAdams and de St. Aubin (1992), generativity may be conceived in terms of seven interrelated features: cultural demand, inner desire, generative concern, belief in the species, commitment, generative action, and personal narration.

More metaphorically speaking, generativity consists of an investment of one's substance in various forms of life and work that will outlive the self (Kotre, 1984). Because of its orientation toward the future, the generative tendency is of great societal value – these "investments" form the basis of the existence and evolution of civilization (Huta & Zuroff, 2008), they are the "store" of human life (Erikson & Erikson, 1998, p. 57) and in some way, they are the pillars of society. This tendency indeed is what creates an occasion for generations to meet and for social exchange to occur between them, which is beneficial for both sides.

It is rather obvious that the youth need nurturance and guidance. What probably is not discussed enough is that mature people need to be needed and their maturity as well needs to be guided and encouraged by what they have produced and are taking care of (Erikson, 1977). Therefore, the psychosocial virtue of care, emblematic for the seventh stage, needs opportunities to be channeled and directed toward significant others (or significant causes). Some theorists also argue (Kotre, 1984) that the shift in contemporary social life allows various generative expression and therefore generativity is not a prerogative of midlife. This means all ages are prone to generative actions – actions that ensure the meaning of culture will be preserved and that support society in times of need.

Social support is indeed a form of relational, communicative behavior, and communicative not only in its everyday meaning, but also in the sense that it creates a community around individuals, which is especially needed when a person is "riding" the fluctuations of life. One of the very first well-developed conceptualizations of social support, Sidney Cobb's one (1976, p. 300), defines it as information that belongs to one of three classes: "leading the subject to believe that he/she 1) is cared for and loved; 2) is esteemed and valued; and/ or 3) belongs to a network of communication and mutual obligation". Due to its various aspects, social support is a complicated term to give a unified definition to (Bruhn & Philips, 1984; Stewart, 1989), even though different authors have proposed such (Albrecht & Adelman, 1984; 1987; Cohen & Wills, 1985; House & Kahn, 1985). Rather, it is more valuable to regard social support as an umbrella term that encompasses a variety of ways in which one may provide another with "a sense of reassurance, validation, and acceptance […], within a web of ties in a supportive network" (Albrecht & Goldsmith, 2003, p. 265).

Authors have found social support to play a role in mediating the effects of stressful life events, in protecting health, and in buffering against stressful circumstances or crises (Cohen, Gottlieb, & Underwood, 2000; Lindsey & Yates, 2004). It is also proven to be of a great necessity for the quality of life of especially vulnerable populations such as the elderly (Newsom & Schulz, 1996), people with physical illnesses (Alferi, Carver, Antoni, Weiss, & Duran, 2001) or mental health struggles (Kessler & McLeod, 1985), people with a low income (Green & Rodgers, 2001) and etc. We could conclude that receiving social support is crucial. Some even say that receiving social support is of such importance when one is facing an obstacle, that its absence could be considered "an incongruity of considerable significance" on its own (Moss, 1973).

Providing social support though, also proves to be significant for people's wellbeing. Research implies that the beneficial effect of giving social support applies even more for the aged population, being a factor in the reduction of distress (Liang, Krause, & Bennett, 2001). What is an even more significant finding, providing social support (with analyses being done for both instrumental and emotional support) reduces the risks for mortality (Brown, Nesse, Vinokur, & Smith, 2003). Authors did not find any significant mediator for that linkage, but they have proposed a possible explanation for it in the face of the evolutionary advantages of helping others. Perhaps, this could be linked with what Erikson meant by saying that the generative tendency, which also requires nurturance, is the "store" of human life (Erikson & Erikson, 1998, p. 57), and that mature people need to be needed. Another research finds the reciprocity in giving and receiving social support when it comes to one's intimate relationships is associated with short- and long-term sickness absenteeism (Vaananen, Buunk, Kivimaki, Pentti, & Vahtera, 2005). We could comment on that last finding by mentioning that love and care as psychosocial virtues in Erikson's theory are subsequent. Thus, a healthy midlife adult (the sample's mean age is around 40) should be able to both love and care for the loved ones – and healthy, apparently, not only in the psychosocial field of life, but also biologically.

There are also direct links between generativity and social support. One research focuses on the differences in generativity and social involvement between African Americans and White Americans (Hart, McAdams, Hirsch, & Bauer, 2001). One of the components of social involvement is indeed social support, which correlates moderately with generativity in the whole sample. Another rather new research finds a strong correlation between social support and generativity (Chang, 2020). Also, a medium influence on adult subjective well-being by both social support and generativity has recently been observed (Chang & Sohn, 2020).

The purpose of this study is to examine how the dimensions of social support predict generativity: two of giving and two of receiving (emotional and instrumental support, respectively), Based on Erikson's conceptualization of generativity (nurturance, maintenance and guidance) and available research, we hypothesize that 1) all dimensions of social support will be correlated positively

and significantly with generativity, and 2) the contribution of the giving aspects of social support to the outcome's variance would be greater. Previous research regarding the second hypothesis was not found by the authors due to a lack of a usage of a measure which differentiate the effect of giving and receiving support on generativity. However, conceptually there is enough evidence that hints at the possibility that providing for the future generations, as well as being emotionally and helpfully present in others' life could be more predicting for generativity than receiving support. Specifically, because such research in particular has not been done before, it is valuable to examine whether there is empirical evidence to presume that these aspects of social support are more crucial for generativity.

Method

Participants

The study includes a sample of 222 Bulgarians, aged between 16 and 74 (M = 34.90; SD = 14.36) and divided into three age groups – below 22 years of age (24%), from 22 to 39 years of age (38%), and from 39 to 74 years of age (37%). The majority (70%) of participants are women, while men constitute a smaller proportion of the sample (30%), and only one participant has not mentioned their gender (0.4%). When it comes to the level of education, the distribution is as follows: 35% have graduated high school, 34% have a bachelor diploma, and 31% are either MD or PhD graduates. As to occupation, 52% of the participants are full-time employees, 22% - part-time employees and students, 19% - students and a minority of 4% - retired and 3% - unemployed. Regarding residence, 67% of the participants live in the capital of Bulgaria, 14% in a village, 11% in a big town and 8% in a small town. Concerning marital status and having children - 51% of the participants are not married and 49% are married, with 54% of the sample not having children and 46% - having one or more children.

Measures

Participants filled out two self-reported measures. The first one is the 20-item Loyola Generativity Scale (LGS, McAdams & de St. Aubin, 1992). The LGS is a unidimensional measure that consists of 20 statements (α = .810) that participants rate on a 4-point Likert scale from 1 "not at all like me" to 4 "very much like me". Example items are "I try to pass along the knowledge I have gained through my experiences" and "I do not feel that other people need me" (reversed).

The second measure is the 12-item Brief 2-Way Social Support Scale (Brief 2-Way SSS, Obst, Shakespeare-Finch, Krosch, & Rogers, 2019) which is divided into 4 subscales – receiving emotional support (α = .870), giving emotional support (α = .651), receiving instrumental support (α = .739), and giving instrumental support (α = .848). All four subscales of the Brief 2-Way SSS consist of 3 statements that participants rate of a 6-point Likert scale from 0 "Never" to 5 "Always". Example items for each of the scales are as follows:

- receiving emotional support (RES) - "When I am feeling down there is someone I can lean on."
- giving emotional support (GES) - "People close to me tell me their fears and worries."
- receiving instrumental support (RIS) - "I have someone to help me if I am physically unwell."
- giving instrumental support (GIS) – "I am a person others turn to for help with tasks."

Procedure

The research was conducted[39] at the end of 2019 and the beginning of 2020, partly after the occurrence of the COVID-19 pandemic. Therefore, most of the data was collected in an online format, but still some of it was obtained in person on paper prints of the questionnaire. Participation was voluntary and anonymous. Participants were instructed that the statements included are related to different ways in which people may think, feel or act, and that their participation demands choosing the specific point of agreement with these statements that feels closest to them. Data was analysed by using SPSS, Version 20.0 (IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp).

Results

Descriptive statistics

Table 1 displays descriptive statistics for the unidimensional Loyola Generativity Scale and the four subscales of the Brief 2-way social support scale, namely - receiving emotional support; giving emotional support; receiving instrumental support; giving instrumental support.

Table 1
Descriptive characteristics of the scales

Scale	Min	Max	*M*	*SD*	Skewness	Kurtosis	α
LGS	39	78	60.95	8.34	-,170	-.17	.810
RES	1	5	4.40	.88	-1.82	2.99	.870
GES	1	5	4.15	.77	-.83	.34	.651
RIS	1	5	4.20	.83	-1.31	1.61	.739
GIS	1	5	4.02	.88	-.98	.80	.848

Abbreviations: **LGS** *- Loyola Generativity Scale;* **RES** *- receiving emotional support;* **GES** *- giving emotional support;* **RIS** *- receiving instrumental support;* **GIS** *- giving instrumental support*

The absolute values of the measures of asymmetry Skewness and Kurtosis are both within acceptable range of < 2 and < 7 respectively, therefore the distribution is almost normal (Hair, & al., 2010; Tabachnik & Fidell, 2019). The Cronbach's alpha values indicate the reliability of the scales, mostly above .700.

Correlation analysis

As shown in **Table 2**, generativity was found to correlate positively and statistically significantly with all aspects of social support.

Table 2

Correlations between generativity and social support dimensions

	RES	RIS	GES	GIS
Generativity	.287***	.254***	.414***	.385***
RES		.657***	.512***	.320***
RIS			.442***	.365***
GES				.450***

Note: Correlation is significant at the 0.001 level

*Abbreviations: **RES** - receiving emotional support; **GES** - giving emotional support; **RIS** - receiving instrumental support; **GIS** - giving instrumental support*

Among these correlations, the highest value of Pearson's *r*, indicating a moderate strength of association, was identified between the scores on generativity and the scores on giving emotional support ($r = .414$, $p < .001$). Generativity and receiving instrumental support marked the lowest correlation with moderate intensity ($r = .254$, $p < .001$).

The dimensions of social support also proved to intercorrelate in a statistically significant and positive way. The strongest correlation was found between the scores on receiving instrumental support and these on receiving emotional support ($r = .657$, $p < .001$), followed by the correlation between the scores on giving and those on receiving emotional support ($r = .512$, $p < .001$). The lowest correlation – a moderate one, was between receiving emotional support and giving instrumental support ($r = .320$, $p < .001$). None of the correlations exceeded 0.7 as a threshold for multicollinearity among independent variables, thus allowing the subsequent regression analysis.

Hierarchical multiple regression analysis

To approach our research questions, we conducted a two-step hierarchical regression analysis in order to evaluate the prediction of generativity from the two receiving and the two giving social support dimensions. The scores on the two receiving social support subscales were regressed onto the scores on generativity scale at step 1. The scores on the two giving social support subscales were introduced at step 2. The summary of regression models is presented at **Table 3**.

Table 3
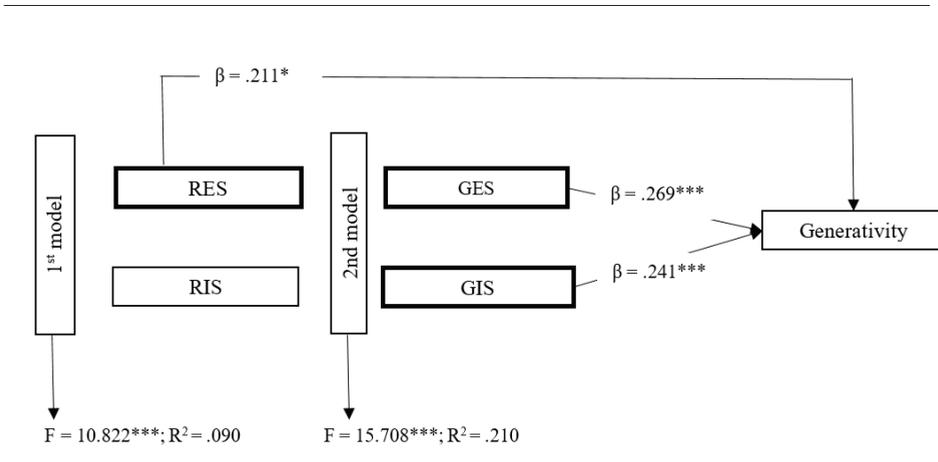*Summary of hierarchical multiple regression analysis*

Model	R	R^2	Adj. R^2	SE	ΔR^2	ΔF	*p*
1	.30[1]	.09	.08	7.99	.09	10.82	.000
2	.47[2]	.22	.21	7.41	.13	18.83	.000

1. Predictors: (Constant), receiving instrumental support, receiving emotional support
2. Predictors: (Constant), receiving instrumental support, receiving emotional support, giving instrumental support, giving emotional support

We analyzed the indicators of Tolerance and Variance Inflation Factor (VIF), recommended as the most important and reliable test of multicollinearity (Hair, & al., ibid.). The VIF values were all bellow 10 (for receiving emotional support - model 1: VIF = 1.75, model 2: VIF = 1.97; for receiving instrumental support = model 1: VIF = 1.75, model 2 – VIF = 1.86; for giving emotional support - model 2: VIF=1.56; for giving instrumental support - model 2: VIF=1.31). The values of tolerance were all greater than .2 and therefore acceptable (for receiving emotional support – .56 in model 1; .53 in model 2; for receiving instrumental support – .56 in model 1; .50 in model 2; for giving emotional support: – .64 in model 2; for giving instrumental support – .76 in model 2). On this base, the assumption of multicollinearity was deemed to be met.

Figure 1.

1st (receiving SS dimensions) and 2nd (giving social support dimensions included) models

$\beta = .211*$

RES

RIS

GES — $\beta = .269***$

GIS — $\beta = .241***$

Generativity

1st model

2nd model

$F = 10.822***; R^2 = .090$ $F = 15.708***; R^2 = .210$

* - $p < .05$; ** - $p < .01$; *** - $p < .001$

As shown on **Figure 1**, the results of the first block hierarchical regression analysis revealed a model to be statistically significant ($F_{(2,219)} = 10.82$, $p < .001$). Model 1 accounted for 9 % of the variance in generativity ($R^2 = .09$). It was found that receiving emotional support was a significant predictor of generativity ($\beta = 0.21$; $p = .01$), and receiving instrumental support – was not ($\beta = .11$; $p = .17$).

Entering the scores on the two giving social support dimensions at step 2 raised the prediction up to 22 % ($R^2 = 0.22$). Model 2 proved to be also significant ($F_{(4,217)} = 15.70$, $p < .001$). With all four independent variables entered in model 2, only the giving social support aspects were significant predictors (giving social support: $\beta = .26$; $p < .001$; giving instrumental support: $\beta = .24$; $p = .001$). The receiving aspects did not contribute statistically significantly to the regression model (receiving instrumental support: $\beta = .21$; $p = .390$; receiving instrumental support: $\beta = .00$; $p = .997$). Therefore, giving emotional and instrumental support were the most important predictors, which uniquely explained 13 % of the variance of generativity.

Discussion

The purpose of this study was to deepen our understanding of the role of social support dimensions in prediction of generativity. Its theoretical background integrated the developmental perspective to adult identity and the special mission of generativity in human life cycle with multidimensional approach to social support. Both kind of variables – predictors and criterion, we were interested in, refer to the global category of prosocial behavior intended to help and benefits others, maintain human connection and community. Contemporary psychologists emphasize the need to differentiate this complex behavior and overcome unidimensional approach leading to mixed and inconsistent finding (Padilla-Walker & Carlo, 2014). Although several previous researches suggest that social support is associated to generativity, the contribution of giving and receiving support dimensions is unclear. Our study was an attempt to illuminate their differential effects on the outcome measure. The two instruments used – The Loyola Generativity Scale and The Brief two-way social support scale were chosen to measures of the criterion and the predictive variables, respectively. They displayed a good internal consistency in the current sample in accordance with previous studies. We checked the assumptions of our research hypotheses by applying a two-steps hierarchical regression strategy.

Consistent with past research, discussed in the introduction, the results of the correlation analysis provided statistical confirmation of the meaningful integration of social support in research of the construct of generativity. Generativity was found to be positively and significantly related to all aspects of social support. Therefore, the first hypothesis of our study was empirically verified and supported. Higher scores of generative dispositions were connected to higher

scores on both giving and receiving emotional and instrumental support. These results point out the role of perceived quality of social exchange in promoting generativity. More generative participants appeared to be more convinced in their position of provider and receiver of tangible assistance, comfort, trust and affection in their relations. The strongest correlation found related generativity to giving emotional support thus revealing personal willingness to be present in life of others as a source of validation and empathy for them.

Another important aspect of the results of the correlation analysis is the interconnectedness of the four social support dimensions. Generally, the disposition to give/receive one kind of support enhance the disposition to give/receive another kind. Here our results replicate the finding of Obst. & al., including the lowest association between receiving emotional support and giving instrumental support "in line with the theory underpinning the scale construct" (Obst. & al., ibid, p. 5). The strongest association found between emotional support provision and emotional support receiving highlights the importance of mutual affective engagement and attunement in interpersonal interactions, demonstrated in other research (Morelli, Lee, Arnn, & Zaki, 2015).

The second hypothesis, aimed to differentiate the effects of the giving and the receiving social support dimensions on generativity, was tested and confirmed by applying a two-step hierarchical regression analysis. When the two receiving aspects entered the first model, only receiving emotional support showed a significant effect on the criterion, accounting for 9% of its variance. According to results at step one, it appeared that generativity would be more probable when a person felt there was somebody who genuinely cared about him/her, someone to lean on in times of need than when being assisted in a tangible manner.

With adding the two giving dimensions as predictors in the second model, the effect of receiving emotional support disappeared and the two giving support dimensions proved to relate significantly to generativity above and beyond the receiving ones. In this way they emerged as significant unique positive predictors of generativity explaining 13 % of its variance. This result suggests that one's perceived position of a supporter/helper in the interpersonal exchange of resources (emotional comfort, an advice, a tangible aid) is an important factor in shaping the generative disposition. Its predictive value is consistent with Eriksonian view of the psychosocial virtue of generativity, namely – care (Erikson, ibid).

Our study was intended to fill the missing knowledge about the differential effects of social support dimensions on generativity. Results provide important evidence for the significance of multidimensional approach to social support and the need to examine both giving and receiving support (emotional and instrumental) in prediction of generativity.

A future longitudinal research would allow to examine if the effects of the giving and the receiving social support dimensions on generativity are constant or change in lifetime.

Along with theoretical and research implications, the results of the study could be taken into account in development of programs for human flourishing (Dahl, Wilson-Mendenhall, & Davidson, 2020) and interventions to optimize support behavior within families or organizations. Linking with research of well-being, special attention should be given to the benefits of being "giver", empathy and importance of affective attunement and emotional support in interpersonal interactions. Supporting others not only satisfy the societal demands for generativity on adults and their current needs but also set the scene for further development - of the individuals, the offspring, culture and society.

Our study was an initial step in a broader attempt to reveal different kinds of predictors of generativity through the integration of theory and research on adult psychosocial development. And as a first step it has its limitations. The design is cross-sectional and the sample although demographically diverse is not well-balanced on some socio-demographics, especially gender. A part of the data was collected in an unusual and challenging situation of COVID-19 pandemic. Nevertheless, the main findings are consistent with Eriksonian conception of generativity and grow psychological knowledge of distinct contribution of the social support dimensions to the generative disposition's prediction.

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RELATIONSHIP BETWEEN THE BASIC HUMAN VALUES AND THE DARK TRIAD TRAITS

Abstract

The aim of our research was to better understand the motivation of the Dark Triad traits by investigating their relationship with Schwartz's basic human values. Our hypothesis was that power, achievement and hedonism would be positive predictors, while benevolence and universalism would be negative predictors of the Dark Triad traits. An online study was conducted in Serbian (N=383, M=32.34, SD=11.72, 66.8% female). The Dirty Dozen (Jonason & Webster, 2010) and the PVQ-21 measures (Schwartz, 2002) were used. Three regression models were set with narcissism, machiavellianism and psychopathy as criterion variables, and basic human values and demographic variables as predictors. Significant predictors of narcissism (R^2=.44; F(13)=21.63; p<.01) were power (β=.35, p<.01), achievement (β=.34, p<.01), gender (β=-.12, p<.01) and age (β=-.11, p<.05). Significant predictors of machiavellianism (R^2=.26; F(13)=9.68; p<.01) were power (β=.32, p<.01), benevolence (β=-.20, p<.01), gender (β=-.12, p<.05) and age (β=-.12, p<.05). Significant predictors of psychopathy (R^2=.23; F(13)=8.01; p<.01) were power (β=.20, p<.01), benevolence (β=-.25, p<.01), universalism (β=-.12, p<.05), gender (β=-.10, p<.05) and age (β=-.11, p<.05). Machiavellianism and psychopathy were predicted by values that run against the group's interests, making them "darker" in the context of relations and the society.

Key words: Dark Triad, narcissism, psychopathy, machiavellianism, basic human values

Introduction

The Dark Triad

The Dark Triad construct was coined by Paulhus and Williams (2002) to include non-pathological but socially aversive personality traits, consisting of narcissism, psychopathy and machiavellianism. All three represent a socially malevolent character, with elements of emotional coldness, duplicity and aggressiveness, and their behavior is oriented towards self-promotion.

Narcissism and psychopathy refer to subclinical forms of clinical syndromes (Paulhus & Williams, 2002). Raskin and Hall (1979, as cited by Paulhus & Williams,

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2002) distinguished a subclinical version of narcissism, which entails feelings of grandiosity, dominance, entitlement and superiority. Psychopathy was also adapted to a subclinical form, by including such traits as high impulsivity, thrill-seeking, low empathy and low anxiety (Hare, 1985, as cited by Paulhus & Williams, 2002). Machiavellianism does not have a clinical form, it is a construct that emerged after Christie and Geis (1970, as cited by Paulhus & Williams, 2002) created a questionnaire based on statements from Machiavelli's books, who was famous for his manipulative tactics, to measure cynicism, lack of principles and manipulation (Furnham, Richards, & Paulhus, 2013).

All Dark Triad traits have been linked with the Big Five and the HEXACO models (Furnham et al., 2013). All three are low on Agreeableness and Honesty-Humility (Furnham et al., 2013; Paulhus & Williams, 2002; Rogoza & Cieciuch, 2018). Narcissism is associated with Extraversion, machiavellianism and psychopathy are negatively associated with Conscientiousness, and psychopathy is low on Neuroticism (Paulhus & Williams, 2002). Men are consistently found to score higher than women on all Dark Triad traits (Jonason & Webster, 2010; Paulhus & Williams, 2002).

Machiavellianism and psychopathy are closely related since they both have similar affective characteristics, such as emotional coldness, and similar behavioral characteristics, such as manipulation and antisocial tendencies, but what seems to distinguish the two is that psychopathy involves impulsivity and risk-taking while machiavellianism seems to have better impulse regulation ability (Glenn & Sellbom, 2015). Psychopathy is seen as the "darkest" of the three traits as it combines disagreeableness with low anxiety (Paulhus & Williams, 2002). Antisocial behavior is significantly predicted by psychopathy but not by machiavellianism or narcissism.

Schwartz's basic human values

Schwartz postulated the existence of 10 universal human values that are critical motivators of people's attitudes and behaviors (Schwartz, 2012). The values are self-direction, stimulation, hedonism, achievement, power, security, conformity, tradition, benevolence and universalism. Values reflect one's beliefs that are closely linked to affect. In this way, when they are activated or threatened, they invoke feelings, depending on their importance to the individual. For example, if someone highly values achievement but does not have favorable surroundings to demonstrate their competence, they may feel helpless and desperate.

Values have hierarchy in each person's system of priorities, which defines them as individuals (Schwartz, 2012). Each value has a goal that it expresses, which conflicts with some and is congruent with other values. For example, if a person is motivated by power and strives for prestige and dominance over other people, this will typically conflict with benevolence and the pursuit of the common good.

To reflect this dynamic, the values are organized along two bipolar dimensions (Schwartz, 2012). One dimension contrasts openness to change (self-direction and stimulation) with conservation (security, conformity and tradition). Conflict, reflected in this opposition, is between the values that put emphasis on independent thought, action and embracing of new things, and the values that focus on order, restriction of oneself, conservation of past and resistance to change. Self-direction entails making choices, creating, exploring and being independent. Stimulation refers to seeking excitement, challenges and new things. Security represents valuing personal safety, group stability and harmony in relationships and society. Conformity values obedience and self-discipline and its goal is to restrain individual actions that may violate social norms or harm others. Tradition is defined by respect, commitment and acceptance of cultural or religious norms. Conformity and tradition are close in motivation, but the main difference is that conformity means subordination to one's parents, teachers and bosses, while tradition entails subordination to religion, culture and society in general.

Schwartz (2012) postulated that the other dimension contrasts self-enhancement (power and achievement) with self-transcendence (universalism and benevolence). Conflict in this opposition is between the values that emphasize personal interests, pursuit of success and dominance over others, and the values that reflect concern for the welfare and interests of others. Defining goal of power is to gain social status and control over people and resources. Power value is important in groups that are organized in hierarchies, so it motivates individuals to take on responsibility and seek dominance in social institutions. Achievement reflects ambition and the pursuit of personal success by showing competence according to social standards. Both power and achievement highly value social esteem, but achievement value is more focused on successfully demonstrating competence in specific interaction, while power value puts emphasis on keeping a dominant position in a broader social system. Hedonism belongs both to self-enhancement and openness to change, and its goal is to seek pleasure or sensuous gratification for oneself. Benevolence refers to the goal of preserving and improving the welfare of people close to oneself, like family and other primary groups, and showing concern for them. Universalism value emphasizes social justice, understanding, tolerance and protection of the welfare of all people and nature.

Previous research showed that Schwartz's value theory is validated cross-culturally, implying that the meaning of the 10 basic human values is similar across the numerous cultures (Knafo, Roccas, & Sagiv, 2011). Cross-culturally, benevolence, universalism and self-direction values are found to be at the top of hierarchy, while power, tradition and stimulation are at the bottom (Schwartz, 2012). This is probably due to the fact that people value adaptive functions of values, that help them maintain societies and that are close to human nature (Parsons, 1951, as cited by Schwartz, 2012). Values that go against the group's interests and clash with human nature are less desirable.

The Dark Triad and the basic human values

To better understand the Dark Triad traits, it is important to look at the value systems that they are correlated with, since values express motivation and could point to what drives each Dark Triad trait (Jonason, Foster, Kavanagh, Gouveia, & Birkás, 2018). However, limited research has been conducted on the relationship between the Dark Triad traits and Schwartz's basic human values, and none has been conducted in Serbian language.

Previous findings showed that the Dark Triad traits exhibit strong preference for valuing power, achievement, hedonism, and stimulation (Kajonius, Persson, & Jonason, 2015; Rogoza & Cieciuch, 2018). Agreeableness is positively correlated with benevolence and negatively with power and achievement, which would be in line with the fact that all three Dark Triad traits score low on agreeableness (Roccas, Sagiv, Schwartz, & Knafo, 2002). While narcissism is associated with a more individualistic value system (self-enhancement), its interests do not necessarily go against the group's interests (Jonason, Strosser, Kroll, Duineveld, & Baruffi, 2015). However, machiavellianism and psychopathy tend to pursue values that run against the group's interests: both are low on conservation while psychopathy is also low on self-transcendence.

Research hypothesis

The research problem was to investigate which basic human values could contribute to the prediction of the Dark Triad traits. Based on the previous findings, our hypothesis was that power, achievement and hedonism would be positive predictors, while benevolence and universalism would be negative predictors of the Dark Triad traits.

Method

Sampling

The survey was in Serbian language and conducted online. Snowball sampling was used where we asked each participant to forward the survey to five more people of the same gender as them, trying to ensure the approximately equal number of male and female participants. The research sample consisted of 383 participants, aged 16 to 79 (M=32.34, SD=11.72, 66.8% female). Age range of most participants was 19 to 37 (72.4%).

Instruments

The Dirty Dozen inventory was used to measure the Dark Triad traits (Jonason & Webster, 2010). It is a 12-item measure, with four items per each Dark Triad trait: narcissism (α=.82), machiavellianism (α=.84) and psychopathy (α=.68). It is a concise measure that reduced the number of items that normally assesses

the Dark Triad from over 90 items to 12 items. The measure includes items from the 40-item Narcissistic Personality Inventory, the 31-item Self-Report Psychopathy Scale-III and the 20-item Mach IV. Participants were asked to rate how much they agreed with statements like "I have used deceit or lied to get my way" and "I tend to lack remorse" from 1 = 'strongly disagree' to 5 = 'strongly agree'. The Dirty Dozen measure showed good internal consistency (α=.86).

The 21-item version of Portrait Values Questionnaire (PVQ-21) was used to measure Schwartz's 10 basic human values (Schwartz, 2002). It is a shortened version of the original 40-item instrument, adapted for the purposes of the European Social Survey. PVQ-21 measures self-direction (α=.49), stimulation (α=.80), hedonism (α=.62), achievement (α=.63), power (α=.58), security (α=.47), conformity (α=.42), tradition (α=.17), benevolence (α=.65) and universalism (α=.55). Each value is measured with two items, only universalism is measured with three. The inventory includes short verbal portraits of 21 different people, each describing a person's goals and wishes, for example, "It's very important to him/her to help the people around him/her. He/she wants to care for their well-being" and "Being very successful is important to him/her. He/she hopes people will recognize his/her achievements". For each portrait, participants were asked "How much like you is this person?" and responses were in the range from 1 = 'very much like me' to 6 = 'not like me at all'. Participants were asked to compare the portrait to themselves and in this way the questionnaire captured the participants' values without explicitly saying that the values were being measured. PVQ-21 showed good internal consistency (α=.78).

Data analysis

Correlation and regression analyses were conducted using IBM SPSS Statistics software version 26. Three regression models were run where each Dark Triad trait was set as a criterion variable, while 10 basic human values and demographic variables (gender, age and education) were set as predictors.

Results

Table 1 shows descriptive statistics for the Dark Triad traits and Table 2 shows descriptive statistics for the basic human values.

Table 1
Descriptive statistics for the Dark Triad traits

Trait	M	SD	Scale
Narcissism	2.46	.96	1 = 'strongly disagree'
Machiavellianism	1.84	.86	5 = 'strongly agree'
Psychopathy	1.99	.80	

Narcissism had the highest mean score of all Dark Triad traits (M=2.46), which shows it was the most expressed trait of the three, followed by psychopathy (M=1.99) and machiavellianism (M=1.84).

Table 2
Descriptive statistics for the basic human values

Value	M	SD	Scale
Self-Direction	4.79	1.01	
Power	3.29	1.19	
Universalism	4.92	.87	
Achievement	4.21	1.17	
Security	4.27	1.16	1 = 'very much like me'
Stimulation	3.79	1.36	6 = 'not like me at all'
Conformity	3.37	1.13	
Tradition	3.00	1.17	
Hedonism	4.29	1.19	
Benevolence	5.12	.88	

Benevolence and universalism values had the highest mean scores (M=5.12 and M=4.92, respectively), suggesting that the participants identified the least with portraits that expressed these goals. On the other hand, tradition and power values had the lowest mean scores (M=3.00 and M=3.29, respectively), which means that the participants identified the most with portraits that expressed these values.

Table 3 shows correlation analyses between the basic human values, demographic variables and the Dark Triad traits.

Table 3
Correlations between the basic human values, demographic variables and the Dark Triad traits

Variable	Narcissism	Machiavellianism	Psychopathy
Self-Direction	.136**	.041	-.024
Power	.563**	.369**	.248**
Universalism	-.072	-.132*	-.242**
Achievement	.526**	.209**	.114*
Security	.102*	-.088	-.141**
Stimulation	.207**	.206**	.118*
Conformity	.087	-.029	-.037
Tradition	-.035	.000	-.129*
Hedonism	.311**	.207**	.124*
Benevolence	.016	-.156**	-.265**
Gender	-.126*	-.196**	-.200**
Age	-.231**	-.224**	-.175**
Education	.080	-.032	-.017

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

Narcissism had the highest positive correlation with power (r=.563, p<.01), followed by achievement (r=.526, p<.01), hedonism (r=.311, p<.01), stimulation (r=.207, p<.01), self-direction (r=.136, p<.01) and security (r=.102, p<.05), while it was negatively correlated with age (r=-.231, p<.01) and gender (r=-.126, p<.05).

Machiavellianism had the highest positive correlation with power (r=.369, p<.01), followed by achievement (r=.209, p<.01), hedonism (r=.207, p<.01) and stimulation (r=.206, p<.01), while it was negatively correlated with age (r=-.224, p<.01), gender (r=-.196, p<.01), benevolence (r=-.156, p<.01) and universalism (r=-.132, p<.05).

Psychopathy had the highest positive correlation with power (r=.248, p<.01), followed by hedonism (r=.124, p<.05), stimulation (r=.118, p<.05) and achievement (r=.114, p<.05), while it was negatively correlated with benevolence (r=-.265, p<.01), universalism (r=-.242, p<.01), gender (r=-.200, p<.01), age (r=-.175, p<.01), security (r=-.141, p<.01) and tradition (r=-.129, p<.05).

Table 4 shows the first regression model where the basic human values and demographic variables were set as predictors of narcissism.

Table 4
First regression model: the basic human values and demographic variables as predictors of narcissism

Predictors	Standardized β	Model Summary
Self-Direction	-.007	
Power	**.350****	
Universalism	-.053	
Achievement	**.337****	
Security	-.007	
Stimulation	.009	
Conformity	-.017	R=.66
Tradition	-.019	R^2=.44
Hedonism	.059	p < .01
Benevolence	-.092	
Gender	**-.122****	
Age	**-.110***	
Education	.052	

*p < .05, **p < .01

Significant predictors of narcissism were power (β=.350, p<.01), achievement (β=.337, p<.01), gender (β=-.122, p<.01) and age (β=-.110, p<.05). The model was statistically significant (R^2=.44, F(13)=21.63, p<.01) and explained 44% of the variance in narcissism.

Table 5 shows the second regression model where the basic human values and demographic variables were set as predictors of machiavellianism.

Table 5

Second regression model: the basic human values and demographic variables as predictors of machiavellianism

Predictors	Standardized β	Model Summary
Self-Direction	-.022	
Power	**.321****	
Universalism	-.011	
Achievement	.063	
Security	-.095	
Stimulation	.100	
Conformity	-.040	R=.51
Tradition	.055	R^2=.26
Hedonism	.075	$p < .01$
Benevolence	**-.204****	
Gender	**-.120***	
Age	**-.123***	
Education	-.028	

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

Significant predictors of machiavellianism were power (β=.321, p<.01), benevolence (β=-.204, p<.01), age (β=-.123, p<.05) and gender (β=-.120, p<.05). The model was statistically significant (R^2=.26, F(13)=9.68, p<.01) and explained 26% of the variance in machiavellianism.

Table 6 shows the third regression model where the basic human values and demographic variables were set as predictors of psychopathy.

Table 6

Third regression model: the basic human values and demographic variables as predictors of psychopathy

Predictors	Standardized β	Model Summary
Self-Direction	.000	
Power	**.195****	
Universalism	**-.119***	
Achievement	.045	
Security	-.086	
Stimulation	.066	
Conformity	.055	R=.48
Tradition	-.090	R^2=.23
Hedonism	.085	$p < .01$
Benevolence	**-.245****	
Gender	**-.103***	
Age	**-.110***	
Education	-.023	

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

Significant predictors of psychopathy were power (β=.195, p<.01), benevolence (β=-.245, p<.01), universalism (β=-.119, p<.05), age (β=-.110 p<.05) and gender (β=-.103, p<.05). The model was statistically significant (R^2=.23, F(13)=8.01, p<.01) and explained 23% of the variance in psychopathy.

Discussion and conclusion

In this research, we wanted to investigate what motivates the Dark Triad personality traits by looking at their value systems. Based on previous findings, we hypothesized that power, achievement and hedonism would be positive predictors, while benevolence and universalism would be negative predictors of the Dark Triad traits. Our hypothesis was partly confirmed and our results were in line with previous findings. Power was found to be the common predictor of all Dark Triad traits, especially of narcissism. Negative benevolence was the common predictor of psychopathy and machiavellianism, while negative universalism predicted psychopathy only. Achievement predicted narcissism only. Hedonism did not predict any of the three, nor did other basic human values. Also, gender and age were found to be the common predictors of all Dark Triad traits, with the traits being more prominent in males and younger population. Gender differences were consistent with previous research (Jonason & Webster, 2010; Kajonius et al., 2015; Paulhus & Williams, 2002). More research is needed with regards to age and education, since the majority of the participants in our study belonged to a younger and educated population.

What seemed to be crucial for differentiating the behavior and interpersonal relationships of each Dark Triad trait was the combination of power with other basic human values that predicted them. Narcissism was predicted by power and achievement, but not by negative benevolence and universalism. Although pursuing power as a value may harm others and may have negative consequences on social relations, it should not be seen solely in a negative light, since pursuing power can contribute to motivating people to work for group interests and become leaders, and all societies are based on such a hierarchy (Schwartz, 2012). People with high scores on narcissism would try to gain high social status, success and control over the group, but not necessarily by harming the group, since it is perceived as a valuable resource for them and a source of obtaining approval and admiration (Jonason et al., 2015). Narcissism, although selfish in nature, was previously found to be less antisocial than the other two traits, and linked with values oriented towards social goals (Jonason et al., 2018).

However, psychopathy and machiavellianism were predicted by power and negative benevolence, as well as negative universalism in the case of psychopathy, which means not only that they are pursuing self-promotion and dominance over others, but they are also not concerned about the welfare of people close to them, and the welfare of the broader society in the case of psychopathy. Individuals who

score high on psychopathy are motivated by pure antagonism, lack of respect towards rules, social norms and other people in general (Rogoza & Cieciuch, 2018). Jonason and colleagues also found that psychopathy, and machiavellianism to a lesser degree, were linked with general disregard for existence and normative values (Jonason et al., 2018). It could be said that psychopathy is the "darkest" of the three Dark Triad traits in the context of interpersonal relations and society in general.

Kajonius and colleagues also found that individuals that score high on the Dark Triad traits hold values that enhance themselves and exclude others, and suggested that they have a so-called "dark values" system, characterized by self-enhancing values and opposing self-transcending values (Kajonius et al., 2015). The "dark values" entail manipulation of others as a way to fulfil personal interests. Kajonius and colleagues argued that "dark" personalities do not have some hidden evil inside them, rather they have a value system that is focused on selfish outcomes and differs from most people's value systems that are focused on pro-social goals.

Although our study made a contribution to the growing, but still limited, field of research and was the first one conducted in Serbian language, it had certain limitations. The sample size was relatively small. The data was collected online and demographic distribution was unequal, which could limit the generalizability of our results. Correlation and regression coefficients, although significant, were not very high. This may be attributed to the fact that shortened versions of instruments were used with a significant reduction in the number of items, which might not have caught all aspects of the Dark Triad and the basic human values. We would recommend the use of original instruments in future research. More research in this field could provide a deeper insight into the motivation and behavior of the Dark Triad traits, which could be used to prevent undesirable or antisocial behavior through education, policy-making and therapy.

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