

PSYCHOLOGY IN THE FUNCTION OF THE
WELL-BEING OF THE INDIVIDUAL AND SOCIETY

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OF THE INDIVIDUAL AND SOCIETY**

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FOREWORD

The International Conference Proceedings titled „Psychology in the function of the well-being of the individual and society” is a publication from the 17th International Conference “Days of Applied Psychology” held on September 24th & 25th 2021 at the Faculty of Philosophy, University of Niš. This is a traditional annual conference which has been organized since 2005 by the Department of Psychology of the Faculty of Philosophy, University of Niš. 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 publication is an integration of approaches from different fields of psychology to one general topic - *Psychology in the function of the well-being*. It contains 15 reviewed articles which can be classified as original scientific papers. The authors of these articles come from six countries: Portugal, Bosnia and Herzegovina, Slovenia, Bulgaria, Greece, and Republic of Serbia.

The articles are classified into five thematic areas: Personality and individual differences, Clinical Psychology and Mental Health, Developmental and Educational Psychology, Organizational Psychology and Cognitive Psychology.

The first section, *Personality and Individual Differences*, consists of four articles which talk about the place of values in human life, the relationship between humor styles and components of the dark triad, whether it is possible to predict social hypersensitivity based on body image dissatisfaction, and beliefs and fear towards COVID-19 and their relationship with vaccination attitudes.

The section of *Clinical Psychology and Mental Health* contains three articles. One article focuses on reproductive assistance and the experiences of going through an in vitro procedure on women’s mental health. Another study examines the connection between injunctions, self-criticism, self-reassuring, and resilience, and the possibility of the prediction of resilience based on the concepts of injunctions, self-criticism, and self-reassuring. The effects of time perspectives on fear of death in consumers of psychoactive substances is explored in the last article of this section.

The part related to *Organizational Psychology* contains three articles. The first of them explores joint contribution of personality and personal values for predicting citizenship performance at work. The second study focuses on the relationship between health-related nutritional behavior and work-related outcomes, along with general life satisfaction, and determining the role of health-related nutritional behaviour in predicting employee efficiency,

employee engagement and absenteeism. The third study examines whether there are differences in the work-life balance depending on the socio-demographic characteristics and job-related characteristics of healthcare workers.

Finally, the work concerning the effects of stimulus congruence on divided attention is classified in the section *Cognitive Psychology*.

Proceedings *Psychology in the function of the well-being of the individual and society* offers answers to certain questions, but also opens up new areas of future research. 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. Also, we hope that the Proceedings will be of use to those who design various programs to improve people's lives.

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

Niš, September 2022

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**PERSONALITY AND
INDIVIDUAL DIFFERENCES**

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VALUES - MORE IMPORTANT THAN EVER: THE PLACE OF VALUES IN HUMAN LIFE

Abstract

The values are extremely important for individuals and for the society. All major negative societal flaws (violence, war, aggression, criminal, delinquency, lawlessness, corruption, ecological devastation, terrorism, totalitarianism, exploitation, poverty, hunger, starvation, ignorance, fanaticism) are result of behavior that is as odd with basic human values. Thus, a value-congruent behavior is a prerequisite for stable and successful society. In psychology, we need a clear and elaborated theoretical explanation of values. A comprehensive theoretical model of values (CTV; Musek, 2011) was therefore developed in last decades. It comprises all important aspects of the values: the structure, hierarchical organization, development, cross-cultural validity and differences, connections to other important psychological domains and the role of values in our life. The knowledge of values is necessary, yet not enough in order to cope with all risks of individual and societal welfare. Values, that are not actualized in the behavior are useless. Thus, the research of value – behavior relations is extremely important. It also brings us closer to the perennial question: does the behavior that is aligned and congruent with values make us happier or not. Indeed, the research results prove that the life and behavior which are congruent with the values factually correlate with the happiness and general well-being.

Keywords: values, structure of values, behavioral intentions, well-being

Values - More Important Than Ever: The Place Of Values In Human Life

This paper is focused on the psychological research of values. It seems to be little to say about values other than what we already know. This is maybe one of the reasons for rather scarce scientific research of values besides the knowledge we own to philosophers since the ancient time of the history. However, precisely to the psychological and sociological research about values we should thank for the essential improvement in the knowledge of human values beyond the philosophical expertise. Therefore, I would focus just on the scientific insights into the subject of values which are not

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sufficiently known, yet are of a very high importance, both theoretical and practical.

The basis of our theoretical and empirical research of values is the Comprehensive Theory of Values (CTV; Musek, 2011). One of the results of this research is the hierarchical structure of values (displayed and discussed later in Figure 5). A good part of the research results is obtained by the widely used value scales, including my own scale (Musek Value Survey or MVS; Musek, 1993a, 1993b, 2000). By the way, the lowest layer of the structural model depicted in the above-mentioned graph (Figure 5) contains single values that constitute the items of MVS (54 single values).

Importance of Values

Let us begin with a simple question: how important are the values? This sounds like a rhetorical question, but it is not. In these days, as well as already many times before, we can hear that ethical and moral violation are not major factor of societal and individual risks and, consequently, the ethics and values are not so important. Yet, this is entirely untrue statement. Daily and repeatedly, we see reports of accidents and incidents that would never happen if the prescriptions, law and moral or ethical rules were considered. Not to mention war, violence, criminal, delinquency, corruption, exploitation, poverty, famine and other societal risks. Apart of natural catastrophes, the majority of societal and individual risks are at least partly consequence of moral/ethical violations.

The truth is, that importance of values as the beliefs or conceptions of the guiding principles in our life has been recognized since the ancient times. In the birth of axiology, the philosophers like Plato and Aristotle (1971, 1980; see also Vorländer, 1977) proposed the classical trinity of values, the good, the truth and the beauty (*bonum, verum, pulchrum* in Latin), that has been later supplemented by early Christian philosopher Saint Augustine with the supreme Christian values of faith, hope and love.

In psychology, the research of values has been almost neglected till the seminal work of Rokeach (1968, 1973). The notable exceptions are the theoretical taxonomies of values developed by Spranger (1930) and Veber (1924), then the psychometric efforts of Allport et al. (1936) as well as a few empirical studies that only tangentially contribute to the knowledge of values. Rokeach's investigations tremendously stimulated the empirical research of values in psychology especially in social psychology. This research culminated in the work of Schwartz (1992; Schwartz & Bilsky, 1987, 1990), Hofstede (1980, 2001), Triandis (1990, 1995), Inglehart (1977, 1990) and others. Their work revealed the major role of values in the understanding of not only our individual life but also the life of all cultural systems of mankind. As Smith and Bond (1998, p. 69) say: "The best conceptual frameworks currently available to guide cross-cultural research are those provided by studies of value differences".

Reviewing the scientific measurement of the values, Hofstede (2001, p. 8) described two comprehensive theoretical models of the values, namely the theory

of Schwartz (1992) and the theory of mine (Musek, 1993), both representing an extension and refinement of classic Rokeach model. Both models include the respective dimensional hierarchy of values. In the Schwartz model, several low-ordered values and value categories can be subsumed into two dimensions, openness to change versus conservation and self-transcendence versus self-enhancement. Similarly, in Musek theory of values (Musek, 1993, 1998, 2000, 2011), lower-order value categories can be classified into two higher-order dimensions, Apollonian and Dionysian values. However, higher-order dimensions in both models substantially correlate (Musek, 2000, pp. 72–73). Apollonian values are associated with self-transcendence ($r = .482$) and conservatism (.480), while Dionysian values converge with the self-enhancement (.609) and openness for experience (.518) (Musek, 2008). Thus, the structural hierarchies of Schwartz and Musek model largely convene.

As the guidelines of human attitudes and behavior, the values are extremely important for individuals and for the society. First of all, we may test the importance of values by a simple logical reasoning. Imagine that human beings would always behave in alignment with basic values like life, health, safety, love, mutual care, freedom, respect of others, and others. All major societal flaws (violence, war, aggression, criminal, delinquency, lawlessness, corruption, ecological devastation, terrorism, totalitarianism, exploitation, misery, poverty, hunger, starvation, ignorance, fanaticism and others) are result of behavior that is as odd with basic human values (see Figure 1). If we would behave in concordance with our values, there would be no place of any societally undesired behavior. Thus, a value-congruent behavior is a *conditio sine qua non* for stable and successful society and the strengthening of value-aligned behavior is a planetary task - however utopian this may sound.

Figure 1. Societal risks as a consequence of behavior, discordant with basic human values.



Note. Societal risks as a consequence of behavior, discordant with basic human values. All major societal risks or flaws (violence, war, aggression, criminal, corruption, ecological harm, exploitation, poverty, hunger, terrorism and others) are result of behavior that is in conflict with basic human values.

There are also other reasons for stressing the importance of values in our life. We can summarize them pointing at following thoughts. The values are so important because:

- They are guides for the value-congruent behavior;
- The value-congruent behavior is the base for:
 - o personal well-being (mental and physical; longevity),
 - o organizational well-being,
 - o better social adjustment and effectiveness,
 - o better interpersonal relations (partners co-workers),
 - o higher working excellence,
 - o higher self-esteem,
 - o better stress-management.

The Place of Values in Psychological Trilogy

Psychological research convincingly demonstrated that the values represent and occupy a great field of attitudes and beliefs, one of the three great domains of the psychological trilogy (personality; attitudes, beliefs and values; cognitive abilities). In psychology, we need a clear and elaborated theoretical explanation of values. A comprehensive theoretical model of values (CTV) was therefore developed in last decades. It comprises all important aspects of the values: the structure, hierarchical organization, development, cross-cultural validity and differences, connections to other important psychological and behavioral domains and the role of values in our life.

We may start with the assumption that values, together with related attitudes and beliefs represent one of the three pillars of psychological trilogy, exactly as the Figure 2 depicts.

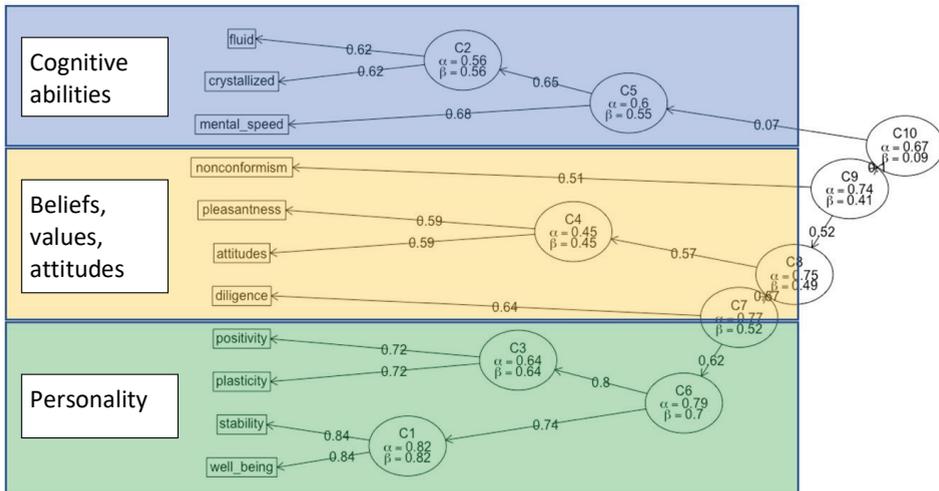
Figure 2. *The place of values in the psychological trilogy: Cognitive abilities, personality and beliefs.*



This hypothesis can be tested empirically. We have done it by the multivariate analyses of the large, representative sample of US population, used in famous MIDUS I, II and III data. We collected the data of 4963 participants from both sexes (2316 males and 2647 females) in the age range from 28 to 84 years ($M = 55.43$ years, $SD = 12.45$). For illustration, let us inspect the results of rather sophisticated cluster analysis technique ICLUST (see the Figure 3). These results clearly show that cognitive abilities, values with beliefs and attitudes and personality can be classified into three easily separable clusters.

Additionally, we may confirm the hypothetical psychological trilogy by simple generalization of the scientific results in the last century of psychological research: it is clear that cognitive abilities correlate among themselves higher than with other variables. Also, personality variables correlate higher among themselves than with abilities or values. And finally, values with related beliefs and attitudes correlate higher among themselves than with personality traits or abilities.

Figure 3. Cognitive abilities, beliefs (including values and attitudes), and personality form three separate clusters of the psychological universe (Musek, 2021).

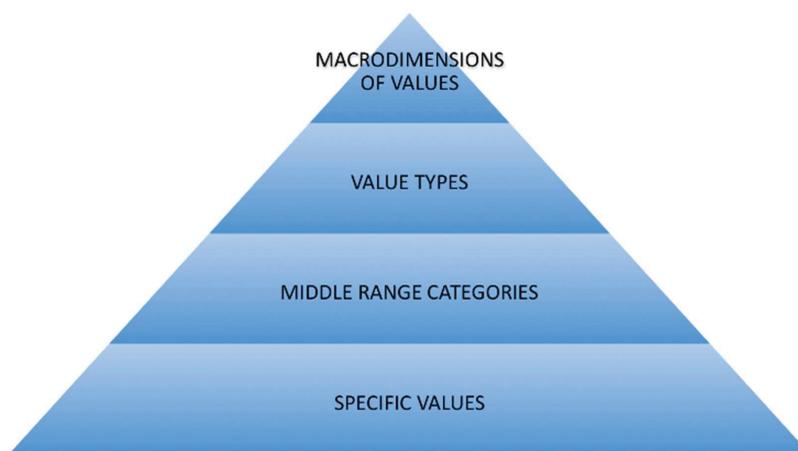


Note. Cognitive abilities, beliefs (including values and attitudes), and personality form three separate clusters of the psychological universe (Musek, 2021). Fluid = fluid intelligence, crystallized = crystallized intelligence, mental_speed = speed of mental functions, nonconformism = non-conformist attitudes, pleasantness = friendly attitudes, attitudes = composite attitudes, diligence = values of hard-working and diligence, positivity = positive affect as a trait, plasticity = extraversion and openness, stability = emotional stability and conscientiousness, well-being = well-being as trait.

The Comprehensive Theory of Values (CTV)

Unfortunately, the empirical research of values has been very rarely integrated into a comprehensive and unified theoretical framework. Therefore, I have recently constructed a theoretical model that includes the most important aspects of human values (Musek, 2000, 2011). The model, which is displayed in Figure 4, is clearly hierarchical. It extends from the level of single or specific values to the level of middle-order or middle-range value categories, the level of higher-order or higher-range categories (value types) and the level of highest-order or highest-range categories (macro-dimensions of values).

Figure 4. Hierarchical model of values (Musek, 2011, p. 245). It comprises four levels described in the text.



The model subsumes five theoretical sub-models that comprise the hierarchical structure of values or the taxonomy of values (the structural or descriptive sub-model), the causal factors of values (etiological sub-model), the development of values (developmental sub-model), the transcultural consistency of values (cross-cultural sub-model), and the connections of values with other psychological and demographic variables (transversal sub-model and predictive sub-model). Thus, a comprehensive model of values has been built, including the taxonomical, etiological, developmental and cross-cultural perspective of values as well as the correlations and predictive relationships of the values with other important psychosocial variables.

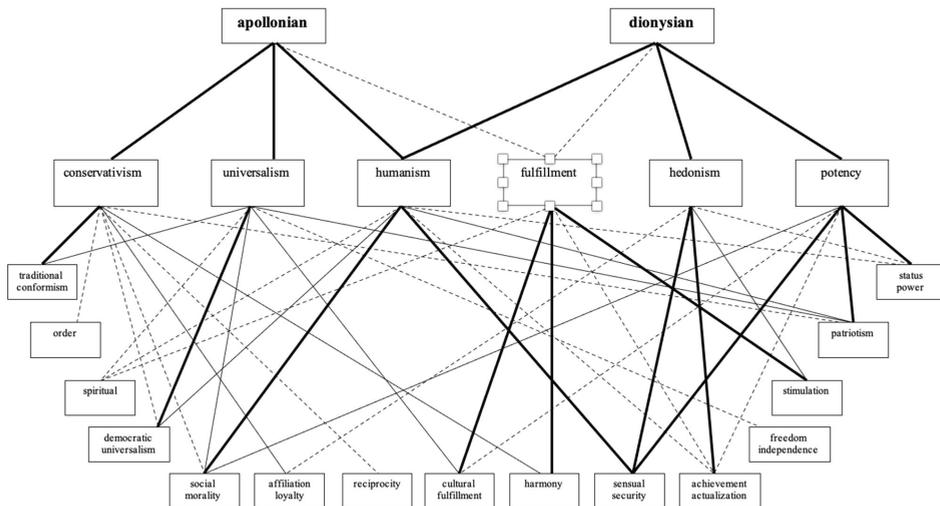
Our research revealed clearly the psychological content of the structural hierarchy of values (see Figure 5). Specific single values, constituting the bottom of the value hierarchy (for example: honesty, benevolence, diligence, beauty, truth, faith, power, reputation, glory, joy, exciting life and many others) are omitted in the figure for the sake of the space. On the basis of their correlations, different

middle range categories of values can be identified (from traditional conformism on the left to the status/power values on the right). At the next level, we can find six value types, based on the correlations between middle range categories: conservatism, universalism, humanism, fulfillment, hedonism, potency. Value types still correlate, forming thus two very general macro-dimensions of values, labeled Apollonian and Dionysian values.

The categories or dimensions of values, established in our model, are very general, almost universal. They can be found in all major contemporary cultures or civilizations. However, although the categories are almost universal, the hierarchical order of them can be different in different culture settings. For example, in the individualistic cultures, the Dionysian values are ranked relatively higher and Apollonian values relatively lower than in the collectivistic cultures.

Our research revealed also clear developmental trends in the value ratings. After the teen age and adolescence, the ratings of Dionysian values decrease over the lifespan, while the ratings of Apollonian values remains approximately the same.

Figure 5. *The structural hierarchy of values based on the results of our empirical research (Musek, 2022).*



Note. The structural hierarchy of values based on the results of our empirical research (Musek, 2022). It confirms the hypothetical model shown in the Figure 4. Note that numerous specific single values that constitute the bottom of value hierarchy are omitted in the figure for the sake of the space. See the details, reported in the text.

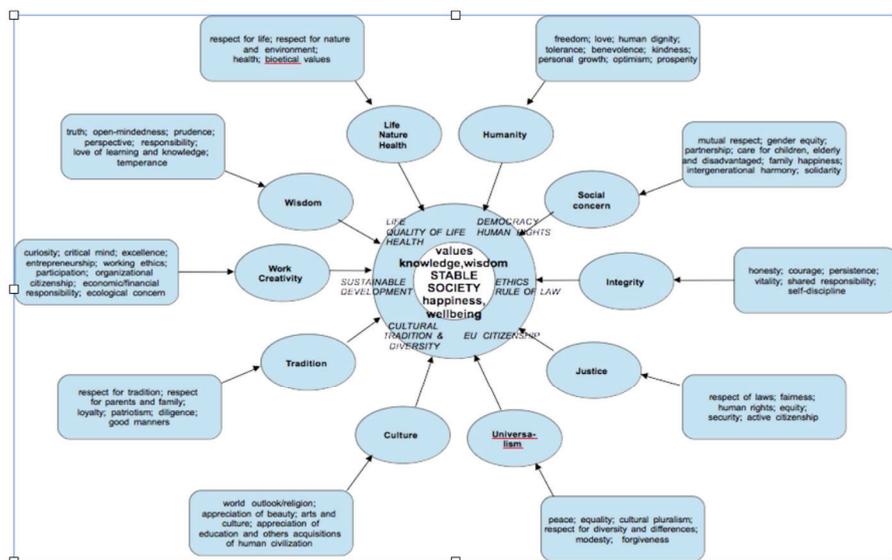
Which Values are Most Important?

The social order is based on the values, yet which values are most significant in this concern? Which values should be considered as most important in the further implementation of the societal integration in the EU and worldwide? Berlin Declaration 2007 put in the focus several universal values: human dignity, human rights, gender equality, peace, freedom, democracy, rule of law, mutual respect, shared responsibility, prosperity, security, tolerance, participation, justice and solidarity. In 2013, a special document was developed by Institute of Ethics and Values (IEV, Ljubljana, Slovenia) in order to determine, which empirically confirmed values would closely correspond to the values declared in the Berlin Declaration. The document was labeled European Ethics and Values Framework (EEVF).

EEVF was developed to fill the need for a common ground with regards to European ethics and values. It is an evidence-based framework built both on European cultural and historical tradition as well as on leading contemporary models of values. EEVF relies on Berlin Declaration 2007 and considers the empirical as well as theoretical models of values and virtues.

Schematic presentation of the European Ethics and Values Framework (EEVF) is displayed in the Figure 6. As we can see, the scheme contains the values on four levels: (1) the level of central goals (stable society of values, knowledge, wisdom, happiness and well-being as the final societal goal), (2) the level of central concerns (six core concerns), (3) the level of ten value domains and (4) the level of respective ten groups of values, virtues and character strengths.

Figure 6. Schematic presentation of the EEVF (modified after Musek, 2015, p. 44).



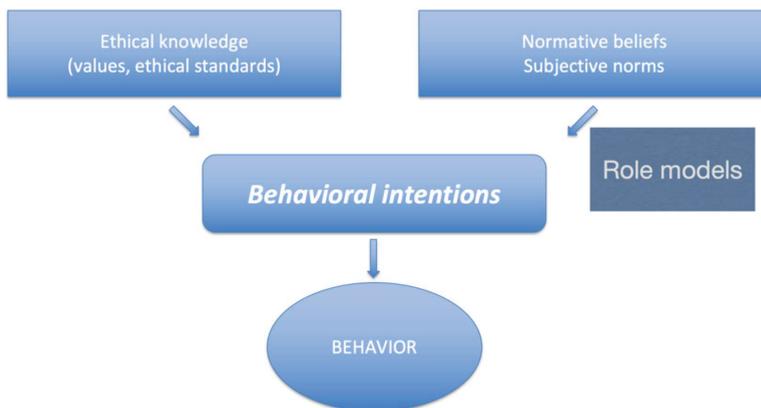
Note. Schematic presentation of the EEVF (modified after Musek, 2015, p. 44). It contains the values on four levels: (1) the level of central goals (stable society of values, knowledge, wisdom, happiness and well-being as the final societal goal), (2) the level of central concerns (six core concerns), (3) the level of ten value domains and (4) the level of respective ten groups of values, virtues and character strengths.

The Values – Behavior Relationship

The knowledge of values is necessary, yet it is not enough in order to cope with all risks of individual and societal welfare. Another requirement is therefore crucial, namely the above-mentioned alignment of values and behavior. Values, that are not accomplished or realized in our behavior are useless. Thus, the research of value – behavior relations is extremely important in psychology. It is one of essential pillars in the scientific basis of a stable society and has therefore tremendous practical consequences.

Theoretical basis for the understanding the values - behavior relationship is very robust. The values behave similarly as the attitudes in the well-known models of Ajzen and Fishbein (2005), namely in the theory of planned behavior and in the theory of reasoned action (see Figure 7). It is very important to know that a mere knowledge of values and ethical standards is not sufficient to elicit value-aligned behavior. Such behavior could be triggered only by so-called behavioral intentions. The knowledge of values and ethical standards must be supported by beliefs that values must be realized in behavior (normative beliefs and subjective norms presented by role models such as parents, teachers or other authorities). If so, the proper intentions to behave in desired manner (behavioral intentions) will be definitely formed within a person. Only properly developed behavioral intentions may then finally instigate the desired value-congruent behavior.

Figure 7. *The role of behavioral intentions in the values – behavior relationship (Musek, 2020, p. 19).*



Note. The role of behavioral intentions in the values – behavior relationship (Musek, 2020, p. 19). A mere knowledge of values and ethical standards is not sufficient to trigger value-congruent behavior. Yet, if this knowledge is supported by beliefs that values must be realized in behavior (normative beliefs and subjective norms presented by role models), the proper intentions to behave in desired manner (behavioral intentions) will be developed. Behavioral intentions then may instigate the desired value-congruent behavior. See also the text.

Values and Well-Being

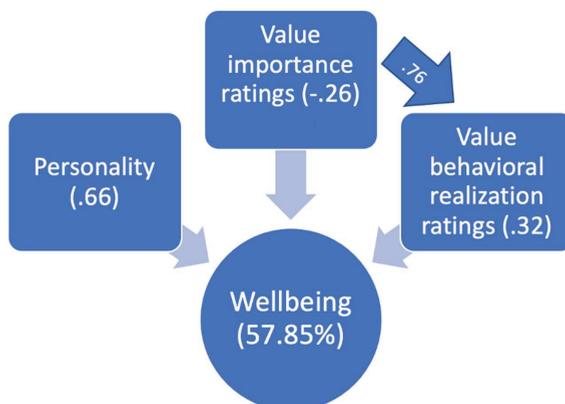
Now, our discussion brings us closer to the perennial question connected with the role of values in our life: does the behavior that is aligned and congruent with values make us happier or not. Thus, the final part of my lecture will be focused on the empirical answers to that question. And, as research results are proving, the life and behavior which are congruent with the values factually correlate with the happiness and general well-being.

According to our study (Musek, 2015), value orientations are statistically significant predictor of well-being, however a weaker predictor than personality. They explain about 25% of the variance in psychological well-being. But this fact is not surprising: psychological well-being does not depend much on what our personal hierarchies and value systems are, but it is much more dependent on how values are fulfilled or realized in our behavior and life.

Figure 8 depicts main results of the above-mentioned research. A very important result of this research is the finding that the behavioral realization (fulfillment) of values is in fact not only important, but also a strong predictor of mental well-being. The realization of values explains as much as 32 percent of the variance in psychological well-being. In terms of predictive power, it lags behind the influence of personality (66 percent) what can be expected, yet exceeds the direct influence of the value orientations themselves (just about 26 percent). It should be noted that the correlations between the ratings of value importance and ratings of value behavioral realization is high (.76). Our analyzes thus clearly confirm the substantial impact of the realization of values on mental well-being.

In this way, we can offer empirical evidence for the appropriateness of the assumption that living and behaving in accordance with values actually makes people happy. It definitely contributes to mental well-being. And it seems very likely that the realization of values is one of the most important internal factors of mental well-being, right behind the influence of our personality traits.

Figure 8. *The impact of values and personality on the well-being (modified after Musek, 2015, p. 186) .The details are reported in the text.*



Overall Discussion and Conclusions

This lecture was focused on the theoretical and empirical findings that demonstrate the great scientific and social importance of values. The Comprehensive Theory of Values (CTV; Musek, 2011) was introduced in order to provide useful theoretical framework for the topic. Consequently, the hierarchical structure of the values, the place of the values within different psychological domains and the connections between values and behavior were discussed in more details. Then the role of the values in the life was especially emphasized in connection with the question how the values and the value-congruent behavior contribute to the psychological well-being and happiness.

Finally, we should draw some conclusions after this excursion into the world of values:

- First, the importance of the values must be severely stressed. Not just their importance, but their vital role for societal welfare, for human rights, yet also for preservation of life, health, environment and nature.
- Consequently, the scientific - including psychological - research of values is of tremendous theoretical and practical importance. A comprehensive theory of values is therefore necessary in order to clarify the place of values in the psychological trilogy.
- The values without the appropriate behavior are meaningless. Thus, we must know to explain the ways, how the values can be effectively transformed to the value-congruent behavior. The behavioral intentions developed by the influence of role models in the family and in the school are crucially important in order to establish value-aligned behavior.

- At the end, we addressed the question, how the values are related to the societal and individual well-being. We must emphasize that value-congruent behavior is significantly connected to the well-being and happiness. Thus, the value-aligned behavior pays not only for society, yet also for individual human being.

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RELATIONSHIP BETWEEN HUMOR STYLES AND COMPONENTS OF THE DARK TRIAD

Abstract

The study examines the relationship between four humor styles and the personality traits included in the Dark Triad – Narcissism, Machiavellianism and Psychopathy. For this purpose, we present a brief overview of the evolution of scientific understanding of the sense of humor as a psychological construct. For the current study the sense of humor is examined with the Humor Styles Questionnaire, developed by Rod Martin (2003). This instrument classifies different types of humor in relation to two dimensions. The first dimension in this model has to do with whether humor is used to enhance the self, or to enhance one's relationships with others. The second dimension makes distinction between humor that is benevolent and benign and humor which is potentially detrimental and injurious. The intersection of these two dimensions forms four styles of humor: Affiliative (relatively benevolent humor, used to improve relationships with others), Aggressive (humor that is directed at others but is offensive and aggressive), Self-enhancing (benevolent humor, used to improve one's own mood or sense of self), Self-defeating (offensive and harmful humor directed at oneself). The Dark Triad is examined with Paulhus' Short Dark Triad scale (2013). Participants are 375 respondents from Bulgaria, ages from 18 to 72 (mean age 43). Significant correlations were found between Aggressive humor and all three components of the Dark Triad, with the connection between Aggressive humor and Psychopathy being the strongest ($r = .32$). Surprisingly, Affiliative humor shows a moderate positive correlation with Narcissism ($r = .36$). The article discusses possible interpretations of these results and proposes recommendations for future research on humor.

Keywords: humor styles, narcissism, machiavellianism, psychopathy

Introduction

Humor and Well-Being

Throughout the 20th century, psychologist and researchers have been interested in individual differences in humor (Martin, 1998). This interest continues today, as part of positive psychology, which deals with adaptive qualities such as optimism, faith, courage and also includes humor (Seligman & Csikszentmihalyi, 2000).

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As a psychological construct, the sense of humor has been conceptualized in various definitions by different researchers. Rod Martin offers a brief summary of the prevailing theories regarding the nature of humor (Martin et al., 2003). Humor and the sense of humor has been viewed as: 1) cognitive ability: the ability to understand, remember and create jokes (Feingold & Mazzella, 1993); 2) aesthetic response to stimuli: appreciation of specific types of humorous stimuli (Ruch & Hehl, 1998); 3) lasting behavioral pattern: the behavioral tendency to laugh or smile frequently, to tell jokes or display enjoyment when hearing jokes (Craik et al., 1996); 4) an emotion-related temperament trait: a consistent trait like cheerfulness (Ruch & Kohler, 1998); 5) attitude: positive or negative attitude towards telling jokes or being told jokes (Svebak, 1996); 6) coping defense mechanisms: tendency to use humor as a form of dealing with stressful events, hardship and adversity (Lefcourt & Martin, 1986). All of this different aspects of the sense of humor are examined by different methods. For example, when humor is seen as a cognitive ability, it is measured by maximum performance tests, when it has been viewed as an aesthetic response it's researched through ratings of funniest items, when it is considered a behavioral tendency, it is registered through observer ratings. All these different components of the sense of humor are not inter-correlated and are not necessarily related to well-being and also don't necessarily view humor as a health-relevant dimensions (Kuiper & Martin, 1998; Martin, 2007).

The lack of stronger correlations between sense of humor and psychological well-being is somehow puzzling and creates an interesting paradox. As Martin notes, despite the common belief in Western societies that a sense of humor is an important element of healthy mental functioning, many studies using and early self-report one-factor humor scales show a weak link between a sense of humor and mental, physical and social well-being (Martin et al., 2003). Correlations, when significant, are typically less than .25 and suggest that humor accounts at best for less than 6% of the variance in mental health (Thorson et al., 1997). Martin believes that the reason for these weak correlations is the fact that early researchers view humor as one-factor construct and the traditional early scales of measuring humor do not make a distinction between potentially adaptive humor styles and less favorable forms of humor, which may even be detrimental to mental health (Martin, 2007). This lack of distinction differs from the views of earlier theorists such as Freud (1928), Allport (1961), and Maslow (1954), who emphasize that healthy mental functioning is associated with certain styles of humor (e.g., friendly, self-ironic) while other forms of humor can be harmful to mental well-being (sarcastic, contemptuous, demeaning humor).

Humor Styles Questionnaire (HSQ)

In response to this existing need for adequate methodology, Rod Martin and his colleagues develop a new test to measure their sense of humor. Analyzing the

various concepts of humor, Rod Martin’s team reaches a 2 x 2 conceptualization - that is, two factors, each of which has two levels. According to them, this formula generally captures most of the components of the different understandings of humor. Thus, they created the Humor Styles Questionnaire (HSQ; Martin et al., 2003).

The first aspect concerns where *humor is directed to*. Is it: 1) directed to the outside world – as a method of developing relationships with others. In this sense, humor “oils the wheels of communication and permits the establishment of social relations with a minimum of conflict” (Ziv, 1984, p. 32); 2) directed to the inner and intrapsychic world, so that the person can affirm and establish themselves and their own self. The two positions in this aspect reflect the differences between individualism, autonomy and motivation for power, on the one hand, and connection, collectivism and motivation for intimacy, on the other.

The second aspect concerns *what the humor actually is*. The two possible options here are: 1) humor that is relatively kind and benevolent. With this style, the person expresses overall positive attitudes towards others or towards oneself; 2) humor that is potentially offensive and harmful - either to the self or one’s relationship with others.

At the intersection of these two dimensions, four possible styles of humor emerge.

Table 1. *Rod Martin’s four humor styles*

	Directed at others	Directed at the self
Kind and benevolent	<p>Affiliative humor Benevolent humor used to improve one’s relationships with others</p>	<p>Self-enhancing humor Benevolent humor used to improve one's mood or sense of self.</p>
Potentially offensive and harmful	<p>Aggressive humor Offensive and harmful humor directed at other people, used to attack, humiliate or manipulate others.</p>	<p>Self-defeating humor Malicious humor directed at one's own self.</p>

Martin and his team conceptualized each of the four humor styles as follows (Martin et al., 2003):

Affiliative humor. This is a friendly, tolerant use of humor, benevolent to others and to one’s own person. People with high scores on this humor style like to joke, engage in fun conversations with other people, use humor as a means to connect with other people and to reduce interpersonal tension. To entertain others, they may say something cheerful about themselves, but maintain their sense of self-esteem and self-acceptance.

Self-enhancing humor. This style expresses a tendency to hold a humorous perception of life even in situations of stress or unpleasant events. The dimension

is related to the concepts of humor as a coping mechanism or a mechanism for emotional self-regulation. It is closest to Freud's understanding of humor as a mature defense mechanism that allows both the avoidance of negative emotions and the maintenance of a realistic perspective on the situation.

Aggressive humor. This style is associated with the use of sarcasm, mean remarks or hurtful jokes, used to embarrass other people. It is also associated with attempts to manipulate others by implying threats of ridicule. It is generally associated with the tendency to use humor without realizing its potential impact on other people (e.g. racist jokes) and includes compulsive use of humor in which the person cannot contain his or her impulse to say funny things, even when they are potentially rude or degrading to others.

Self-defeating humor. This style is characterized by an increased use of self-deprecating humor. It reflects a person's tendency to ridicule themselves in a humiliating way in order to gain approval, and includes a person's tendency to laugh in front of others even at rude jokes directed at themselves. This humor is not used as a means to truly connect with others, but as a mechanism to avoid the stress of not being included in the group. This style of humor can also be used as a protective denial of feelings, a tendency to cover up negative feelings and to avoid constructive problem solving.

Correlations between Humor Styles and Other Personality and Well-Being Measures

Since its creation, multiple researchers have tried to use HSQ for finding a relationship between the four theorized humor styles and various personality traits and well-being indicators (Martin et al., 2003; Ruch & Heintz, 2014; Sirigatti et al., 2014; Stieger et al., 2011). *Affiliative humor* is positively correlated with self-esteem (.43) and extraversion (.47) and negatively correlated with anxiety and hostility. *Self-enhancing humor* is negatively correlated with depression (-.40), anxiety (-.33) and neurotism (-.37) and positively correlated with self-acceptance (.48) and general well-being (.46). *Aggressive humor* is positively correlated with aggression (.41) and hostility (.29) and negatively correlated with agreeableness (-.59) and conscientiousness (-.37). *Self-defeating humor* is positively correlated with hostility (.38) and neurotism (.35) and negatively correlated with self-esteem (-.36) and conscientiousness (-.34) (Martin et al., 2003; Ruch & Heintz, 2014; Sirigatti et al., 2014; Stieger et al., 2011).

The HSQ has been previously used in Bulgarian research by Martin Tsenov and Ergyul Tair in the context of emotional intelligence, self-acceptance and acceptance by others (Tsenov, 2017). In their study Affiliative and Self-enhancing humor show correlations with emotional efficacy (.37 and .29) and general emotional intelligence (.42 and .27). Aggressive humor has negative relationship with emotionality (-.25) and emotional control (-.29) and Self-defeating humor has a negative relationship with general emotional intelligence (-.34) and acceptance by others (-.32).

The current study aims to explore the possible relationship between the four humor styles and the components of the Dark triad. The Dark triad was chosen, because as a concept it lies in the interesting intersection between personality traits and well-being. The relationship has been researched in Western societies (Martin et al., 2012; Veselka, 2010), but in the Bulgaria and, to the knowledge of the researcher, not in Eastern Europe.

Dark Triad

The term Dark Triad refers to three distinct but related personality traits: narcissism, Machiavellianism and psychopathy (Paulhus & Williams, 2002). Paulhus and Williams acknowledge that the three concepts that make up the Triad share common tendencies toward revenge, emotional coldness, aggression, and a desire for self-promotion. The three traits reflect an orientation toward quick and immediate rewards rather than delayed and long-term ones (Jonason et al., 2009).

Today, the Triad is called the “Psychology of James Bond” (Jonason et al., 2008; Jonason et al., 2010), and individuals who have high scores on the Dark Triad personality traits are described as living their own social life (Jonason et al., 2010).

The Dark triad includes components:

- Narcissism, which is characterized by a sense of grandeur, pride, selfishness and lack of empathy (Kohut, 1977);
- Machiavellianism, which is characterized by manipulation and exploitation of others, it has a cynical disregard for moral norms and a focus on self-interest, served when needed by deception (Jakobwitz & Egan, 2006);
- Psychopathy, which is characterized by persistent antisocial behavior, impulsivity, rudeness and ruthlessness (Skeem et al., 2011).

Paulhus and Williams, who introduce the term Dark Triad note that these are *unpleasant* but *not pathological* personality traits (Paulhus & Williams, 2002). And yet most research on the Dark Triad focuses mainly on the negative aspects of these characteristics like the negative manifestations of these traits in communication and interpersonal functioning and other negative consequences for the person who scores high on those traits (Chabrol et al., 2009; Hodson et al., 2009). A new approach toward the traits from the Triad that seeks a relationship between them and some positive aspects of the psychological functioning – like the humor styles – could be beneficial for creating a better understanding of the components of the Triad.

The relationship between humor styles and the Dark Triad traits of personality has been researched (Veselka et al., 2010). Significant correlations were found between Affiliative humor and Narcissism (.20), Aggressive humor and Psychopathy (.41), Aggressive humor and Machiavellianism (.42), and Self-defeating humor and Machiavellianism (.29).

The relationship between the humor styles and the traits from the Dark Triad has not been explored in Bulgarian studies.

Research Goals and Hypotheses

The main goal of the study is to examine the relationship between humor styles and the three traits from Dark Triad in the Bulgarian socio-cultural environment. The study also aims to introduce a new translation of the HSQ with satisfying psychometrical characteristics.

The current study proposes two hypotheses, based on the presented literature review:

H1. The positive humor styles - *Affiliative* and *Self-enhancing* - are not expected to have a correlation with the elements of the Dark Triad.

H2. The negative (potentially offensive and harmful) humor styles – *Aggressive* and *Self-defeating* are expected to have a positive correlation with the elements of the Dark Triad.

Method

Sample

The study included 375 participants. Participants were recruited online – the link to the complete form of the questionnaire was published in social media platforms and readers were asked to participate in a psychological study about humor.

In terms of gender, the sample is highly unbalanced: 87.2% of the respondents are women (327), 12.8% are men (48). Participants ranged in age from 18 to 72 years, with a mean age of 42.64 with a standard deviation of 13.68. Education: 0.3% have primary education, 28.8% secondary education, 21.1% bachelor's degree, 46.7% master's degree, 3.2% PhD degree. Place of residence: 51.7% live in Sofia, 30.9% in another large city in Bulgaria, 13.9% in a small town, 3.5% in a village.

Measures and Procedure

The respondents were asked to fill two questionnaires and give some demographic data (age, gender, education, place of residence). The study was done entirely online in the context of the global Covid-19 pandemic. The forms were open from 1st of November 2020 to 10th of December 2020. Participating in the study took from 10 to 15 minutes for most participants. Participants did not receive any compensation for their participation.

Two psychological scales were used.

A New Translation Of Humor Styles Questionnaire (Martin et al., 2003).

The scale includes 32 items that are rated on five-point Likert scale. Participants express how much they agree or disagree with the said item. Each of the four humor styles is measured by eight items.

Items from the Affiliative humor subscale include: “I laugh and joke a lot with my closest friends.” and “I usually don’t like to tell jokes or amuse people.” (reversed scoring).

Items from the Self-enhancing humor subscale include: “Even when I’m by myself, I’m often amused by the absurdities of life.” and “If I am feeling upset or unhappy I usually try to think of something funny about the situation to make myself feel better.”

Items from the Aggressive humor subscale include: “If I don’t like someone, I often use humor or teasing to put them down.” and “Even if something is really funny to me, I will not laugh or joke about it if someone will be offended.”(reversed scoring)

Items from the Self-defeating humor subscale include: “I will often get carried away in putting myself down if it makes my family or friends laugh.” and “If I am having problems or feeling unhappy, I often cover it up by joking around, so that even my closest friends don’t know how I really feel.”

A Bulgarian version of the Short Dark Triad (SD3) scale by Jones and Paulhus (2013), translated by Kabadjova (2017).

The scale includes 27 items that are rated on five-point Likert scale. Participants express how much they agree or disagree with the said item. Each of the three traits is measured by nine items.

Items from the Narcissism subscale include: “Many group activities tend to be dull without me.” and “I hate being the center of attention.” (reversed scoring)

Items from the Machiavellianism subscale include: “Make sure your plans benefit you, not others.” and “Avoid direct conflict with others because they may be useful in the future.”

Items from the Psychopathy subscale include: “People who mess with me always regret it.” and “I have never gotten into trouble with the law.” (reversed scoring)

Results

The analysis of the data began with the descriptive statistics and psychometric values of the four humor styles subscales. The current study is using a new translation, so it is important to know if the scales would show good psychometric values. The results can be seen on Table 2.

Table 2. Descriptive statistics of the four humor styles subscales.

Scale	N of items	Min	Max	M	SD	Cronbach's alpha	Skewness	Kurtosis
Affiliative humor	8	13	40	32.74	5.62	.80	-0.89	0.42
Self-enhancing humor	8	13	40	29.08	6.38	.81	-0.47	-0.61
Aggressive humor	8	10	38	22.60	5.63	.66	0.28	-0.29
Self-defeating humor	8	8	40	22.73	6.37	.76	0.14	-0.34

Three of the four scales show good levels of internal consistency ($\alpha > .75$). The exception is the Aggressive humor subscale, which still has a Cronbach's alpha higher than .65. Still, future studies using this translation of the scale are advised to keep in mind the possible limitations of the current translation and encourage to investigate the possible reasons for the said limitations.

The used statistical method for hypothesis testing Pearson's correlation. The correlation between each of the four humor styles and each of the three traits from the Dark triad was explored. The results can be find on Table 3.

Table 3. Correlations between Humor Styles and the Dark Triad

	AF	SE	AG	SD	N	M	P
Affiliative humor	1						
Self-enhancing humor	.43**	1					
Aggressive humor	.37**	.23**	1				
Self-defeating humor	.28**	.31**	.38**	1			
Narcissism	.36**	.14**	.24**	.20	1		
Machiavellianism	-.01	-.02	.16**	.07	.28**	1	
Psychopathy	.10*	.05	.32**	.19**	.25**	.50**	1

Note. ** $p < .01$, * $p < .05$

Significant correlations were found between Affiliative humor and Narcissims ($r = 0.36$) and Affiliative humor and Psychopathy (0.10). The Self-enhancing humor was found to be positively correlated with Narcissism ($r = 0.14$). The Aggressive humor was found to be significantly correlated with all three components of the Dark triad: Narcissism ($r = .24$), Machiavellianism ($r = .16$) and Psychopathy ($r = .32$). The final style – Self-defeating humor correlates significantly only with Psychopathy ($r = .19$).

In accordance with our theoretical model we have found some intercorelations between the humor styles: styles that share a certain aspect intercorelate more strongly than styles that don't share an aspect. Affiliative humor has a higher correlation with Self-enhancing humor (.43) – both are kind and benevolent and with Aggressive humor (.37) – both are directed at others, than with the Self-defeating humor (.28). Similarly, the Self-enhancing style correlates more strongly with Self-defeating humor (.31) – both are directed at the self, than with the Aggressive humor (.23), because Aggressive humor is neither benevolent nor directed at the self – so it shares no aspects with the Self-enhancing style.

For a deeper understanding of these results, a linear regression analysis was conducted, with the three components of the Dark Triad taken as possible predictors for each of the four humor styles. The results can be found on Tables 4 – 7.

Table 4. *Linear regression analysis – components of the Dark Triad as predictors for Affiliative humor ($R^2=0.15$)*

	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>t</i>	<i>p</i>
Model	25.98	1.47		17.57	.00
<i>Narcissism</i>	0.36	0.04	.39	7.76	.00
<i>Machiavellianism</i>	-0.15	0.05	-.17	-3.02	.00
<i>Psychopathy</i>	0.09	0.05	.08	1.59	.11

Table 5. *Linear regression analysis – components of the Dark Triad as predictors for Self-enhancing humor ($R^2=0.03$)*

	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>t</i>	<i>p</i>
Model	26.20	1.80		14.55	.00
<i>Narcissism</i>	0.17	0.05	.16	3.08	.02
<i>Machiavellianism</i>	-0.11	0.06	-.11	-1.84	.06
<i>Psychopathy</i>	0.08	0.07	.06	1.15	.25

Table 6. *Linear regression analysis – components of the Dark Triad as predictors for Aggressive humor ($R^2=0.13$)*

	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>t</i>	<i>p</i>
Model	13.63	1.50		9.04	.00
<i>Narcissism</i>	0.17	0.04	.18	3.56	.00
<i>Machiavellianism</i>	-0.03	0.05	-.04	-0.72	.46
<i>Psychopathy</i>	0.30	0.05	.28	5.09	.00

Table 7. *Linear regression analysis – components of the Dark Triad as predictors for Self-defeating humor ($R^2=0.04$)*

	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>t</i>	<i>p</i>
Model	20.70	1.78		11.60	.00

<i>Narcissism</i>	-0.47	0.05	-.04	-0.83	.40
<i>Machiavellianism</i>	-0.01	0.06	-.01	-0.31	.73
<i>Psychopathy</i>	0.24	0.07	.21	3.56	.00

The regression analysis shows that the three components of the Dark Triad cannot be used as strong predictors among the studied sample. Narcissism, Machiavellianism and Psychopathy predict 15% of the variances in Affiliative humor ($R^2 = .15$), 13% of the variances in Aggressive humor ($R^2 = .13$), only 4% of the variances in Self-defeating humor ($R^2 = .04$) and just 3% of the variances in Self-enhancing humor ($R^2 = 0.03$). Among the predictors for Affiliative humor, Narcissism is the strongest ($\beta = .39$). For Aggressive humor the strongest predictor is Psychopathy ($\beta = .28$).

Discussion

The present study investigated correlations between humor styles and the Dark Triad components. The majority of the research's predictions were supported. Both negative humor styles correlated positively with the elements of the Dark Triad – the Aggressive humor styles correlated positively with all the components of the triad, while Self-defeating humor correlated positively with Psychopathy. Moreover, the positive humor styles showed no significant correlation with Machiavellianism or Psychopathy (Affiliative humor showed very weak correlation to Psychopathy, but it wasn't significant at $p < .01$ level.) However, both positive styles however showed significant correlation with Narcissism.

Contrary to hypotheses, the Affiliative humor demonstrated a positive relationship with Narcissism ($r = .36$). While this was not expected in the current study in Bulgaria, it actually corresponds with the results of another study exploring that relationship in the USA (Veselka et al. 2009). A possible explanation of that relationship is the number of personality correlates shared by the two constructs (e.g., Vernon et al., 2008; Vernon et al., 2009). In particular, narcissism and affiliative humor have both been linked to the Big Five factor of Extraversion, which implies that both entail behaviors such as assertiveness, gregariousness, and interpersonal warmth geared towards creating interpersonal bonds. Consequently, narcissistic individuals may further themselves, heighten their self-esteem, and increase their popularity by building relationships with others in part through the use of affiliative styles of humor. A possible interpretation of this positive correlation is the very nature of narcissistic behavior - narcissists tend to be liked by others, they want to be perceived as fun and interesting people with whom it is pleasant to communicate. On the surface, they create the impression of being a good company.

Self-enhancing humor in general did not show significant correlations with the elements of the Dark Triad, which is consistent with the results of previous

studies in which this humor is associated with good mental functioning. It is possible that the weak correlation between this style and narcissism is due to a third factor. Previous studies have linked narcissism to greater optimism (e.g., Hickman et al., 1996), and to less intense emotional responding to negative life events (e.g., Zuckerman & O’Loughun, 2009) — all qualities reminiscent of the self-enhancing humor style. A previous research using two samples found such relationship between the two constructs in one of the samples but not the other (Veselka et al. 2009). The current study supports the existence of such relationship.

Aggressive humor correlates positively with all three elements of the triad. This corresponds to previous research of the components of the Dark triad (Mullins-Nelson et al., 2006). The Dark triad is associated with certain deficits in emotional functioning and cynical disregard for other people’s needs, so the correlation with the style of humor used to humiliate and manipulate others is expected and logical.

Self-defeating humor has a weak positive correlation with psychopathy. A possible explanation is the fact that this style is used when a person distances themselves from the group and has troubles being accepted by others, which corresponds to the antisocial behavior aspect of psychopathy. Self-defeating humor is also characterized by impulsivity and that component echoes theories of psychopathy, which suggest that psychopathic behaviors stem from poor behavioral inhibition (Gray, 1970).

The current study had some important limitations – unbalanced sample (87.2% of the respondents were women), questionable internal consistency on one of the humor subscales (Aggressive humor subscale was Chronbach’s Alpha of .66). Yet it found some interesting correlations that support and expand previous research on the topic.

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BODY IMAGE DISSATISFACTION AS A PREDICTOR OF SOCIAL HYPERSENSITIVITY: SEEKING VALIDATION IN OTHERS

Abstract

The basic goal of this research was to examine the importance of body image dissatisfaction as a predictor of social hypersensitivity dimensions (concern about what others think, dependency, pleasing others). Based on a theoretical frame, a predictive we conceptualized a model in which body image dissatisfaction has a direct effect on hypersensitivity dimensions, but also indirect through dependence as a central component of this construct. Gender was conceptualized as a moderating variable because the importance of body image and prevalence of dissatisfaction are not equal among genders. The sample of the research consisted of 256 university and high school students, aged from 16 to 30 years (with signed parental permissions for minor participants), with the average age being 20.92 years, $SD = 3.56$. Females comprised 82% of the sample. The following instruments were used: the sociotropy scale from Personal Style Inventory by Robins et. all (1994), and body image dissatisfaction subscale from Body Image Scale, constructed in graduate thesis by Škodrić (2017). Statistical parameters show that hypothesised model is acceptable ($\chi^2=115.07, CMIN/DF = 1.98, CFI = .95, TLI = .94, GFI = .96, SRMR = .09, RMSEA = .06$). Body image dissatisfaction had the direct and positive effect on dependence ($\beta = 0.45$) and tendency to please others ($\beta = 0.16$), as well as significant indirect positive effect (through dependence) on pleasing others ($\beta = 0.23$) and concern about what others think ($\beta = 0.28$), but only in the female part of the sample. None of the effects in the male part of the sample were significant. The results of research point that dissatisfaction with body image in females can lead to increased dependence on social support, need for external validations, increased sensitivity to real or imagined rejection, as well as efforts to achieve acceptance from others by sacrificing one's own needs and interests.

Keywords: body image dissatisfaction, social hypersensitivity, dependence, pleasing others

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Introduction

Body Image

Body image is a concept that has been the subject of psychological studies since the beginning of the XX century, although there has been a significant change in the way we define it. Whereas early definitions stressed out the perceptual accuracy of our body perception, focusing on the cases in which this perception is pathologically changed - such as the “phantom limb” phenomenon or seeing yourself as overweight in case of anorexia - modern definitions claim that body image is an attitude and an emotional relationship toward our own body (Grogan, 2009).

Therefore, body image is today seen as a personal attitude toward own body, which consists of cognitive beliefs - how much body is central to our self-concept (degree of psychological engagement), what is considered to be “ideal” body shape, and how far are we from it, how important it is to be close to that ideal, how will other persons see us if we have “attractive” or “unattractive” body - as well as evaluative judgements and emotions regarding body, which can range from pride and pleasure to shame and hatred, and also various behaviours, such as dieting, exercising, wearing revealing clothes or avoiding situations where the attention of others focuses on our body, etc. (Cash, 2002). Some authors define body image as a psychological state, the current level of satisfaction with our body in a specific situation, but in this paper body image is defined as a permanent disposition.

Body image dissatisfaction can be defined as a negative subjective evaluation of our body shape, image, weight, or specific body parts; emotional components can range from mild uneasiness and anxiety to rage and repulsion toward ourselves and our body (Cash & Smolak, 2011). Other similar terms are body self-esteem, body shame, anxiety about our looks, preferred body shape, etc. Positive body image, on the other hand, can be defined not only as an opposite to unsatisfactory and negative body shape but also as authentic acceptance of ourselves and emphasizing the functional (what can I do with my body) over purely visual aspects of the body (Ricciardelli & Yager, 2016).

The results of various studies show that moderate body dissatisfaction is, to a certain extent, ubiquitous and highly represented in most women from western cultures (Cash, 2002; Cash & Smolak, 2011). Studies that examined men, although fewer in numbers (partially because of the lack of adequate instruments which would need to focus not only on body weight but also on muscle mass), show that there is a significant increase in body image dissatisfaction since the 1980s', possibly as a consequence of increased societal pressure to achieve good looks and objectifying male body in media (Grogan, 2009).

Of many various theories, the cognitive-behavioral model is notable because it explains the formation and maintenance of body image distortions and gives us

many techniques for individual work with persons suffering from these types of problems. It attempts to explain these phenomena by basic principles of learning, as well as by mediating role of emotions and cognitive beliefs in the A-B-C chain. Two main groups of factors that influence general attitude toward our body are 1) historical or distal, 2) proximal - those which influence our current situation and emotions (Cash, 2002). The most important distal factors are the socialization process, interpersonal experiences, physical looks, and sudden changes of body shape, as well as personality traits.

Through the process of socialization, society sends many messages about standards of beauty or ugliness and masculinity/femininity. The culture also determines socially acceptable and valued ways of controlling our looks and achieving optimal body physique, such as training for men, dieting for women, etc. Interpersonal experiences refer to the totality of our experiences in social surroundings that refer to our body; these messages are often indirect and unsaid (Grogan, 2009). For example, children that are more physically attractive may receive warmer treatment from parents, be more popular with their peers, etc. Parental criticism can, of course, often also be explicit. Siblings and other peers can be also a salient source of body comparisons and messages, i.e. negative messages or mocking from peers regarding our body can create a powerful disposition toward body image dissatisfaction in adulthood (Cash & Labarge, 1996).

Personality factors that are worth mentioning are general self-concept, degree of self-confidence, but also perfectionism and attachment security, general positivity or negativity of beliefs about ourselves. One additional risk factor is public self-consciousness (the tendency to see our body as an external object, from the perspective of various viewers in social situations, an acute awareness of self as seen by others) (Martin & Debus, 1999). This is comparable to the “imaginary audience” phenomena in adolescence, in which adolescents wrongly believe that the focus of everybody’s attention is on their body (Jerković & Zotović, 2010). This mistake stems from their egocentric thinking because the adolescent assumes that if he is preoccupied with his body, other observers must also share this obsession (Cash & Labarge, 1996).

All these distal factors create a context in which body image and attitudes develop, as key cognitive schemas that determine present reactions to internal and external stimuli. Two basic components of this attitude are: 1) the degree of investment in body image - how central body is in our self-concept, how important it is in our eyes, 2) body image evaluation - the degree to which we are satisfied with our looks (Cash, 2002). If these schemas are particularly salient a person will be more sensitive to social signals and messages related to the body, and it will react to them with irrational beliefs, cognitive judgments fused with strong emotions (“hot cognitions” in CBT), internal dialogue filled with criticism and hopelessness, etc. (Cash & Labarge, 1996).

On the other hand, many current events can trigger cognitive schemas about the body: for example, various comments about our looks in social situations and especially by persons close to us, comparisons to various models presented to us via media, seeing various types of clothes and fantasizing about our “ideal” looks, exercising, various emotional states in which self-monitoring is very prevalent (for example, during public appearances), etc. These events trigger the inner dialogue about our body and looks, and various types of behaviors that are connected with these irrational emotions and thoughts. In persons who suffer from significant body dysphoria, this dialogue is habitual, negative, filled with irrational cognitions (Grogan, 2009). Some of the most frequent types of irrational beliefs and cognitive distortions are selective comparisons (we only compare ourselves with persons we see as better-looking), dichotomous thinking (either I look “fantastic” or “terrible”, there is no middle ground), minimization of our qualities, excessive generalization of our experiences (“everybody will always laugh at me at public events”), etc. (Cash, 2002).

According to Cash (2002), the three most common patterns of behavior which arise as an answer to the activation of these cognitive schemas and emotions are 1) avoidance - fleeing from all trigger stimuli that can lead to negative schema and beliefs activations, 2) attempts to improve or “better” our looks - various attempts to reach the ideal body image, through dieting, exercising, in extreme cases even through body modification and aesthetic surgeries, 3) positive and rational self-acceptance - an attempt to accept ourselves for who we are, to accept our body type and life experiences, to maintain and develop a positive self-concept.

Social Hypersensitivity

Most social interactions we face in our everyday life include some kind of social feedback, either positive or negative. Social sensitivity can be defined as a social skill of noticing, interpreting, and reacting to social messages we receive from other people, and it is necessary to thrive in our social environment (Cikara & Girgus, 2010). On the other hand, excessive social sensitivity (hypersensitivity), also known as sociotropy in clinical literature, is considered a significant risk factor for the development of many maladaptive behaviors. If a person is socially hypersensitive, social messages from others can often lead to sudden and excessive changes in self-esteem and in the way we see ourselves (Sato & Gonzales, 2010).

Social hypersensitivity or sociotropy consists of three main components: 1) excessive worrying about the opinions of others, 2) increased dependence in intimate relationships, 3) a desire to remain close to others by pleasing them (Cikara & Girus, 2010). It has moderate or high positive correlations with most measures of neuroticism, but these two constructs are not identical; hypersensitivity remains a significant predictor of anxiety and depression even

when the influence of neuroticism is statistically controlled for. The concept of social hypersensitivity originally stems from Beck's theory of depression, where it is described as one of the significant aetiological personality factors that leads to increased vulnerability to the development of depression. Beck wrote about autonomous and sociotropic personality as two different personality types that have different etiology of depression and different needs in psychotherapy treatment (Zettle & Herring, 1995).

Sociotropy component dependence on others relates to the feelings of strong separation anxiety, a tendency to have strong symbiotic relationships with significant others, as well as having a strong depressive reaction to real or feared losses of close ones (Robins et al., 1994). On the other hand, component concern about what others think consists of many elements reminiscent of social anxiety, such as intensive fear that others will have a negative opinion about us, constant rumination about whether our social behavior and presentation succeeded in creating a favorable impression on others, etc. (Beck, 2002). The last component - a strong and neurotic need to please others - can be understood as a series of strategies through which a person seeks to gain the support and admiration of others. Those behaviors include pleasing the needs of others while neglecting our own, being reluctant to oppose others' opinions, as well as changing attitudes and habits according to the wishes and attitudes of significant others (Robins et al., 1994). A strong sense of dependence on others can be considered a key and central element of sociotropy. Obsessive rumination, lack of autonomy, and a need to please people to ensure they have a good opinion about a person stem from these feelings of dependence and a strong need to receive constant validation and emotional support (Beck, 2002).

In psychoanalytic literature, sociotropic personalities would be described as "anaclitic", because their object relations with significant others are marked by conflicts and fears regarding dependence, rejection or receiving negative social feedback (Ćeranić, 2005). These persons are highly dependent on intimate relationships and are highly psychologically invested in them; their self-respect is unstable and highly dependent on constant social feedback, support, and proofs of love from others. Because of these constant problems in interpersonal functioning depression typically arises from various problems in social life, such as perceived mocking, abandonment, or betrayals from others. In psychotherapy, they respond positively to group work and individual supportive treatments with a psychotherapist, and the most important factor in their recovery is the establishment of a warm and supporting therapeutic relationship (Zettle & Herring, 1995).

Blatt & Zurroff (1992) attempt to integrate psychoanalytic theories about the etiology of depression with gains and models that originate from various cognitive therapies. They stress the importance of differentiating between two types of depression which are different in symptoms and etiology - anaclitic or

dependent and introjected or self-critical. In anaclitic depression, a person suffers from feelings of abandonment, helplessness, being unloved, etc., i.e., and the key problem is the dependence on the object which is not firmly internalized, and therefore a person cannot have a nurturing, caring, positive relationship toward themselves. Therefore, the constant presence of external good and caring objects (person, significant other) becomes a necessity, and our social relationships are seen as sources of love, care and tenderness without which they could not survive. Fear of losing close persons leads to difficulties in expressing anger, independence, autonomy, etc. In the absence of a “good”, gratifying object a person fears everlasting abandonment and personality disintegration, and therefore it reacts to the separation in very primitive ways, for example by negating it or obsessively seeking a new object of love (Ćeranić, 2005). Anaclitic depression described in such a way corresponds to Becks sociotropic personality.

Anaclitic depression is mainly pre-oedipal and a sense of guilt is not especially prevalent or it may be completely absent. Instead, we encounter an intense sadness and fear of the loss of an external object and its love, and it is perceived that the well-being is completely dependent on the fact whether the love and support of significant other are available or not. There is a pervading sense of helplessness because it is perceived that a person cannot survive without the presence of an object, its love, and attention (Blatt, 1974). On the other hand, introjected depression is characterized by intense feelings of guilt that stem from persecuting and demanding super-ego, internalized strict and judgemental relationships with objects that also become the relationship of a person towards themselves. The main sources of pleasure are not external and dependent on others, but internal - a strong feeling of satisfaction because we achieved our goals and approached the ego-ideal (Ćeranić, 2005). The sense of despair arises from the realization that we will never achieve desired ideals and standards we set for ourselves; every new success or achievement brings only temporary relief which is replaced by the need to prove our values to ourselves and feelings of doubt, lesser worth, and uselessness.

Overview of Previous Research

The theoretical rationale for the role of body image dissatisfaction as a predictor of social hypersensitivity arises from the nature of these variables. Intense dissatisfaction with our body and inability to accept its form, shape, etc., can lead to increased sensitivity to social messages and unstable self-esteem that undergoes radical changes based on the quality of received messages, especially if their contents are tied to our insecurities and vulnerabilities connected to the body (Grogan, 2009). One especially vulnerable population are adolescents, who are highly critical of their looks and afraid of thoughts that others will reject or mock them if they are not attractive enough, and therefore they try to compensate for this fear by constantly seeking approval from others and trying to be liked.

These attempts to secure support and love from others can be interpreted as a strong compensation for inner feelings of insecurity and unworthiness.

In the research conducted by Cash et al. (2004) negative evaluation of our body, together with perceiving the body as a central aspect of self and negative emotions were statistically significant and negative predictors of romantic anxiety and preoccupied attachment in the female sample. The descriptions of preoccupied attachment largely match Beck's description of sociotropic personality type (fear of abandonment, the desire to be liked by others, obsession over social signals and messages, emotional "stickiness", etc.).

The study of Duemmm et al. (2003) is perhaps the most ambitious attempt to connect body image dissatisfaction and sociotropy in one coherent theoretical and empirical frame. In this research, sociotropy was conceptualized as a significant risk factor for the development of body image dissatisfaction and, by extension, bulimia. Precisely, sociotropy as a personality trait leads to increased internalization of societal pressures and beauty standards that lead to negative comparisons and body image dissatisfaction. The result of regression analyses confirms the basic beliefs of the authors; sociotropy had an indirect effect on body image dissatisfaction through internalization of society standards. It is important to note that in this paper we examined the reverse direction - body image dissatisfaction was a predictor of sociotropy. Our basic assumption was that a significant lack of self-esteem and self-acceptance, especially in such a central aspect of identity such as our body shape and attractiveness, is a strong predictor of sociotropy as a form of dependence on others and a strong need to receive social support in order to protect the fragile self. However, it is possible that a degree of circularity exists in the relationship of these variables. Sociotropy and body image dissatisfaction could form from a set of childhood experiences and continue to strengthen one another: the more a person is unsatisfied with themselves, it needs more and more external validation; and a sense of dependence on others further erodes autonomy, self-esteem and body satisfaction.

In his master thesis, Taslim (2012) examined sociotropy as a significant risk factor of transferring body image dissatisfaction in friendly relationships. Women who were more sociotropic often developed body image dissatisfaction on the basis of their close friend's dissatisfaction. This research confirms the role of sociotropy as a significant risk factor because it leads to increased sensibility to societal messages, unrealistic standards, uncritically adopting irrational beliefs, etc.

In a study by Hayaki et al. (2003), females with diagnosed bulimia and an abundance of symptoms achieved higher scores on sociotropy scales compared to control group females. The main conclusion of this research was that emotional dependence and high contingency of self-respect on social feedback was associated with higher levels of bulimia symptoms and their durability by increasing the basic problem of negative body image and unrealistic body looks expectations.

It was already highlighted that body image dissatisfaction is a more prevalent problem in women, probably because of different gender standards and societal expectations (Grogan, 2009). Further, body image dissatisfaction can be manifested in different ways: whereas females attempt strict dieting, hide their body shape, etc., men usually exercise excessively, use steroids, etc (Grogan, 2009). Therefore, the relationship between body image dissatisfaction and social hypersensitivity was tested separately for the male and female parts of the sample.

Newman et al. (2009) stressed the fact that traditional descriptions of sociotropy and autonomy largely correspond to the traditional cultural descriptions of femininity and masculinity. Sociotropy as a mode of personal functioning includes a strong desire to be liked and accepted by others, attempts to please others and adjust ourselves to their expectations, as well as an intense fear of negative reactions and rejections. On the other hand, the main dilemmas of autonomous persons are questions of self-worth and achievement. Beck (2002) also noted that sociotropic type of depression is encountered more frequently in women. Newman et al. (2009) found a strong positive correlation between sociotropy and measures of femininity. Therefore, it is necessary to assume that the relationship between body image dissatisfaction and social hypersensitivity will be especially salient for females because they are more psychologically invested in these areas than males.

Method

Research Problem

The main research problem was the role of body image dissatisfaction as a predictor of various components of social hypersensitivity (dependence, concern about what others think, attempts to please others) in the male and female part of the adolescent sample. The main hypothesis was that among both male and female adolescents body image dissatisfaction has a direct and positive effect on all three components of social hypersensitivity, but also indirect and positive effect on concern about opinions and attempts to please others through the central component of social hypersensitivity - dependence on others.

The Sample of Research

The sample of this research consisted of $N = 256$ participants, which were collected via an anonymous questionnaire on the "Google Forms" platform in May 2020. The sample mainly consists of female adolescents, which is 82% of the total participants (211 persons). The age of participants spans from 16 to 30 years, with the average age being $M = 21$, $SD = 3.57$. Participants were mainly students of the Philosophical Faculty of the University of Eastern Sarajevo, and students of the gymnasium "Tanasije Pejatović" in Pljevlja.

Research Instruments

The following instruments were used in this research: *Body image scale* constructed by Škodrić (2017), and *Personal Styles Inventory* by Robins et al. (1994).

Body image scale was constructed as a part of graduate thesis by Škodrić (2017), based on the overview of relevant literature and similar scales. It consists of 20 Likert-style items, and participants rate their agreement with them on a scale from 1 to 6 (1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly disagree*, 4 = *slightly agree*, 5 = *agree*, 6 = *strongly agree*). The factor analysis conducted in graduate thesis revealed a two-factor structure. The first factor was named body image dissatisfaction and in consists of items about negative evaluation of our looks (“I often worry about my looks”, “I often obsess about not being thing enough”), various body hiding behaviors (“I avoid wearing clothes that make me look fat”, “I avoid going to parties and social events because I am unsatisfied with my appearance”), fear of gaining weight (“I fear I may gain weight”), etc. The other factor was named adolescent narcissism and consists of items which describe extremely positive, even unrealistic judgement about our looks and narcissistic preoccupation with it (“I think I look better than most of my peers”, “Others envy me for my good looks”, “When I enter a room, most people look at me because of my attractive look”). Before answering the questionnaire, participants were presented with this instructions: “The following statements describe various feelings and behaviours connected to the body. Read them carefully and respond how well they describe you/how much you agree with them on a scale of 1 to 6”. Only the first subscale was used in this research, and it consists of 12 items. The calculated alpha cronbach coefficient of reliability and internal consistency was high ($\alpha = .84$).

Personal Styles Inventory constructed by Robins et al. (1994). The scale consists of 48 items and it measures autonomy and sociotropy as personality orientations as defined by Beck in his descriptions of these personality traits as important risk factors for the development of depression. Sociotropy is defined as an excessive dependence in social relationships and preoccupation with them, and autonomy as an excessive need for accomplishments and achievements in order to feel personal value, as well as independence from others. Each subscale consists of 24 items. Sociotropy subscale consists of three narrower factors: concern about what others think (“I am very sensitive to criticism by others”, “It is very important to me to be liked or admired by others”), dependence on others (“It is hard for me to break off relationship even if it is making me unhappy”, “I find it difficult to be separated from the people I love”), and need to please others (“I often put other peoples’ needs above my own”, “I often worry a lot about hurting or offending other people”). Before answering the questionnaire participants were presented with following instruction: “Here are a number of statements about personal characteristics. Please read each one carefully, and indicate whether you agree or

disagree, and to what extent, by circling/selecting a number”. Participants indicated their degree of agreement on a scale of 1 to 6 (1 = *strongly disagree*, 2 = *disagree*, 3 = *slightly disagree*, 4 = *slightly agree*, 5 = *agree*, 6 = *strongly agree*). The scale was translated to Serbian language in master thesis by Borović (2019). Items were translated to Serbian language and then back to English by two independent translators in order to ensure that their meaning was not changed. Exploratory factor analysis confirmed the two-factor solution (autonomy vs. sociotropy), but also the possibility of six-factor solution - separating autonomy and sociotropy into three subscales which correspond to original factors and subscales. In this research only sociotropy subscale was used. The reliability of sociotropy subscale was $\alpha = .92$.

Results

Before examining the hypotheses via structural equation modeling (SEM), basic descriptive values for used scales and subscales were calculated to examine if the variable distributions were significantly asymmetrical which would threaten the validity of the structural model. A short overview of calculated values is given in Table 1.

Table 1. *Basic descriptive values of examined variables*

	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>	<i>Sk</i>	<i>Ku</i>
body image dissatisfaction	14.00	80.00	38.61	14.66	.80	.13
sociotropy						
concern about what others think	7.00	35.00	22.18	5.94	-.12	-.27
dependence on others	6.00	30.00	15.41	5.04	.43	-.10
need to please others	10.00	45.00	28.08	6.28	.00	-.12

As shown in Table 1, none of the skewness and kurtosis values reach the critical value of ± 2 , so it can be concluded that the assumption of normality of variable distribution is not breached.

In Table 2, intercorrelations of research variables are shown.

Table 2. *Research variables intercorrelations*

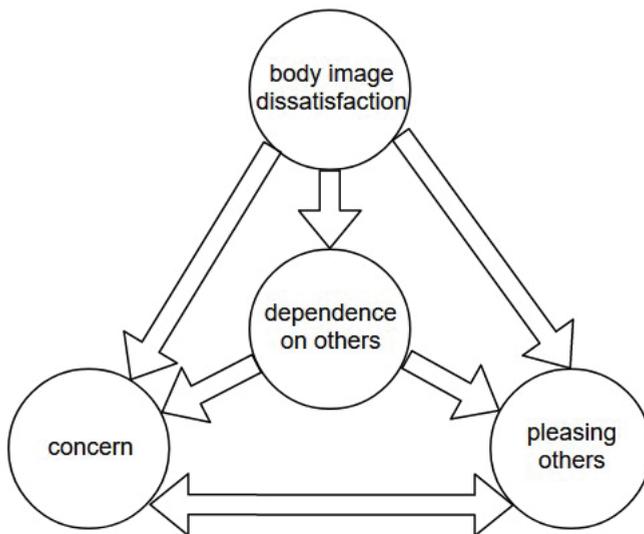
	1	2	3	4
1. body image dissatisfaction		.32**	.42**	.38**
2. concern about what others think			.64**	.52**
3. dependence on others				.55**
4. need to please others				

Note. **= Correlation is significant at the .01 level (2-tailed).

As shown in Table 2, all research variables are significantly and positively correlated.

The constructed structural model in AMOS includes the direct effect of body image dissatisfaction on all three dimensions of social hypersensitivity, but also indirect effect of body image dissatisfaction on concern and pleasing others through dependence as a central component or basic characteristic of hypersensitivity construct. The simplified chart of constructed model is shown in Figure 1:

Figure 1. *Structural model of the relationship between body image dissatisfaction and sociotropy*



Before the model was tested, a series of linear regressions were conducted in order to confirm that basic assumptions for testing mediation were met. Body image dissatisfaction is a significant predictor of concern about what others think ($R^2 = .10$, $F(1, 254) = 28.50$, $p = .00$, $\beta = .32$, $p = 0.00$), tendency to please others ($R^2 = .15$, $F(1, 254) = 42.94$, $p = .00$, $\beta = .38$, $p = .00$), as well as of mediator variable, dependence on others ($R^2 = .17$, $F(1,254) = 54.51$, $\beta = .42$, $p = .00$). On the other hand, dependence on others is a significant predictor of concern about what others think ($R^2 = .41$, $F(2,253) = 89.08$, $p = .00$, $\beta = .61$, $p = .00$) and pleasing others ($R^2 = .32$, $F(2,253) = 61.21$, $p = 0.00$, $\beta = .47$, $p = .00$) when the effects of body image dissatisfaction are statistically controlled for. Therefore, the basic assumptions for conducting mediation analysis were met.

The estimation method used was maximum likelihood. Body image dissatisfaction and sociotropy components were treated as latent variables. Body image dissatisfaction had 13 indicators, dependence on others 7, concern about

what others think 7, and the need to please others 10 indicators. Basic model fit indicator have satisfying values: $\chi^2 = 115.07$, CMIN/DF = 1.98, CFI = .95, TLI = .92, GFI = .96, SRMR = .09, RMSEA = .06, 90% CI [.04, .08]. The constructed model fits the data very well.

Regression coefficients values were calculated separately for the male and female parts of the sample, to investigate whether gender represents a significant moderator of the relationship between body image dissatisfaction and social hypersensitivity. Statistic significance of regression coefficients was examined through upper and lower limits of bootstrap intervals, and those coefficients whose interval has no zero values were deemed to be significant. Bollen-Stine method of calculating bootstrap intervals was used.

Table 3. *Values of regression coefficients in the female sample*

Direct effects – female	B	LLCI	ULCI	p
body dissatisfaction → dependence	0.45	0.35	0.56	0.01
body dissatisfaction → pleasing others	0.16	0.26	0.41	0.03
body dissatisfaction → concern	0.32	-0.72	0.14	0.56
Indirect effects - female (through dependence)	B	LLCI	ULCI	p
body dissatisfaction → pleasing others	0.23	0.15	0.32	0.01
body dissatisfaction → concern	0.28	0.20	0.37	0.01

As shown in Table 3, body image dissatisfaction has a significant and positive direct effect on sociotropy components dependence on others and pleasing others. It also has a significant, positive, and indirect effect on concern about what others think and pleasing others through dependence as a central component of sociotropy.

Table 4. *Values of regression coefficients in the male sample*

Direct effects – male	B	LLCI	ULCI	p
body dissatisfaction → dependence	0.23	-0.51	0.47	0.15
body dissatisfaction → pleasing others	0.09	-0.18	0.31	0.56
body dissatisfaction → concern	0.16	-0.44	0.34	0.18
Indirect effects - male (through dependence)	B	LLCI	ULCI	p
body dissatisfaction → pleasing others	0.04	-0.06	0.20	0.13
body dissatisfaction → concern	0.14	-0.02	0.29	0.09

The results indicate that body image dissatisfaction is not a significant predictor of social hypersensitivity dimensions in male part of the sample. There are not any significant direct or indirect effects on social hypersensitivity dimensions.

Discussion and Conclusion

The relationship of a person towards their body and the degree of the acceptance of their looks are a reflection of some of the basic developmental achievements of childhood and adolescence. We build an early perceptual image of our body in the earliest childhood, and it consists mainly of sensory-motor schemas (what movements can be done with the body); the body is seen as a tool of action towards the external world (Jerković & Zotović, 2010). Psychoanalytic authors stress the importance of realizing the distinction between ourselves and others persons/external world, which they see as a key developmental achievement that enables reality testing and differentiating our thought and impulses from external events (Ćeranić, 2005). However, in middle childhood and especially in adolescence an emotional relationship toward our body develops; the body is conceived as an object that can be the target of our pleasure or displeasure. These feelings arise from comparing our bodies with societal standards of the ideal body (which is transmitted via various mass media), or by comparisons of our looks with the bodies of peers or other persons we see as popular, successful and beloved (Cash, 2002).

It can be said that modern civilization intensifies the process of objectification not only of female bodies, but also males, and that it leads to the state in which our body is experienced as an object for whose attractiveness we are responsible (internal attribution of responsibility!), and which determines our social status and popularity among others (Grogan, 2009). From this fundamental problem, from this equalizing of a body with the value of the persons and dehumanization of a body to the level of an object, stem many other problems, such as imposing unrealistic standards of body beauty and attractiveness via media messages (for example, by showing celebrities who achieve their “perfect” looks only by strict training or aesthetic surgeries), thinking that physical beauty alone automatically means a person has many other admirable qualities such as intelligence or goodness (halo-effect!), etc.

All these factors lead to an increased body image dissatisfaction, a negative relationship toward our own body which is generalized to our general self-respect based on beliefs that other people will judge, reject and consider us unworthy based on our physical looks alone. In body image dissatisfaction we encounter the full paradox inherent in the nature of our bodies as a part of ourselves and an external object at the same time that can be judged by others; the rejection of our (objectified) body is equalized with rejecting the deepest layers of our being (Cash, 2002). This dissatisfaction leads to various behaviors that vary from obsessive attempts to change and “control” our looks (dieting, exercising, aesthetic surgeries) to hiding our body because we fear anticipated reactions of other people (avoiding beaches, wearing “baggy” clothes, etc.) (Grogan, 2009).

This research attempted to examine the relationship between body image dissatisfaction and social hypersensitivity/sociotropy as one of the key concepts of Beck's (2002) theory of depression. Sociotropy refers to the negative attitude toward ourselves which we attempt to compensate by trying to get positive social messages and support from other people all the time; because of this internal vulnerability self-esteem is extremely variable depending on the nature of messages received from others (Zettle & Herring, 1995). However, sociotropy does not include only the central component (dependence on others opinions), but also other types of thoughts and behaviors, such as constant worrying about what others think of us, as well as attempts to please other people to secure their benevolence, even at the cost of sacrificing our own needs. Psychoanalytical theorists conceptualize sociotropy as a form of excessive dependence on love and attention from external "good" objects because the good object was never fully internalized and childhood and therefore the capacity to have a caring and nurturing relationship toward ourselves was never fully developed (Blatt & Zuroff, 1992).

This oversensitivity to social messages and unstable self-respect are phenomena often noted in patients who experience various disorders connected to body image dysfunctions, such as anorexia or bulimia (Duemm et al., 2003; Hayaki et al., 2003). Duemm et al. (2003) conceptualize sociotropy as a risk factor for body image dissatisfaction because the persons who are more dependent on others tend to uncritically internalize unrealistic societal body image standards, which leads to dissatisfaction. However, in this research sociotropy was examined as an attempt to compensate for a fundamental lack of self-acceptance - body dissatisfaction. Body image dissatisfaction can stem from various factors, not only internalized unrealistic societal standards; behaviors of a sociotropic person (constant seeking of love and validation from others, fear of rejection and judgments of others, constant and obsessive efforts to keep significant others close to us) could be described as attempts to compensate this basic lack of love and self-acceptance or to avoid negative reactions and judgments by others that would confirm our negative self-concept.

The sample of the research consisted of $N = 256$ participants, university and high school students, aged from 16 to 30, with the average age being $M = 21$. Females make up 82% of the sample (211 participants). Therefore the sample consists mainly of adolescents; and body image and looks problems are especially prevalent and salient in this population, not only because of physical changes of puberty but also because of fears connected to social rejection, our attractiveness to potential partners, etc.

Constructed structural model includes a direct effect of body image dissatisfaction on all three components of hypersensitivity, but also an indirect effect of body image on concerns about what others think of us and attempts to please others through dependence on others as a central component of

hypersensitivity. The inclusion of these relationships into the model is an attempt to postulate a key connection between a lack of self-acceptance and increased dependence on other persons as sources of positive social messages, as a form of compensation for the negative attitude and relationship toward ourselves. Said in the language of psychoanalytic theory, seeking a positive object relationship is an attempt to compensate for the lack of inner positive relationship toward ourselves because a proper identification with the positive object was not formed. From this basic dynamic arise other types of behaviors which are centered around keeping the relationship with the object intact by any price - such as pleasing others, etc. Regression coefficients were calculated separately for male and female parts of the sample, in part because body objectification and body image dissatisfaction are phenomena that are still more prevalent in females, possibly because of different societal standards, expectations, and messages, although this gender difference is shrinking (Grogan, 2009).

Model fit indicator point out to that the constructed model fits the data reasonably well. The calculated regression coefficients in the female part of the sample show that body image dissatisfaction has a direct and positive effect on the dependence on others and attempts to please others, as well as a positive indirect effect on attempts to please others and concern about what others think of us through dependence. On the other hand, none of the calculated regression coefficients in the male part of the sample was statistically significant.

The study results largely confirm theoretical assumptions and hypotheses. If we interpret a chronic and intensive body image dissatisfaction as a fundamental lack of love toward ourselves, self-acceptance, lack of internalized gentle and nurturing relationship with ourselves, the nature of its connection with social hypersensitivity becomes far clearer. Dependence on opinions and messages from others is a central component of this hypersensitivity; a person needs constant positive feedback from others to feel good with themselves and to counter inner beliefs about unattractiveness, lesser worth, unlovability, etc. Situations that are carefully avoided are not only the absence of messages from others, but also the presence of negative messages; in the first case, the absence of social feedback forces us to face the negative emotional relationship we have toward ourselves, but in the other case negative messages confirm our beliefs about unattractiveness and unlovability that already exist.

Both situations are psychologically “dangerous” for the self-respect and mental health of a person. Different types of behaviors can be developed as an attempt to avoid them, and they can be best described as peripheral components of sociotropy - intense sensitiveness to signals of acceptance or rejection received from others, spending energy on obsessive ruminations about whether others like us or not, subjugation to the desires of others in order to secure their closeness and sympathy, even when it threatens our needs and desires. All these tactics are a compromise between a strong desire for love and self-respect and irrational beliefs

about us being less worthy; they represent a conditional sense of value (“I can feel good about myself as long as others like me and express it.”). This neurotic compromise is often extremely durable because abandoning it would mean facing our lack of self-love and awakening many painful memories, triggering high anxiety levels and slowly becoming conscious of our basic problem. By holding to these neurotic behaviors, a person moves in a cycle of behavior that can save remaining self-respect temporarily, but in the long run, it decreases because of perceived dependence on others and fear of abandonment.

It is important to mention that the absence of statistically significant regression coefficients in the male part of the sample does not mean that there are no significant relations between these variables. The sample of this research was not balanced by gender and reaching a final conclusion demands a far greater number of male participants, and this should be the goal of the next studies which will deal with these topics. Further, it is possible that body image dissatisfaction, although it has similar developmental roots in males and females, has a different effect on genders because of the differences in socialization and parental messages. Whereas seeking support from others, as well as a certain degree of dependence in an intimate relationship, are an acceptable part of traditional female roles, the same could not be said for men and the traditional concept of “masculinity”. It is possible that instead of compensating for body image dissatisfaction males develop certain forms of overcompensation, in the form of attempts to reach the “ideal” body type by intensive exercising, efforts, etc., even taking steroids in more extreme cases. It is important to note that, although many men succeed in archiving body looks that are close to their “ideal” body shape, this behavior is equally self-defeating and neurotic as those described when discussing the female part of the sample. Their self-respect is still dependent on external factors, and the divide between real and ideal self is never truly bridged and continues to be the source of suffering because the basic problem lies not in objective body look, but the relationship toward ourselves. Future research should study these hypothetical reactions and patterns in men.

Based on study results it can be concluded that in many cases of intensive dependence on others, symbiotic and neurotic relationships, and especially when there are problems with low self-esteem and body image dissatisfaction, it would be useful to focus on the inner relationship a person has toward themselves. To be more precise, it is necessary to develop the personal capacity to give ourselves positive messages, stress our qualities, but also realistically accept our flaws, followed by faith that many persons will accept us both because of our qualities and flaws. Different psychotherapy schools try to name and explain this capacity of nurturing ourselves. For example, the transactional analysis would call it the ego-state of Nurturing Parent, developed through identification and internalization of positive parent aspects in early childhood. Therapeutic interventions focused on this capacity are called re-parenting, as they try to develop it through the

therapeutic relationship between analyst and client. Cognitive-behavior theories describe this capacity through the belief about our unconditional value as a being, the consciousness that we are worthy and deserve to be loved independently of our looks, status, or abilities.

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BELIEFS AND FEAR TOWARDS COVID-19 AND THEIR RELATIONSHIP WITH VACCINATION ATTITUDES

Abstract

In the context of global COVID-19 pandemic vaccination against the coronavirus has become an essential issue. As in many other countries, attitudes towards vaccination in Bulgarian society are controversial. On the one hand vaccination is perceived as the most effective solution against the spread of the virus and on the other – as additional possible danger to health and life. The goal of the current study is to examine how fear and beliefs towards COVID-19 are connected to vaccination attitudes. Fear of COVID-19 was measured by the Bulgarian version of the Fear of COVID-19 Scale (Ahorsu, et al., 2020; Dragova-Koleva, 2021), where three aspects of the fear were identified. Beliefs about the virus reflect two categories of misperceptions about COVID-19, operationalized as magical (referred as naïve in Bulgarian) and conspiracy-based beliefs. They were measured by the relevant scales from the Misperceptions about COVID-19 Questionnaire (Pennycook, et al., 2020), adapted for Bulgarian context (Koralov, 2021). Fear of COVID-19 vaccination and vaccination attitudes (positive, negative and cautious) were measured by questionnaires developed by the authors of the article. The study was conducted in Bulgaria and the sample included 450 participants between the ages of 18 and 69. Results show low to strong ($r = -0.26, p = 0.000$ to $r = 0.68, p = 0.000$) relationships between the variables involved. Fear of coronavirus correlates positively with positive vaccination attitude ($r = 0.28, p = 0.000$). Conspiracy based COVID-19 beliefs show strongest positive correlations with negative ($r = 0.68, p = 0.000$) and cautious vaccination attitudes ($r = 0.65, p = 0.000$). Magical (naïve) beliefs have statistically significant correlations with vaccination attitudes at a moderate level (r is around 0.30). These results give us reason to conclude that changing vaccination attitudes may be achieved through changing beliefs about the virus itself. As long as society keeps tolerating conspiracy beliefs, it is reducing its chances of coping with the pandemic, as vaccination rates would continue to be slower than optimal.

Keywords: beliefs about COVID-19, fear of COVID-19, magical beliefs, conspiracy-based beliefs, COVID-19 vaccination attitudes

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Introduction

In early 2020, the world faced an unexpected challenge. The new coronavirus-19 has caused a global pandemic and threatened both the health and economic status of people around the world and their mental well-being and daily functioning.

The COVID-19 pandemic with its successive waves and modifications of the virus has had a huge impact across societies. Governments worldwide have imposed measures including restrictions of movement, mandatory use of face coverings or quarantine to prevent the spread of the virus. Returning to normality however depends on the availability of a COVID-19 vaccine and vaccination process. The COVID-19 vaccine is already a fact, but to become an effective solution to controlling the pandemic, it must be accepted and used by a large majority of the population. More than 70% of people in a community would need to be vaccinated in order to achieve herd immunity. But vaccination hesitancy is emerging as a major problem worldwide for limiting or eliminating the viral infection and spread (Salmon et al., 2021; Taylor et al., 2020).

Reluctance or refusal to vaccinate reflects the attitude towards COVID-19 vaccination (Sherman et al., 2021). In the literature the focus on intention to be vaccinated against COVID-19 dominates. Assessed vaccinations intentions however may differ from the actual vaccination behaviors.

The present study investigates factors associated with COVID-19 vaccination attitudes. As in many other countries, attitudes towards vaccination in Bulgarian society are controversial. On the one hand, vaccination is perceived as the most effective solution against the spread of the virus and on the other – as additional possible danger to health and life. By the end of March 2021, when the current data was collected, only 1.5% of the Bulgarian population was fully vaccinated, compared to 5.04% of the population of the EU. By 1st of September 2021 the percentage of fully vaccinated population of Bulgaria was 17%, while in the EU it was already 58.43%. The problem of vaccine refusal has many contributing factors.

Our goal is to examine how psychological factors including fear and beliefs towards COVID-19 are connected to vaccination attitudes.

Fear of COVID-19

The COVID-19 pandemic has inflicted harm on the life, health and economy of many nations. Placed in conditions of unexpected danger, uncertainty and insecurity, people's natural reaction is anxiety, stress and fear. Restrictive measures introduced by a number of countries as a mean of controlling the pandemic also increase fear of COVID-19 related to forced social exclusion, lack of social support and difficult daily functioning. The lack of predictability for the end of the pandemic and the constant emergence of new modifications of the virus

further enhance the experience of fear. Fear is therefore one of the psychological aspects of the COVID-19 pandemic which affects people's emotions, attitudes, thinking and behavior. Fear is defined as an unpleasant emotional state that is caused by the perception of threatening stimuli (de Hoog, et al., 2008). It has various manifestations, including physiological, emotional, cognitive and behavioral reactions. Fear of COVID-19 can be provoked by various motives, such as fear of infection or even death, forced social isolation, lack of social support, loss of predictability of daily and professional life. Therefore, the global pandemic puts society in a traumatic situation in which it is difficult to tolerate the unknown. The new coronavirus-19 can cause distress, but it can also be a motivator for preventive and responsible behavior, depending on many personal and social factors one of which is the level of fear it provokes.

Beliefs and Misperceptions About COVID-19

To understand better the attitudes towards COVID-19 vaccination, it is important to know what beliefs about coronavirus-19 people have. Some of these beliefs are based on scientific and expert knowledge and opinions, but given that the COVID-19 crisis is marked by many uncertainties, anxiety and lack of control, misperceptions or false beliefs about coronavirus-19 have been spread in the society (Pennycook et al., 2021). Therefore, another psychological aspect of the COVID-19 pandemic is the spread and maintenance of misconceptions about the virus.

The misperceptions about COVID-19, as shown by Pennycook et al. (2021) in news reports and social media, are divided by them into four categories: Optimistic („The seasonal flu is just as dangerous as the coronavirus.“; „Warm weather effectively stops the coronavirus from spreading.“); Pessimistic („Dogs and cats can contract and spread the coronavirus.“; „The coronavirus will kill most people who contract it“); Magical (“Vitamin C can cure the coronavirus.”; “Eating garlic cures the coronavirus”); Conspiratorial (“The coronavirus was created in a lab.”; “Coronavirus was created to be a bio-weapon.”) (Pennycook et al., 2021). Many of the misperceptions about COVID-19 are similar to common misconceptions about science (in particular, medical science); such as that simple remedies (e.g., Vitamin C) are sufficient to cure diseases. In this study we focused only on magical beliefs and conspiracy-based beliefs about COVID-19. Magical beliefs could also be called “naïve”, because they do not reflect ideas for the intervention of any “unknown” forces of a magical nature, but rather reflect widespread beliefs about the possibilities of various traditional remedies such as garlic or vitamin C that could be useful for controlling of COVID-19. Conspiracy-based beliefs refer to development or adoption of narratives, including conspiracy theories, to make sense of COVID-19 crisis. Conspiracy theories provide a way of coping with uncertainty, violation of expectancies and lack of control (van Prooijen & Van Vugt, 2018) by creating meaning through providing alternative explanations to official accounts (van Prooijen & Douglas, 2017).

Misconceptions about COVID-19 are associated with a reduced perception of the risk of virus infection and less compliance with prevention, social distance measures and vaccination intentions (van Mulukom et al., 2020).

Both characteristics of the pandemic - fear and misperceptions - should be studied as contributing factors for COVID-19 vaccination attitudes because they reflect on people's model of thinking, behavior and health.

Fear of COVID-19 Vaccination

Additional factor for COVID-19 vaccine refusal or reluctance could be the fear of vaccination. Motivational roots of this fear include concerns about vaccines as unforeseen future effects of the COVID-19 vaccine, the possibility of even dying because of the vaccine itself, negative attitudes toward vaccination in general and increasing anti-vaccination sentiment, preference for natural immunity, uncertainty regarding vaccination. Experienced fear of COVID-19 vaccination demonstrates the concern that the risks might outweigh the benefits and serious vaccine reactions are possible that put individual health and life in danger.

Attitudes, Vaccination and COVID-19 Vaccination Attitudes

The theme about attitudes is, we may say, classical in social psychology as the first studies in this field were made in the early 20th century. Dozens of definitions of what are attitudes were proposed for the last 60 years. Some of them are very general as: "Evaluating a particular entity with some degree of favor or disfavor" (Eagley & Chaiken, 1998, p.270). Others are more specific like attitudes are: "A relatively enduring organization of beliefs, feelings, and behavioral tendencies towards socially significant objects, groups, events or symbols" (Hogg & Vaughan, 2005, p.150).

According to the very popular tripartite model of attitudes (known also as ABC model) they have an internal structure consisting of affect, behavior and cognition. Emotional response is largely considered as the best predictor of behavior or if we express this general idea in the terms of our present study fear (of COVID-19 itself or of COVID-19 vaccination) should induce vaccinating behavior or the lack of it.

There is another issue about attitudes. They could be ambivalent or positive and negative at the same time. Again, in the context of our present study this means that people could simultaneously like and dislike, be positive and negative, accept and reject COVID-19 vaccination which causes much ambiguity and difficulty to predict their real behavior.

We should consider some specific features regarding vaccination and COVID-19 vaccination: global anti-vaccers' attitudes with a substantial increase for the last decade; lack of reliable information or controversial information, even experts do not share the same opinion about COVID-19 vaccination; different

vaccines which are based on different technologies and with different properties; effects unsure (one could still contract and spread the disease even vaccinated), side effects unknown (does a RNA vaccine change DNA?); an overall uncertainty regarding vaccination (at the end is it beneficial or harmful?).

The present study investigates factors associated with COVID-19 vaccination attitudes. Our goal is to examine how psychological factors like fear and beliefs towards COVID-19 and fear of COVID-19 vaccination are connected to vaccination attitudes towards the virus.

The following hypotheses were formulated:

H1. The fear of COVID-19 would be positively correlated with the positive attitude towards vaccination.

H2. The fear of COVID-19 should be associated negatively with the fear of COVID-19 vaccination (that is, the more are people afraid of COVID-19, the less they would be afraid of vaccination).

H3. People holding false beliefs would be more afraid of COVID-19 vaccination and they would have more pronounced negative and cautious attitudes and less pronounced positive attitudes.

Method

Four questionnaires were used in the study.

Fear of COVID-19 Scale (Ahorsu, et al., 2020) consists of 7 items that are divided into 3 subscales in the Bulgarian adaptation: physiological symptoms, emotional symptoms and avoidance (Dragova-Koleva, 2021).

False beliefs (magical and conspiracy-based) were measured by the relevant scales from the Misperceptions about COVID-19 Questionnaire (Pennycook, et al., 2020), adapted for Bulgarian context (Koralov, 2021). They consist of 8 items.

COVID-19 Vaccination Attitudes Questionnaire including 24 items and *Fear of COVID-19 Vaccination Scale* with 8 items were specially developed for the study. Positive attitudes (e.g., "I am convinced that vaccination against COVID-19 is a good thing."; "It is important for me to get vaccinated against COVID-19 as soon as possible."), negative attitudes (e.g., "Vaccines against COVID-19 are insufficiently tested, which makes them dangerous"; "Vaccines against COVID-19 are worse than the virus itself.") and cautious attitudes towards COVID-19 vaccination (e.g., "Vaccines against COVID-19 should be taken by everyone with great caution.") were measured.

For all questionnaires respondents answered on a 7-point scale.

Participants

The sample consisted of 450 participants (74.7% female, 23.7% male, 1.3% unspecified), aged 17 to 69 years ($M = 37.32$; $SD = 9.72$). 13.5% of them have

a high-school degree, 32.4% - bachelor's degree, 49.2% - Master's degree and 4.7% - PhD degree.

Procedure

Participants completed an internet-based battery of questionnaires, including demographic questions. The research obtained approval from the Ethics Committee in the Department of Cognitive science and Psychology in New Bulgarian University. Participants were asked to fill anonymous questionnaires about their experiences and beliefs regarding COVID-19 and vaccines against the virus. The participation in the study took around 20 to 30 minutes. The survey was conducted between 23.02.2021 and 30.03.2021.

Results

Table 1 presents descriptive statistics and internal consistency of all scales included in the present study.

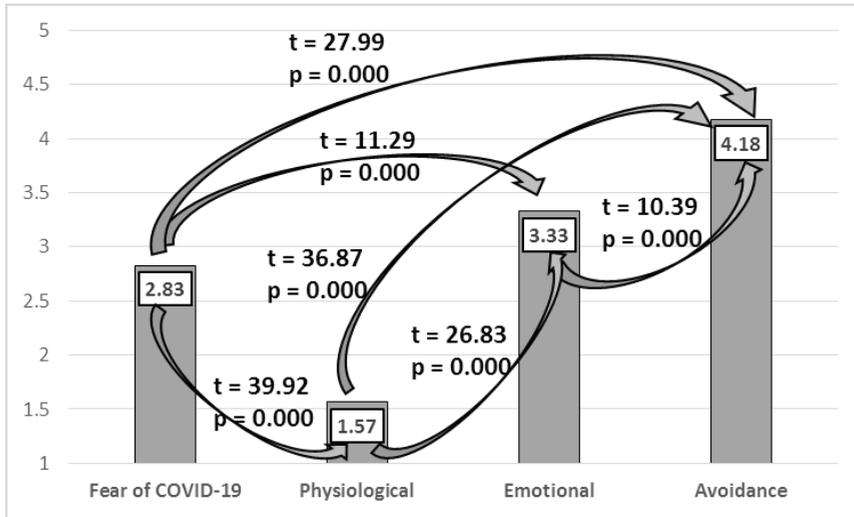
Table 1. *Descriptive statistics and internal consistency of all scales*

Scale	<i>M</i>	<i>SD</i>	Cronbach's Alpha
Fear of COVID-19	2.82	1.12	0.82
Fear – physiological symptoms	1.57	0.95	0.81
Fear – emotional symptoms	3.33	1.66	0.80
Fear – avoidance	4.18	1.70	0.67
Magical (naïve) beliefs	2.09	1.14	0.79
Conspiracy-based beliefs	3.04	1.60	0.86
Fear of COVID-19 vaccination	2.49	1.28	0.87
Vaccination positive attitudes	4.20	1.79	0.96
Vaccination negative attitudes	2.56	1.60	0.91
Vaccination cautious attitudes	3.69	1.52	0.89

According to Cronbach's alpha all methods have good reliability.

Paired-samples T-test was conducted to compare the three different aspects of Fear of COVID-19. There is a statistically significant difference between all of them which proves that they really are separate.

Figure 1. Different aspects of Fear of COVID-19 compared by Pair-samples T-test



The most powerful aspect of fear is avoidance or just trying to ignore the problem. Next are purely emotional symptoms of fear, just experiencing it. The lowest results are related to physiological symptoms, that is most people do not have physiological signs of fear.

There is also a statistically significant difference between magical (naïve) and conspiracy beliefs about COVID-19. Conspiracy-based beliefs score higher.

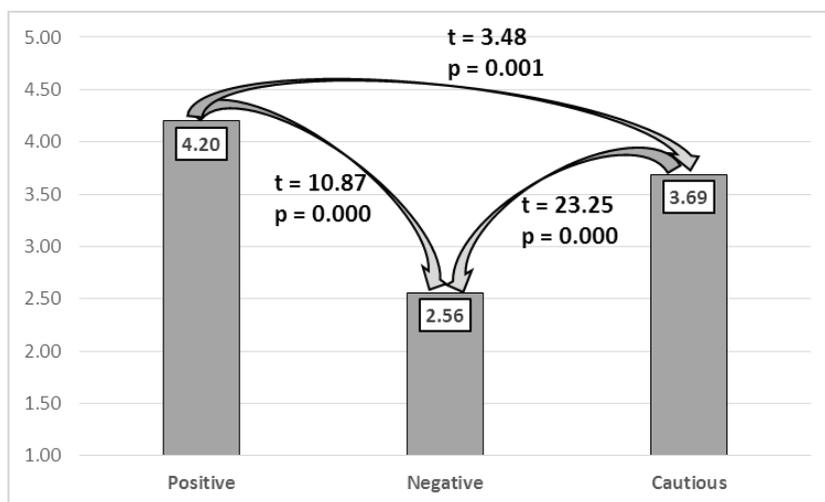
Table 2. Difference between Magical (naïve) and Conspiracy beliefs measured by Pair-samples T-test

Scale	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>
Magical (naïve) beliefs	2.09	1.14	13.27	.000
Conspiracy beliefs	3.04	1.60		

On the next figure there is a graphical representation of the comparison between the three types of attitudes towards COVID-19 vaccination.

The results from the Paired-samples T-test showed that there is a statistically significant difference between positive attitudes, negative attitudes and cautious attitudes towards COVID-19 vaccination which proves that they really are separate. Positive attitudes “win” but still, as we can see from present vaccination levels in Bulgaria, it is not powerful enough. The negative attitude is the least pronounced. The surveyed participants show little fear of COVID-19 vaccination (at least at the declarative level).

Figure 2. Difference between Positive, Negative and Cautious attitudes towards COVID-19 vaccination measured by Pair-samples T-test



To check the hypotheses, we started with correlational analyses. Table 3 contains the correlations between the used variables.

Table 3. Correlations between the used variables

	1	2	3	4	5	6	7	8	9	10
1. Fear of COVID-19 (SUM)	-									
2. Fear physiological	.81**	-								
3. Fear emotional	.83**	.55**	-							
4. Fear avoidance	.81**	.48**	.47**	-						
5. Magical (naïve) beliefs	.05	.13**	-.04	.04	-					
6. Conspiracy-based beliefs	-.02	.095*	-.18**	.05	.41**	-				
7. Fear of vaccination	.19**	.20**	-.03	.30**	.34**	.59**	-			
8. VPA	.28**	.15**	.46**	.06	-.26**	-.59**	-.64**	-		
9. VNA	-.06	.06	-.27**	.08	.32**	.68**	.74**	-.77**	-	
10. VCA	-.03	.02	-.22**	.14**	.32**	.65**	.78**	-.73**	.79**	-

Note. VPA = vaccination positive attitudes; VNA = vaccination negative attitudes; VCA = vaccination cautious attitudes.

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

Testing Hypothesis 1

The overall result about the correlation between Vaccination positive attitudes and Fear of COVID-19 (SUM) looks quite modest ($r = .28$; $p < .01$). It is much more interesting when we go on the level of subscales. People that express more emotional symptoms of fear have statistically significant higher positive attitude toward COVID-19 vaccination ($r = .46$; $p < .01$).

Testing Hypothesis 2

There is a weak positive correlation between the overall level of Fear of COVID-19 and Fear of vaccination ($r = .19$; $p < .01$). It is more interesting when we go on the level of subscales. Only physiological symptoms of fear and avoidance relate to the Fear of vaccination. People that try to avoid information about COVID-19 and don't want to think about it have statistically significant higher Fear of vaccination itself ($r = .30$; $p < .01$).

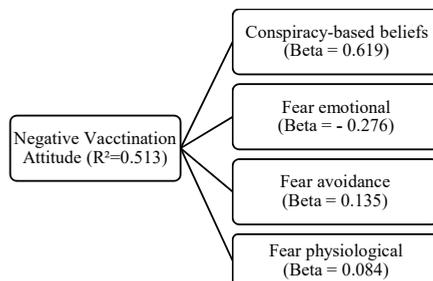
Testing Hypothesis 3

Both magical (naïve) and conspiracy-based beliefs are positively correlated with vaccination negative attitudes and vaccination cautious attitudes and negatively correlated with vaccination positive attitudes. It appears that conspiracy-based beliefs are more strongly associated with the three aspects of COVID-19 vaccination attitudes than magical beliefs (r between 0.59 and 0.68 against r between 0.26 and 0.32). This assumption is also supported by the results from the regression analysis described below where magical beliefs are excluded as predictor from the statistical model by the procedure itself. Misconceptions correlate positively and moderately with fear of vaccination.

Regression analysis was conducted with the aim of examining the strongest predictors of negative and positive vaccination attitudes. We decided to conduct this kind of analysis because it provides more specific information about the way each of the included factors relate to the dependent variables. The specific method chosen for this research was stepwise linear regression.

The results are presented in Figure 3 and Figure 4.

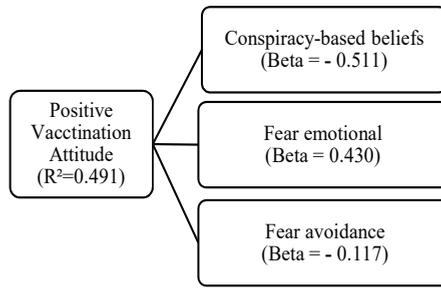
Figure 3. Predictors of Negative Vaccination Attitude ($R^2=0.513$)



The variables included in the present study are able to explain 51% of the variations in negative attitude towards vaccination. The negative attitude could be predicted by the three forms of fear and conspiracy-based beliefs. The most important predictor are conspiracy-based beliefs ($\beta = .619, p = .000$), the next is fear emotional ($\beta = -.276, p = .000$), the next is fear avoidance ($\beta = .135, p = .000$), the less important but still statistically significant is the physiological aspect of fear ($\beta = 0.084, p = .040$).

These results indicate that participants with negative attitude towards vaccination tend to hold conspiracy-based beliefs about the nature of COVID-19 and are also less scared from the virus and additionally show the tendency to avoid thinking about and dealing with the coronavirus.

Figure 4. Predictors of Positive Vaccination Attitude ($R^2=0.491$)



The variables included in the present study are able to explain 49% of the variations in positive attitude towards vaccination.

Vaccination positive attitude could be predicted by two of the three forms of fear and by conspiracy-based beliefs. The most important predictor are again conspiracy-based beliefs ($\beta = -.511, p = .000$), the next is emotional aspect of fear ($\beta = .430, p = .000$), the last is avoidance ($\beta = -.117, p = .000$).

The results mirror the analysis of negative vaccination attitudes. By contrast to what was said earlier about participants with negative attitudes, participants with positive attitudes towards vaccination tend not to hold conspiracy-based beliefs about the nature of COVID-19 and in addition tend to feel more scared by the virus and also express a tendency to deal with those fears instead of avoiding them.

Discussion

The positive attitude towards COVID-19 vaccination is dominant in the studied sample, followed by the cautious one. The negative attitude is the weakest.

Conspiracy-based beliefs are stronger than magical (naïve) ones.

There are significant differences between different aspects of fear. Avoidance as a form of fear is most pronounced, followed by emotional symptoms. Different

forms of fear of COVID-19 provide different useful information and ought to be considered as separate variables (at least in a Bulgarian sample).

The first hypothesis (H1) about the positive correlation between the fear of COVID-19 and the positive attitude towards vaccination is confirmed, as the connection with the emotional component of the fear is most pronounced. Negative and cautious attitudes are also mostly related to the emotional aspects of the fear of COVID-19, but in a negative way.

The second hypothesis about the negative correlation between the fear of COVID-19 and the fear of COVID-19 vaccination is not confirmed. In fact, there is a statistically significant result, but in the opposite direction to our expectations. The more are people afraid of COVID-19, the more they are afraid of vaccination against the virus, especially if they tend to avoid thinking about the COVID-19. There is probably a generalized reaction of fear to the unknown as both the virus and the vaccine against it are new and somewhat enigmatic. Or we just confirm a well-known fact of Social psychology that too much fear doesn't make people more prone to act. They'll prefer to hide or to ignore the problem, to avoid it rather than to undertake some appropriate action like vaccinate themselves.

People with magical and conspiracy-based beliefs are more afraid of COVID-19 vaccination, and share negative and cautious attitudes toward vaccination (confirmation of H3). These positive relations are much stronger and more obvious for conspiratorial beliefs, which is confirmed by the results from regression analysis where magical beliefs are excluded from the model by the statistical procedure.

Results from the regression analysis show that conspiratorial beliefs are the strongest predictor of negative attitude toward COVID-19 vaccination, complemented by the three aspects of fear of COVID-19. Therefore, beliefs in conspiracies, not so much fear and its components, largely determine whether a person (in Bulgaria) will have a negative attitude toward vaccination. Again, the conspiracy-based beliefs have the strongest negative impact on the formation of a positive attitude towards vaccination, followed by emotional aspect of fear and avoidance.

The established results give us reason to conclude that changing vaccination attitudes may be achieved through changing beliefs about the virus itself. If society keeps tolerating conspiracy beliefs, it is reducing its chances of coping with the pandemic, as vaccination rates would continue to be slower than optimal.

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CLINICAL PSYCHOLOGY AND MENTAL HEALTH

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WOMEN NAVIGATING THROUGH INFERTILITY TREATMENT (IVF) – TACKLING THE ISSUE FROM MULTIPLE POINTS OF VIEW

Abstract

Infertility affects, to varying extents, every fourth couple. It is an issue for both partners, however, women are the ones going through the intensive treatment (IVF): visiting doctors, injecting hormones, carrying pregnancies or even suffering miscarriages. This paper is a part of a larger study of psychological aspects of IVF in women. It uses triangulation of data sources and presents perspectives from a psychologist, infertility specialist and two women who experienced IVF in the past. Data obtained through semi-structured interviews were analysed with the qualitative thematic analysis. Five themes emerged: life course, loss of control, establishing agency, doctor-patient relationship and partner's role. Infertility disrupts the plans for starting a family. This discontinuation and the demands of the IVF lead to loss of control over the length, course and outcome of the treatment. Emotionally most challenging loss of control is a miscarriage. Women regain their agency through choosing whom to rely on and sometimes even choosing their doctors or clinics where the procedure will happen. Clinical environments and relationships with doctors seldom satisfy the needs for privacy, comfort and care. Partners are usually silent observers, providing support with logistics, more than with emotional needs of women. Experiencing IVF is a complex experience affecting physical, psychological and social lives of women. In order to understand the full complexity of this experience, further research should firstly explore perspectives of women from less privileged backgrounds.

Key words: infertility, IVF, triangulation, women experiencing IVF, thematic analysis

Introduction

In medical discourse, infertility is defined as inability to conceive a child after one year of unprotected sexual relations (World Health Organization [WHO], n.d.). However, psycho-social perspectives take personal as well as political contexts in which infertility happens into an account, and define infertility as a perceived difficulty which people are trying to overcome (Greil, 1997). People

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who seek infertility treatment perceive infertility as an obstacle in fulfilling their desired roles and are receiving medical help, seeing that they were unable to conceive spontaneously for a year. This paper will address the experiences of infertility patients, more precisely, the experiences of women going through in-vitro fertilization procedure (IVF).

Understanding statistics regarding infertility is a challenge – registered cases are usually the ones seeking medical treatment, so the number of all people struggling with infertility is unknown. Data shows that infertility affects from one in every fourth couple (International Federation of Fertility Societies [IFFS], 2016) to one in every tenth couple (Deka & Sarma, 2010). World Health Organization claims that during a five-year period, 10% of women are affected by infertility (WHO, n.d.). These discrepancies are a product of a complex interplay between eligibility, funding and private and public health system. In Serbia, a uniform register of all cases doesn't exist; state financing of IVF is available to women younger than 45 but women not eligible might try IVF in a private clinic at their own expense, also many couples go through several IVF procedures and are re-entering the system multiple times.

Before entering the health system, partners struggling with infertility face personal and family challenges. Conceiving a child and starting a family is an expected step and a desired developmental phase for many (Cunningham & Cunningham, 2013). Many authors have written about the “motherhood mandate”, meaning that becoming a mother is one gender norm conforming to is almost mandatory (Russo, 1979; Todorova & Kotzeva, 2003). Realising that motherhood might not come at an expected moment affects women's image of themselves, thinking that infertility makes them less of a woman, leaving them unfulfilled (Franklin, 1997). Men are obviously encountering personal struggles as well, infertility is often perceived as demasculinizing (Inhorn & Birenbaum-Carmeli, 2008). Even though becoming a parent seems like less salient aspect of men's adult life, fatherhood stills play an important role in men's gender identity (Stanojević, 2015).

Being surrounded by peers starting families might cause people struggling with infertility to feel like outcasts (Todorova & Kotzeva, 2006). Realising that starting a family, which is perceived as a natural step and happens even by accident for some, is put into question, may create a psychological crisis (Franklin, 1997; Vlajković, 2005). This temporary (and for some permanent) discontinuation of the life course may lead to partners directing their emotional, cognitive and material resources into infertility treatments, which affects other aspects of their lives (spending years in infertility clinics is not unusual, patients describe this period as “life on hold”; Franklin, 1997; Todorova & Kotzeva, 2006). Potential pregnancies following the experience of infertility are not unambiguously joyous experiences, but are perceived as a result of a long and exhausting struggle (Meyers et al., 1995).

Women Experiencing IVF

Infertility treatment in the shape of IVF can become a lengthy and exhausting procedure for patients. Many couples experience failed IVF cycles which motivates them to start a new one, creating a whole new life dedicated to infertility treatment (Franklin, 1997; Thompson, 2005). In the Republic of Serbia, IVF is a legally regulated procedure by the law of assisted human reproduction (Zakon o biomedicinski potpomognutoj oplodnji, Službeni glasnik, 2017) which means that eligibility criteria and financing is to some extent regulated by the state. In the past fifteen years, number of allowed state-financed procedures went from only one for women younger than 38 to an indefinite number for women younger than 45 (Republički fond za zdravstveno osiguranje, 2021). These changes are perceived to be in line with ongoing pro-natalist policies (Bjelica, 2017). Patients who don't meet eligibility criteria lose their right for state financed procedure but are able to continue to seek treatment in private hospitals at their own expense. Navigating through regulations and procedures brings another layer of challenges to couples while exhausting state funding options might also lead to immense financial struggles.

Starting IVF treatment poses a greater challenge for women than for men, both physically and psychologically. Women are actually embodying the treatment – putting their bodies through analyses and hormonal changes, carrying pregnancies and experiencing miscarriages (Balen & Inhorn, 2002). Navigating through complex demands of the treatment (handling doctor's appointments and respecting strict schedules; Thompson, 2005), while dealing with the uncertainty of the outcome leads to women experiencing considerably higher levels of emotional stress than their partners (Cunningham & Cunningham, 2013; Schmidt et al., 2005). These personal struggles happen in a somewhat alienating and cold medical environment which makes the experience arguably more difficult („intensely technical and intensely personal”; Thompson, 2005, p. 8).

Communicating with the close ones about these struggles is somewhat complicated. Patients feel like facing a discontinuation of life course through infertility is often insufficiently legitimate pain (Seibel, 1997). Some losses are more materialized, like miscarriages. They are more common with infertility treatment than in general population (Serrano & Lima, 2006), and they also carry a larger psychological burden. Even with miscarriages happening relatively early on, losing a pregnancy means a failed IVF cycle in which a lot of time, material and emotional resources were invested (Ainsworth-Smith, 2007).

Going through infertility treatments doesn't have an unambiguous outcome on the strength and quality of partner relationship. Some findings suggest short crisis and successful IVF cycles might even improve partner relationships (Holter et al., 2006). Having multiple IVF cycles, programming sex with the sole purpose of conceiving and losing the sense of intimacy and privacy in front of doctors are

factors that might negatively influence partner relationships (Meyers et al., 1995; Valsangkar et al., 2011).

Besides partners, other close relationships might encounter hardships, too. Going through infertility treatment is a complicated and vulnerable experience where other people have an important role of moderating its impact. Being surrounded by people who don't empathize enough or give insensitive comments and advice is perceived as an additional source of stress (Freda et al., 2003; Lemmens et al., 2004; Meyers et al., 1995). These negative experiences lead to isolation of people struggling with infertility which prevents them for gaining support and help they might benefit from.

Expectations to form warm and trusting relationships translate to the medical context as well, where the chances for it to happen are even more rare. Women value high quality relationships with doctors, seeing that the "power" is in their hands (Cunningham & Cunningham, 2013). However, they often point out the lack of warmth and understanding in doctors who treat infertility (Malina et al., 2001).

Present study

Infertility is a fairly common experience and poses a threat to an expected and desired life course. Infertility treatments are lengthy and potentially emotionally painful, with no guarantees of leading to a desired outcome – a healthy pregnancy. In fact, pregnancies resulting in miscarriages are more common in infertility patients than in the general population. This opens up a need to explore the course and psychological characteristics of an IVF experience with a specific focus of women, who embody the whole procedure. This paper is a part of a larger study on psychological aspects of infertility treatment for women and presents the analysis of preliminary data collected during the pilot phase. It addresses personal aspects of infertility and IVF experiences which are usually kept private and avoided in public discourses on infertility and IVF (political or medical). It explores the following questions *How do women faced with infertility perceive themselves and their life plans? How do women experience IVF? How do they perceive the partner's role in this experience?*

Methods

It uses qualitative methods of gathering and analysing data. To achieve higher credibility of findings, triangulation of data sources was used (Patton, 1999). This meant purposefully sampling participants with noticeably different perspectives on IVF treatment.

1. Two clinical experts – a psychologist providing support for infertility patients in one private clinic and a nationally recognized infertility specialist practicing in a prominent public clinic.

2. Two women who experienced IVF in the past – Sara went through four unsuccessful procedures and remained childless permanently (she didn't have any IVF procedures recently and speaks of herself as a person without children), while Ana had one successful procedure and got healthy twins after multiple medical complications during pregnancy. Both women are in their forties had graduated with their PhD. Both remained in the same partner relationships they were at the time of the infertility treatment.

Interviews have been conducted in Belgrade, Serbia, where participants and the researcher live and work.

Data Collection And Data Analysis

Data were collected through semi-structured interviews recorded with the participant's consent. Interview agendas were specifically tailored for participant's perspectives and allowed for unique experiences and narratives to be expressed:

1. Clinical experts were asked about their practice with infertility patients, the course and specifications of treatment and about their own perspectives on IVF as an experience.
2. Women who experienced IVF were asked about their thoughts and feelings on infertility, IVF procedure, their partner relationships and experiences of hospital treatments and miscarriages.

Interview agenda has led the conversation but participants were invited to make additional remarks and speak freely about any aspect they find relevant. Interviews lasted around an hour and were conducted individually in the environment participants have chosen (one interview was conducted through an online calling application). Rich data stemmed from the interviews and were analysed qualitatively with the techniques of inductive and deductive thematic analysis (Braun & Clarke, 2006). Thematic analysis consisted of a set of sequential steps – starting with data familiarization (listening to recording, transcribing, reading the texts), initial coding (noticing small chunks of meanings), identifying themes based on similar and distinct codes, reviewing them and finally naming and defining them (ibid.). The main objective for this analysis was to define themes which are consistent across participants and potentially identify the differences between perspective that shape the content of the themes (Patton, 1999).

Results and Analysis

Five distinct themes emerged from data: *life course*, *loss of control*, *establishing agency*, *doctor-patient relationship* and *partner's role*. All of them were present with every participant but some differences in perspectives are noted. Inductive thematic analysis meant identifying and describing themes which rose from participants' narratives and were not explicitly addressed in the interview

agenda (for example, loss of control). Deductive thematic analysis helped creating a comprehensive account of the IVF experience by describing the themes driven by the by the interview agenda (for example, the role of the partner).

Life Course

Discontinuation of life course with infertility was addressed only implicitly through the interview agenda (for clinical experts – describe women you’ve worked with, for women – describe your life before IVF), participants talked about it mostly spontaneously. The clinical psychologist had experience with women of various age but found similarities in terms of status: women starting IVF in her clinic presented themselves as independent and were mostly employed and educated (she called them “very smart, successful, fierce women”). IVF procedures are state-financed in the private sector also, so this impression might not be a result solely of her position in a private clinic. However, her patients valued and voluntarily participated in support groups and that could point to the fact that they represent a specific group with shared values. Both women from the sample, who went through IVF were also educated, with steady employment, lived in an urban area and started thinking about family in their thirties. On one hand, it can be argued that women start perceiving the delay in family planning as a particular problem only after accomplishing other parts of a life course, while on the other, it is important to stay aware of their privileged social background which might have been a factor in shaping their perspectives. For example, they rarely felt the social pressure to start a family “We were never burdened with that” (Ana), they felt like having children was a logical and natural step in their life course. They shared a similar perspective: “My mother had the four of us, she didn’t think about it much. Children were all around me, it was natural and easy” (Sara); “He (the partner) understood how important was it for me to become a mother (...) It was natural for us.” (Ana). However, for these women, encountering infertility created a threat to the life course and had a potential of developing into a psychological crisis.

IVF, as a medical procedure, relies on timely reactions in terms of the patients’ age (it is state financed until the age of 45 for women). The doctor mentioned the importance of timely reactions when it comes to infertility treatments – even six months of unprotected sex without conceiving becomes a red flag for women older than 35. Psychologist, however, expressed a concern about the pressure that the passage of time creates. One of the women mentioned how frustrating is to be getting older without a desired outcome: “nothing was happening” (Ana) and being around people who spontaneously get pregnant: “Your friends and colleagues are getting children and you have that anxiety inside you.” (Ana).

Psychologist’s unique perspective as a helper opened her up to understand patients’ beliefs, like that starting a family is a necessary next phase and must happen instantaneously, as potentially dysfunctional: “It’s very important to

work with them on a concept of timeliness of life events. How necessary it is for it to happen right now”. These discrepancies between the social and medical expectations on one hand and psychological recommendations on the other, might be an additional source of frustration for patients.

Loss Of Control

Losing control over one’s life course and experiencing psychological crisis leads to a “life on hold” which was recognized by all of my participant. IVF takes a lot of time, financial and emotional resources, especially for women. There are multiple fears over which the patients don’t have any control, regardless of the support they could receive or resources that might be available. Starting with the decision of a funding committee, through the multiple possible outcomes of the procedure (stimulation might not work or women can be overstimulated, number of egg cells must be appropriate, embryos should develop according to expectations...), women are in a constant state of uncertainty. As Sara shared: “You really get overwhelmed and people are telling you to calm down and it will happen”. Even though two women from this study encountered very different outcomes, they share the experiences of helplessness and feeling exposed, both physically and emotionally. “That feeling, when you’re completely naked, going into the operation room. You are just thinking about what’s going to happen. (...) There is nothing you can do; you just fall to sleep.” (Ana). The moment described is the moment of embryo-transfer, which is recognized as a typically joyous event by doctors. For women however, it is a moment during which they can’t do anything, even physically move: “I was lying the whole time. And there I was, believing that with me lying there, with my thoughts, I could influence the outcome” (Sara).

Psychologist tried through her support groups to encourage women to prevent “life from freezing”. Her attempts were not always successful – she noticed women living only for their jobs and IVF, limiting their social contacts and experiencing “total lack of enjoyment”. Sara explained: “I was always in it. Analysed everything. Even when I went to the toilet.”

Going through several IVF procedures might lead to a loss of control over one’s finances, physical and emotional health. After going through a complicated pregnancy, Ana shared: “Until later, I was completely unaware how jeopardized my health was”. Infertility specialist emphasised that focusing only on the outcome of IVF has negative consequences on patients’ physical and mental health - “if they are already exhausted and are entering a new IVF cycle, they can hardly get pregnant. You need to give your body a rest. You’re entering a highly challenging procedure”. Sara went through four unsuccessful IVF procedures and felt the described exhaustion: “After everything, I just said – I can’t do this anymore” (Sara).

Being in a state of expecting a loss somewhere along the procedure causes complex negative emotions in patients and uncertainty levels raise up when causes

for these losses are unknown. The infertility specialist said that “everyone would love to know why the procedure failed. If we were to know why, we would get a Nobel’s prize!”. After hearing (inaccurate) news about her not being pregnant, Ana said “I thought that I was ready for everything but I couldn’t stop crying.” Most dramatic loss of control is a miscarriage, an extremely emotionally painful experience. In the words of the psychologist “That’s when everything gets mixed up”. Miscarriage materializes loss of all the effort and obviously the loss of a pregnancy: “The good news (about being pregnant) make you feel better and then you just stumble down” (Sara).

Establishing Agency

Even though IVF procedure is filled with strict schedules and high expectations, women going through it keep or regain their agency in multiple ways. They usually attempt to shape the physical and social environment in which the procedure happens. Some spaces for agency are available to most of the women. IVF is considered a private matter and women can intentionally choose who to include in the process and who will be left out “I’ve spoken to one of my friends... The other was too aggressive in her need to know everything” (Ana). Women can also make choices about where do they put their trust and how do they complement traditional medical procedure “I visited a naturopath... She asked me many questions and she completely turned around how I felt... As if the weight was lifted from my shoulders.” (Sara).

It can be argued, however, that possibilities for agency as well as the women’s narratives surrounding it are shaped by the outcome of IVF and their social status. Ana gave birth to healthy twins and strongly emphasised the importance of her agency. These feelings gave her the strength to continue with the treatment and a pregnancy with multiple complications: “If something is solvable, it’s going to be solved. It just depends on whether I work hard enough or cooperate with the doctors.” She is the one whose financial status allowed her to even choose a country where the procedure will be conducted: “We went abroad due to large quantity hormones administered here to women” (Ana).

For other women, it is possible only to “they circle a desired clinic” (as emphasised by an infertility specialist), when applying for funding. Sara had her first procedure even before the public funding was even available. She also never had a full-term pregnancy and her options for establishing agency are quite rare. However, she feels the space to make sense of her life after four unsuccessful IVF, establishing agency in how to organize her work responsibilities and social relationships: “When I think about all of my responsibilities and whom do I give my time and energy to... Where would I fit that child?”.

Finally, some institutional spaces for establishing agency are possible, but not universally available. The psychologist organized support groups where presence was not mandatory, but encountering similar experiences among other

women helped the patients in making sense out of their painful experiences. This opportunity to find strength and messages of encouragement from other women (“they root for each other, wonderful women”) is reserved for women seeking for treatment on clinics offering counselling, which is not an assumed part of IVF.

Doctor-Patient Relationship

The paradox of the IVF is that it is “a thing of the deepest intimacy” (Ana), but its most challenging moments (embryo transfer, pregnancy announcement) happen in the cold and alienating clinical context. Infertility specialist emphasised the environment in which embryo transfer, typically joyous event, happens: “It happens in the operation wing. Conditions are sterile, the temperature of the room and of the surfaces is controlled”. Ana noted that during her examinations, there were other people present: “Doctor called her intern and said – look at this, you’ll never see this again”.

Formation of trusting and warm relationships with medical staff compensate for this environment and is considered an important aspect of the procedure. The infertility specialist mentioned “women tend to make a personal relationship with their doctors. She gets informed by her doctor, she trusts him, whom else would she trust?”. Psychologist recognized that trusting a doctor who is in charge of the treatment may help women feeling more relaxed in the clinical context. This was confirmed by the infertility specialist. She emphasised how much value she puts into creating an honest and trusting relationships with her patients - “I am the only one who talks to them, that’s what makes me different. Everything else is done routinely.”

However, many uncomfortable or even traumatic experiences happen due to insensitivity of staff or logistics. In the words of Sara: “I had some emotional stresses, doctors offending me or misunderstanding me”. Among other things, women need to navigate through complex doctors’ responsibilities (obstetricians, gynaecologists, embryologists, nurses), all needed at different times of the treatment. Psychologist explained “there are many patients in a small space where doctors don’t have the time or an expertise to provide psychological support”. These characteristics are sometimes perceived as an exemption for doctors – they have a right to not abide to rules of sensitivity and compassion. Both Ana and Sara claimed that the doctors “have a right to their jargon” even though this was at several occasions a cause for large psychological pain. After a miscarriage, Sara experienced a doctor saying “It was all so fast. He looked at the ultrasound and said – this needs cleaning, nothing will come out of this”.

When immediate emotional hurt is not caused, patients still have a hard time communicating with doctors, usually reading between the lines, interpreting their reactions instead of getting clear and unambiguous information. Both Sara and Ana experienced this on rather different occasions: “I thought to myself, embryos are there, they are fine. Because, when the doctor did the ultrasound,

she asked me to confirm, were there two.” (Ana); “I was at an ultrasound and she asked me “We have some frozen embryos?” We went out and my partner said that here is something wrong, why would she ask about frozen embryos if everything was okay” (Sara).

Partner’s Role

Women are the ones embodying infertility treatments and medical roles of their partners are limited. Their psychological role is however, left to be further researched, and is addressed throughout the narratives of all the participants in this study.

It could be argued that their engagement is shaped by social expectations of men, as well as logistics. Infertility specialist believes that the partners remain passive thanks to the traditional ways of treating them: “We haven’t made any progress when it comes to men. We only see spermatozoids.... While he may be struggling.” Sara agrees on this – men are usually perceived as the ones giving a sample and then leaving the procedure altogether “My perspective was that he needed only to give a sample, but obviously, it’s not like that”. Psychologist’s impression was that partners fail to communicate properly about what’s hurting them, leading to a total absence of the partner in the process of treatment. Partners who don’t understand the stress women are going through find like it’s best to distance themselves: “Men are not able to sit down and talk their problems through”.

While women are going through treatment men are sometimes absent due to their work responsibilities. Psychologist’s perspective was that this makes partners silent observers at best. Ana described the involvement of her husband as purely logistical “When he was in the country, he was there for me. He drove me to the doctor whenever I needed it”. When it comes to making decisions and wholehearted support, women said: “First time was the hardest (...) He wasn’t there for me. He was indifferent, thinking it’s not important whether we have a child or not.” (Sara); “He said that it was my decision. He could live with or without children. He said that I should make a decision: when, where and how.” (Ana).

In the worst cases, partners may even contribute to the levels of felt stress by blaming women for feeling overwhelmed. Psychologist claimed that women often “fell to tears when asked if marriage was okay”. Even though she encountered many wonderful partnerships, she felt like one of the main issues with psychological healing, besides the need for control, were partners - “not all relationships are bad, but most common problems are partnerships and locus of control”.

Discussion

Through the triangulation of data sources (Patton, 1999), this paper addressed personal aspect of IVF experience. From the narratives of two women who experienced IVF and two experts working with IVF patients, five qualitative themes emerged which will be additionally discussed in the following paragraphs. These narratives largely support previous research on women experiencing IVF, emphasising how demanding, both physically and emotionally, this experience is. Emerged themes however, direct the attention towards additional, under researched aspects of the experience, like establishing agency or making sense of the partners' involvement.

Life course is the theme through which expectations and life plans came to light. It can be argued that active work towards starting a family begins after other life goals are accomplished. Therefore, infertility and IVF present a discontinuation of life plans, putting a life on hold, challenging personal expectations women have of their gender roles and partnerships, sometimes even causing a psychological crisis. Starting a family is a natural step in the life course for many, which is the reason infertility disturbs core beliefs about how their life should look like at that point (Cunningham & Cunningham, 2013; Franklin, 1997; Vlajković, 2005). The uncertainty of the treatment's length, course and outcome affects women's coping mechanisms and their personal relationships (Franklin, 1997).

Logistics of the procedure strip women of their agency – procedure has a set of routinely conducted steps, organized in accordance with available staff, resources and time (Thompson, 2005) – spaces for making decisions and actually tailoring the procedure according to individual needs are scarce. Most dramatic part of the experience is a possible miscarriage or even the threat of losing a pregnancy (Ainsworth-Smith, 2007). Pressures coming from the concept of “biological clock ticking” stand in opposition with psychological recommendations of taking some time to rest and care for mental health, physical health and the quality of partner relationships.

Under researched part of the experience are spaces for agency women successfully keep throughout the exhaustive procedure. They make decisions about their social environment, for example, whom to include in their inner support circle. Sara, for example, made the active steps towards complementing IVF with alternative medicine. Ana however, thanks to the available resources, had a say in which doctors and clinics will be in charge of IVF.

Infertility treatments happen in hospitals, which makes them unique experiences – something private and intimate like starting a family is happening before the eyes of many doctors and interns, in cold, sterilized rooms (Thompson, 2005). Seeing that formation of warm and trusting relationship with a doctor is considered a priority (Malina et al., 2001) these relationships are sometimes

more available in the doctor's private practice (Pantović, 2019). This is where the notion of privileges in IVF becomes important – assuring high-quality relationships with doctors is not only a question of time, staff and resources in clinics, but a question of making “connections” with doctors (Pantović, 2019). Ana emphasised the expertise and presence of the doctor whose services were already paid in his private practice. When a personal relationship with doctors is not formed, doctors can go from not fully disclosing information to women, to not understanding or even being dismissive.

The role of the partner in the IVF procedure seems somewhat complicated (Meyers et al., 1995; Valsangkar et al., 2011). Men's engagement is understood in the context of their wider gender roles, existing outside of partner relationships. Social expectations and prescriptions of men may influence how they deal with their emotions and what roles they take when it comes to being there for their partners going through IVF. Although some findings suggest that men are going through a challenging time (Inhorn & Birenbaum-Carmeli, 2008), their involvement is rarely perceived as meaningful.

This paper presented three different points of view from four women encountering IVF procedure from the perspectives of helpers or patients. Its findings may direct infertility specialists' practices in terms of quality of doctor-patient relationships and availability of emotional support. Furthermore, it gives IVF patients reassurance and contributes to normalization of complex emotional reactions and processes that happen during IVF. However, Both Sara and Ana belong to the upper-middle class, which might have shaped their experiences to some extent – they rarely felt any family pressure and were able to reach for additional support in private or alternative health care. This paper is a part of a larger study on psychological aspects of infertility which aims to overcome this limitation by including women of various socio-economical backgrounds, who, quite possibly, don't have many additional resources available and whose perspectives could lead to new themes emerging. Further research might explore the experience of IVF through social and physical context in which it happens, like in Thompson (2005), who used an ethnographic approach to understanding the clinical environment. Including men would complete the image of their role and make sense of their behaviour typically recognized as detached. Finally, to further understand the complexity of the experience, it could be valuable to stay in contact with women going through IVF in real time, as to avoid the outcome of the procedure shaping the narratives.

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INJUNCTIONS, SELF-CRITICISM AND SELF-REASSURING AS PREDICTORS OF RESILIENCE

Abstract

The goal of this research is to explore the role of injunctions, self-criticism, and self-reassuring in the prediction of resilience, a dynamic process of positive adaptation in the context of important adversities. The sample ($N = 200$) consists of students from different universities in the Republic of Serbia, of age 19 to 36 ($M = 22.85$, $SD = 2.73$), 132 female and 68 male. The following questionnaires were used: Script Injunctions Scale, The Forms of Self-Criticising/Attacking & Self Reassuring Scale, Connor-Davidson Resilience Scale, and a socio-demographic characteristics questionnaire. The hierarchical regression analysis has been conducted for data analysis. The first model consisting of injunctions, has shown to be statistically significant ($R = .53$, $R^2_{(adj)} = .24$, $F_{(12,187)} = 5.16$, $p = .000$), with statistically significant predictors being: Don't think and Don't be successful. The second model contribution, with Self-reassuring and Self-criticism (contains dimensions: Inadequate Self and Hated Self) added, is also statistically significant ($F_{Change(3,184)} = 35.83$, $p = .000$), and this model accounts for 51.5% of the variance of resilience ($R = .74$, $R^2_{(adj)} = .51$, $F_{(15,184)} = 12.79$, $p = .000$). The following predictors are distinguished as significant: Don't think, Don't feel, and Self-reassuring. These results indicate the relevance of injunctions and self-reassuring regarding resilience in the context of favorable and unfavorable conditions for its progress.

Keywords: injunctions, self-criticism, self-reassuring, resilience

Introduction

Injunctions as Unfavorable Factor to Developing Resilience

Life script or life scenario is an unconscious life story that each of us "writes" for oneself in childhood and it has a beginning, middle, and end. We also add new things to it throughout life, although most of it is written by the age of seven. This concept, together with the ego statemodel, represents the basic idea

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of Transactional Analysis and is of great importance in the psychotherapeutic application (Stewart & Joines, 2011).

Eric Berne defines a life scenario as a life plan made in childhood, which was confirmed by parents, justified by subsequent events, and culminated through the chosen choice (Berne, 1961).

There are 2 basic characteristics of script formation: 1) Scripting decisions are the best child strategy for surviving in an unfavorable world that is sometimes life-threatening; 2) Script decisions are made based on the child's emotions and its ability to understand reality.

Transactional Analysis implies that each person has their own ego states (Parent, Adult, and Child). In the interaction of parents with children, both parents transmit 3 types of script messages to the child from all three of their ego states (Drivers, Program, and Injunctions/Permissions). The messages from the ego state Child are called script injunctions (prohibitions) or permissions, and they are originally nonverbal, negative commandments, given in early childhood from the parent's Child (Stewart & Joines, 2011).

Bob and Mary Goulding (1972), in their therapeutic work, found that twelve themes of injunctions are constantly emerging as a basis for early negative decisions. The twelve injunctions are: 1) *Do not exist (injunction of existence)* - includes the feeling that we are worthless, useless, unworthy of love, and suicidal thoughts, and they come from the parent who feels deprived or threatened because the child exists and can be communicated openly with physical/mental abuse. 2) *Don't be you (don't be your own sex)* - this injunction is made by parents who have a boy and wanted a girl (or the opposite) but can be more general and convey the message "be someone else" (parent reacts positively only to characteristics that resemble the picture of "ideal child"). 3) *Don't be a child* - injunction given by parents who in their ego state Child feel threatened because they have a child or by parents who were not allowed to behave like children (e.g., the oldest children or individuals give themselves this injunction). 4) *Don't grow up* - this injunction is often given to the youngest child when parents, in their ego state Child, want to always have a small child next to them, because they may define their value by being a good parent. This injunction is also given by parents who have never fully grown up. 5) *Don't be successful* - this injunction is given by a parent who, from the ego state Child envies the achievements of his child. 6) *Don't (Do nothing)* - injunction is given by a parent who, in his Child state, is terrified that something will happen to their child and the reason for that fear lies in the parent's script, not in reality. It can manifest as a feeling of indecision or a feeling of not getting anywhere. 7) *Don't be important* - this is another message from the parental impulse to reject the child (the child and his wishes are not important). People who carry this message can feel panic when asked to take on the role of leader, in any sense, and they can sabotage themselves. 8) *Don't belong* - if parents are socially maladapted or they constantly told the child to be "different from other

children” or blame it for everything. A person with such an injunction feels like he is “sticking out” in a group, while other people may see him as “lonely” or “unsocial”. 9) *Don't be close* - this can be an injunction on physical intimacy (when parents rarely touch each other or a child), but can also mean “Don't be emotionally close” (in families where people don't talk about their feelings), or “Don't trust anyone” (when parent suddenly leaves/dies or abuse/exploit the child) which leads to constantly suspect others and look for signs of rejection. 10) *Don't be well(don't be mentally healthy)* - when parents are too busy to spend time with the child, but they spend it when the child gets sick (“To get attention, I have to be sick”), or by labeling (“He is a weak child”). In the “Don't be mentally healthy” situation, the role model is often in a psychotic parent and gets attention only if he behaves similarly. 11) *Don't think* - can be passed on by parents who constantly belittle the child's thinking. People with this injunction will react to the problem by being confused or feeling bad, instead of thinking about solving the problem. There are two variants of this injunction: “Don't think of 'x'”, where 'x' can represent money, sex, etc., and “Don't think what you think, think what I think”. 12) *Don't feel* – when parents hide their feelings, the injunction could relate to any display of feelings (you can experience, but don't show it, e.g., “Boys don't cry”) or to specific feelings (e.g., don't feel fear). Sometimes, it implies “Do not feel physical sensations” and if strong enough, it can be a source of serious problems in adulthood (eating disorders, psychosis).

According to Lammers (1994), injunctions are given by powerful others; they lead to inadequate decisions about thinking, feeling and behavior; and they may cover a whole area of functioning or only a part. Lammers (1994) suggests a definition: Injunctions are repeated and/or traumatic early parental messages which lead to chronic impairment of functioning in vital areas of life. When observed in this context, injunctions may be seen as a possible factor interfering with achieving positive adaptation despite great dangers to developmental process, which is, by Želeskov Đorić (2012), one of the two most important conditions necessary in defining resilience.

Self-criticism as Unfavorable Factor to Developing Resilience

Self-criticism is defined as a process of self-evaluation in which individuals study and condemn various aspects of themselves, such as personality traits, appearance, and behavior (Shahar et al., 2015; as cited in Božić & Matsuka, 2018). Although most people assess themselves daily, people who experience high levels of self-criticism adopt harsh, self-centered behaviors. Self-criticism, therefore, refers to the constant and sharp observation of oneself and to a chronic fear of disapproval and criticism from significant others (Blatt, 2004; as cited in Božić & Matsuka, 2018). Individuals who are extremely self-critical perceive personal mistakes and their bad characteristics (e.g., physical appearance, bad abilities) and constantly think about them, which in turn leads to contemptuous

behaviors directed towards themselves that can cause feelings of helplessness, anxiety, or depression. Self-attack is most often triggered when people believe in their future failure and feel they have made a mistake in important aspects of their lives. In doing so, individuals may show intense feelings of hatred, repulsion, and self-loathing (Gilbert et al., 2004; as cited in Božić & Matsuka, 2018).

According to the evolutionary point of view, Gilbert (2004) defined self-criticism in detail as a form of psychobiological attitude towards oneself, stating that people have developed specific competencies to be able to learn, understand and approve different social roles, and it is precisely social competencies that are the basis for internal self-evaluation and they operate through the same mechanisms of information processing and patterns of behavior that develop from social relations (Gilbert et al., 2004; as cited in Božić & Matsuka, 2018).

Pathogenic characteristics of self-criticism can result from negative emotions associated with it, especially anger (self-directed), disgust, and contempt, as well as their connection with emotionally colored memories (Gilbert, 2010; as cited in Baião et al. 2015). Self-criticism can slow down and disable the benefits of psychological interventions. Therefore, if a portion of the psychotherapeutic process would be to increase the resilience of a patient/client, it is possible that self-criticism may impede that process. For example, Rector et al. (2000; as cited in Baião et al., 2015) find that self-critical patients will have a poor response to cognitive behavioral therapy and that a successful response to therapy is associated with a significant reduction in patient's self-criticism. In the context of resilience defined as a trait (Manzano-García & Ayala Calvo, 2013; as cited in Milovanović, 2018), self-critical people tend to very poorly tolerate negative emotions.

Self-reassuring as a Favorable Factor for Developing Resilience

In contrast to self-criticism, self-reassuring is defined as the ability to self-affirm, support, empathize, and be able to remember positive qualities when faced with failure. Self-reassuring has been associated with improved coping skills, resilience, and perseverance (e.g. Gilbert et al. 2004; as cited in Halamová et al., 2018).

In order to examine self-criticism and self reassuring, a questionnaire to measure both of these constructs has been made (Božić & Matsuka, 2018). There is growing evidence that self-criticism and self reassuring are not bipolar and that the absence of one shouldn't imply the presence of the other. There is also evidence that self-criticism is associated with threats and vulnerability to mental health problems, while compassionate self-validation (self-reassuring) is associated with affiliation affects and supports the development of well-being (Halamová et al., 2018).

Resilience

Resilience is a dynamic process of adaptation in the context of some significant troubles (Želeskov Đorić, 2012). There are plenty of different definitions of resilience, but the most important are two conditions without which we couldn't adequately define resilience, which are: 1) Exposure to a threat or serious trouble; 2) Achievement of positive adaptation despite great dangers to developmental processes.

Main process in building resilience is the development of adaptive coping mechanisms which are at the same time both risk and protective factors and are related to resilience. According to Želeskov Đorić (2012), risk factors mean experiencing numerous stressful life events (relocation, transition, etc.) or single traumatic events (divorce, death of a close person, etc.), whilst the protective factors are a trio which includes the following. 1) *Dispositional characteristics of a person*, such as intellectual capacity (Baldwin et al., 1993; Brooks, 1994; Wolff, 1995; Wright et al., 1997), easy temper (Werner, 1996; Wright et al., 1997), autonomy (Werner, 1996), self-confidence (Polk, 1997), sociability and effective coping strategies (Brooks, 1994) and communicational skills (Werner, 1996); 2) *Family characteristics* which imply the presence of cohesion, feeling of warmth, structure, emotional support, positive forms of attachment and close relationship with at least one important person (Baldwin et al., 1993; Brooks, 1994; Masten & Coatsworth, 1998; Stewart et al., 1997; Werner, 1996; Wolff 1995; Wright et al., 1997); 3) *External support factors*, such as good relationships with others (Wright et al., 1997).

Considering these two concepts, on the one hand, resilience represents a balance between stress and difficulties to which a person is exposed and ability to cope with them, as well as the support of the environment the person is a part of, on the other.

Disagreements of different authors regarding the concept of resilience are related to how the term is conceptualized, as a trait or as a dynamic process. If defined as a trait, then resilient person would be a person who accepts reality, adapts to significant changes, deeply believes that life has sense, tolerates negative emotions, a person who is optimistic, patient, faithful, possesses the skills of problem resolution and curiosity (Manzano-García & Ayala Calvo, 2013; as cited in Milovanović, 2018). If resilience is defined as a process, it would represent a dynamic process of manifestation of positive adaptive skills despite the significant, traumatic adversities and a measure of ability to overcome stress (Luthar et al., 2000; as cited in Milovanović, 2018).

Development of the Resilience in Early Childhood

Early childhood is particularly relevant when it comes to establishing resilience. Studies that focus on the relationship between parents and children have shown that the warmth of a parent is important for child's development and

that it is related to social and emotional well-being of a child (Kim-Cohen et al., 2004, as cited in Taket, 2014). Parenting is identified as a key factor in promoting or compromising the resilience of a child (Bernier et al., 2010; Fenning & Baker, 2012; Horning & Rouse, 2002; Malmberg & Flouri, 2011; Mathiesen & Prior, 2006, as cited in Taket, 2014). Positive and supportive relationship with the caregivers gives children support and could encourage self-regulation, while providing them with feedback about emotions and guiding them towards the positive solutions of problems (Taket, 2014). Also, engagement of parents in cognitive-stimulating activities during the preschool period predicts the resilience to stressful events later in life (Cowen et al., as cited in Taket, 2014).

In research conducted by Taket et al. (2014), the way that mothers perceive resilience in regards to their children, the concept of resilience meant: persistence, good at keeping up with what life gives you, independence in routines, solving problems and making decisions, strong will, and confidence to take the challenges and stand up for oneself. Mothers who had resilient children, often established specific routines where children had clear responsibilities, such as cleaning their room, helping with some chores around the house or remembering to bring lunch to kindergarten/preschool on their own. These strategies help children to develop certain organizational skills and become independent. In contrast to them, are injunctions which some parents refer to their children, such as *Don't* and *Don't be successful*, by which they restrain children's independency, so it can be assumed that relationship between children and parents, even though it is important for developing resilience, can negatively influence its development if that relationship is predominantly saturated with injunctions rather than strategies which can encourage children's independence in a responsible and supporting way. Another strategy that mothers of resilient children used was talking to their children about things that have happened to them and analyzing these things together, while offering them multiple alternatives and options for action, in which way they empowered children's self-confidence and thinking that they could manage adequately in forthcoming situations. This strategy is in direct contrast with injunction *Don't think*, through which parents do not give time and opportunity to the child to try and successfully solve the problem itself.

Other findings in the research of Taket et al. (2014) have shown that the mothers of resilient children give more importance to socio-emotional learning, so they would teach their children to form and maintain good relationship with their peers and to respond adequately to challenges, but also to hurtful and harmful behavior from their peers. The main component of this kind of learning is accepting a child's feeling about physical or emotional pain and encouraging children to express these feelings. In contrast to that, parents who hide their feelings or don't support their children's need to emotionally express themselves or to even feel, can transfer the injunction *Don't feel* to their children.

According to Grotberg (1995), in order to overcome troubles, children gain their characteristics from three sources marked as: *I have* (people around me whom I trust and who love me, people who teach me how to do right things with their example and independently, people who help me when I'm sick, in danger or have need to learn), *I am* (someone likeable and who can be loved, certain that things will be alright, glad to do nice things for others and to show care for them, someone who respects oneself and others and is responsible for own actions) and *I can* (talk with others about things that scare and hurt me, find ways to solve problems, sustain myself when I feel the desire to do something that is not right, realize when is the good time to find someone to help me when I need help). Resilience is the result of a combination of these characteristics, but the child can't achieve them on its own, without the help from the adult. Unlike these sources or the resilience, not giving love to the child no matter what and not letting the child grow up and be responsible for its own actions are the examples of the injunctions *Don't exist* and *Don't grow up*. At different ages, a child has different needs and different ways to perceive the world, but the sources of resilience are not changing (Grotberg, 1995) and they are based on who the child has, who that child is and what it can do.

Injunctions are the phenomenon that can be registered not only in early age, but also when the person who has encountered these kinds of messages in their early childhood, reaches adulthood. It is convenient to examine the resilience of young adults this way, not only when they're young and under the influence of their parents. On the other hand, this time period implies the possibility of existence of some variables that can additionally influence resilience, positively or negatively. Some characteristics that could be important in this case are self-criticism and self-reassuring.

Injunctions can be changed potentially for more positive outcomes, as a way to promote problem resolution and higher resilience towards the life challenges (Heath & Heath, 2010, as cited in Lankford, 2012).

Research Problem and Hypotheses

Some authors (Baldwin et al., 1993; Brooks, 1994; Wolff, 1995; Wright et al., 1997; Werner, 1996; Masten & Coatsworth, 1998; Stewart et al., 1997) have been asserting many favorable factors and adaptive mechanisms that are formed early in life and throughout life and that can enable and serve the development of resilience. This research is aiming to explain the connection between some of these concepts (injunctions, self-criticism, self-reassuring) and to illuminate the possibility of the prediction of resilience, based on injunctions, self-reassuring, and self-criticism.

It is hypothesized that the injunctions, self-reassuring, and self-criticism are significant predictors of resilience, where the injunctions and self-criticism will be significant predictors with a negative direction, while self-reassuring will be a significant predictor with a positive direction.

Method

Sample and Procedure

A total of 200 respondents participated in the study. The sample is convenient and consisted of students from different faculties in the Republic of Serbia, of age between 18 and 36 years ($M = 22.85$; $SD = 2.73$), both male (34%) and female (66%). The participants were born in big towns (31%), small towns (48.5%), but also in villages (20.5%) with most of them attending kindergarten when they were young (76.5%). Most of the participants are currently on their Undergraduate studies (69.5%) and Master studies (27.5%), and for the most participants both of their parents were employed during childhood (68%) or only father had a job (24%). Rarely was the case that mother had a job, while father didn't (5%), or that both parents were unemployed (3%). When it comes to participant's parents and their educational level, most of the fathers have finished High school (56%), Bachelor studies (27%) or Master studies (11.5%). The situation is similar when it comes to participant's mothers, where most of them also finished High school (54.5%), Bachelor studies (23%) and Master studies (16%).

Data collection was performed at the end of January 2021. The questionnaire was delivered using the Google Forms platform to the respondents online via social networks. The questionnaire consisted of 3 psychological instruments and a questionnaire of sociodemographic characteristics. The participation was on a volunteer basis and anonymous, without the time limit.

Variables and Instruments

Script injunctions Scale - SSZ (Gavrilov-Jerković, 2010), measuring script injunctions, has 71 items on five-point Likert-type scale. The questionnaire consists of 12 subscales, operationalized based on the suggestions and work of Goulding and Goulding (1978), which are: *Don't exist* (ban on existence), *Don't be you* (don't be your own gender), *Don't be a child*, *Don't grow up* (don't leave me), *Don't be successful*, *Don't* (don't do anything), *Don't be important*, *Don't belong*, *Don't be close*, *Don't be well* (don't be mentally healthy), *Don't think*, and *Don't feel*. The reliability of the whole questionnaire in this research proved to be satisfactory, with the following Cronbach's alpha coefficients: *Don't grow up* ($\alpha = .67$), *Don't be close* ($\alpha = .65$), *Don't feel* ($\alpha = .70$), *Don't be successful* ($\alpha = .73$), *Don't be important* and *Don't* ($\alpha = .72$), *Don't belong* ($\alpha = .78$), *Don't think* ($\alpha = .81$), *Don't exist* ($\alpha = .80$), while the three subscales proved to be less reliable and are: *Don't be well* ($\alpha = .43$), *Don't be a child* ($\alpha = .35$) and *Don't be you* ($\alpha = .36$), which is in accordance to some previous research also conducted on the student population from Serbia (Minčić et al., 2019).

Scale of self-criticism and self-reassuring (Forms of Self-Criticizing/Attacking & Self-Reassuring Scale; FSCRS, Gilbert et al., 2004). The scale was

developed to examine the ways in which people treat themselves when things go wrong, specifically their tendency to criticize themselves or to be encouraged when they perceive failure (Baião et al., 2015). Adaptation into Croatian language was made by Božić and Macuka (2018). The questionnaire consists of a total of 22 items arranged in 3 subscales. Two subscales refer to self-criticism: *inadequate self* ($\alpha = .88$), which focuses on feelings of personal inadequacy (9 items in total, for example: "I easily disappoint myself") and *unloved self* ($\alpha = .78$), which measures the desire to hurt or torture oneself (5 items in total, for example: "I become so angry at myself that I wish to hurt myself"). The third subscale refers to *self-reassuring* ($\alpha = .86$) – encouraging and supporting oneself in various life situations and events (a total of 8 items, for example: "It's easy to love myself"). Answers were given on a five-point scale (from 0 to 4) where 0 = *does not apply to me at all* and 4 = *completely applies to me*. The total score can be calculated based on the average of the corresponding items for individual subscales. Theoretical ranges of results on the three subscales range between zero and four, with a higher score indicating a higher level of self-criticism (in the subscale of inadequate and unloved self), while in the subscale of self-reassuring a higher score indicates a higher degree of encouragement and self-support.

The Connor-Davidson Resilience Scale (Connor & Davidson, 2003) – adaptation of this scale was made by Milovanović (2018). The scale contains 25 items and measures the ability to overcome stress and adverse situations. The participants give the answers by using a Likert's five-point scale, from 0 = *not true at all* to 4 = *almost completely true*. The sum of the points for each statement gives a total score ranging from 0 to 100, with a higher score indicating a higher level of resilience. The reliability of the scale proved to be very satisfactory in this sample of Serbian students ($\alpha = .91$).

The socio-demographic questionnaire we used to gather data about gender, age, place of residence, faculties studying, degree, years of study, mother's education, father's education.

Results

The descriptive statistics of the used variables in this research is shown in Table 1 below, and the correlation between them is shown in Table 2 (you can find it in the appendix of this paper).

Table 1. Descriptive statistics for injunctions, self-reassuring, self-criticism and resilience

Variables	Min.	Max.	M	SD	Skewness	Kurtosis
Inadequate self	0.00	4.00	1.930	0.914	-0.034	-0.920
Unloved self	0.00	4.00	0.709	0.796	1.342	1.400
Self-reassuring	1.00	4.00	2.985	0.689	-0.501	-0.353
Resilience	100.00	2500.00	1783.750	388.656	-0.842	1.646
Don't exist	10.00	36.00	14.190	5.218	2.092	4.853
Don't be a child	2.00	8.00	2.965	1.404	1.469	1.451
Don't be you	3.00	11.00	5.725	2.342	0.613	-0.663
Don't grow up	6.00	28.00	13.685	4.875	0.417	-0.169
Don't be successful	6.00	24.00	11.220	4.358	0.669	-0.337
Don't	6.00	30.00	16.345	5.439	0.426	-0.513
Don't be important	6.00	23.00	9.170	3.814	1.316	1.282
Don't belong	8.00	31.00	15.570	5.935	0.663	-0.464
Don't be close	5.00	20.00	9.750	4.063	0.591	-0.613
Don't be well	3.00	13.00	5.055	2.253	1.262	1.517
Don't think	8.00	35.00	16.060	6.190	0.846	0.204
Don't feel	8.00	33.00	16.525	5.605	0.620	-0.163

The hierarchical regression analysis has been used in order to test hypotheses of this research concerning a possible prediction of resilience based on injunctions, self-reassuring and self-criticism.

Table 3. Predictive model of resilience

Step	Predictor	β	P	Model
1	Don't exist	-.150	.145	$R=.53, R^2_{(adj)}=.24, F_{(12,187)}=5.16, p=.000$
	Don't be a child	-.140	.067	
	Don't be you	.090	.274	
	Don't grow up	-.147	.080	
	Don't be successful	-.284	.007	
	Don't	.122	.137	
	Don't be important	-.095	.440	
	Don't belong	.011	.920	
	Don't be close	.016	.885	
	Don't be well	.151	.069	
	Don't think	-.222	.034	
	Don't feel	.134	.196	

	Don't exist	.007	.939	
	Don't be a child	-.005	.937	
	Don't be you	.107	.108	
	Don't grow up	-.126	.062	
	Don't be successful	-.141	.109	
	Don't	.057	.397	
	Don't be important	-.003	.978	
2	Don't belong	-.101	.254	$R=.74, R^2_{(adj)}=.51, F_{(15,184)}=12.79, p=.000;$ $F_{Change(3,184)}=35.83, p=.000$
	Don't be close	.090	.315	
	Don't be well	.035	.603	
	Don't think	-.206	.015	
	Don't feel	.205	.015	
	Inadequate Self	-.029	.723	
	Unloved (hated) Self	.015	.859	
	Self-reassuring	.641	.000	

Note. ΔR^2 = R square change

Predictor set in the first step consisted of 12 injunctions, leaving variables Self-reassuring, Inadequate Self, and Unloved (Hated) Self to be included in the second step. The first model has shown to be statistically significant and it explains 24.3% of the variance of resilience. Statistically significant predictors in this step are injunctions: Don't be successful, and Don't think – all three of negative directions as previously hypothesized. The second model is also statistically significant, and it explains 51.5% of the variance of resilience. Don't think, Don't feel, and Self-reassuring proved to be significant predictors in this step. While it was expected that Self-reassuring predicts resilience positively, the same was not expected for one of the injunctions – Don't feel.

Discussion

This study examined the connection between injunctions, self-criticism, self-reassuring, and resilience, and the possibility of the prediction of resilience based on the concepts of injunctions, self-criticism, and self-reassuring. Although not all hypotheses have been confirmed, the obtained results indicate the expected correlation and some assumed predictions.

Injunctions Don't think, as well as Don't be successful (in the second model), showed a negative association with resilience, which partially confirms one of the specific hypotheses. When looking at correlations, all script injunctions were shown to be negatively associated with resilience, which is in line with expectations. *Don't think* is a statistically significant negative predictor, and it

remained as such in both steps. In situations which are perceived as difficult and like they surpass individual's capacities, an adult who received the injunction "Don't think" will tend to refuse to complete the assignment stating perfectionism, laziness, poor organizational skills, problems concentrating or not investing themselves enough (Čolović et al, 2009; as cited in Minčić et al., 2019). Behavior like this is in contrast to the one of a resilient person, in the context of resilience as a trait (Manzano-García & Ayala Calvo, 2013; as cited in Milovanović, 2018), who accepts reality and adapts to significant changes no matter the difficulty of the task. The negative association between this injunction and resilience is in line with the assumptions, given that resilience is a coping strategy opposite to the psychopathological manifestations in difficult conditions and problematic situations and the manifestation of positive adaptive skills despite significant traumatic adversity and the ability to overcome stress (Luthar et al., 2000; as cited in Milovanović, 2018). *Don't be successful* stands out as a statistically significant predictor in the model before the introduction of measures of self-criticism and self-reassuring, and after their inclusion in the model the effect is lost. In the second model, it is a predictor of low intensity, in the negative direction. A potential reason for this may be due to the possibility that by inserting self-criticism into the model, the individual predictive contribution of the injunction is diminished due to similarities in these two concepts (self-criticism reminds us of messages such as "don't be successful", for example: "you will never succeed", "everything you do is bad and has no value", "you are worthless" and the like). *Don't Feel*, became statistically significant in the second step, after the introduction of variables that measure self-criticism and self-reassuring in the regression model, which could imply mediation or moderation. This injunction stood out as a statistically significant predictor of a positive direction and of low intensity, which is not in line with assumptions, but through the analysis of the injunction itself, this result is not surprising because it can relate to a person's identity and self-perception as a resilient and capable person, based on the fact that the person does not show weakness and is in control over their emotions, which is a notion found in stoicism. People with this injunction most often had parents who concealed their own feelings, and then conveyed such messages to their children forbidding them to show any feelings or any specific feelings (e.g., fear). Such people have learned not to show weaknesses or not to perceive it as part of their identity at all, so they tend to act and present themselves as more capable and resilient people.

Aside from injunctions, *Self-reassuring* proved to be a statistically significant predictor of resilience in a positive direction and of medium intensity. This characteristic is considered a protective factor and refers to the ability to remind oneself of positive things and previous successes, the ability to tolerate one's own disappointment and feelings of vulnerability, as well as to adapt well in difficult life situations (Božić & Matsuka, 2018). This result is in line with

previous research (e.g. Gilbert et al., 2004; as cited in Halamová, J. et al., 2018), because resilience refers to positive adaptation in situations that threaten or in some way attack our functioning. A person who is more self-encouraging and who in his dealing with negative and frustrating situations reminds himself of positive things and tolerates potential disappointment, will also have more pronounced resilience as a characteristic.

As for *self-criticism*, it proved to be negatively related to resilience, which is in line with expectations, but no aspect of it (Inadequate Self and Unloved (Hated) Self) stood out as a statistically significant predictor. This result was probably obtained due to the similarity of these concepts with some injunctions and messages sent through these injunctions. In order to obtain more certain conclusions and exclude self-criticism as a potential predictor of resilience, it is necessary to examine the mutual influences and relationships of all variables in the predictor complex. Multicollinearity needs to be examined.

In order to improve the insight into the results, it is necessary to examine in more detail the relationships among the predictor variables and, in accordance with that examination, to exclude certain variables or add them to the predictor model in future research. It is also necessary to examine the mediator and moderator effect of individual variables on the overall model, specifically regarding injunction *Don't Feel* and *self-reassuring*, as well as self-criticism concepts and injunction *Don't be successful*.

The obtained results can be used in educating parents, in order to create the most favorable conditions for the development of resilience in their children, using knowledge of how certain messages sent to children in early childhood (in this study - injunctions) favorably or adversely affect resilience. They can also be used in individual psychotherapy, in order to improve the adaptation of the individual through the elucidation of early experiences and how they are related to functioning later in life. One can work on reducing the negative effects of existing injunctions and on taking initiative and an active position in one's life.

This research gives us insight into some of the connections between early formed concepts, the ability to self-encourage and self-reassure that we use through life, and resilience, which helps us to better adapt to living conditions and successfully cope with difficulties and challenges. In this way, the importance of some concepts in the prediction of resilience and favorable and unfavorable conditions for its development is emphasized.

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Appendix

Table 2. Correlation between injunctions, self-reassuring, self-criticism and resilience

	IS	US	SR
I2	.525**	.475**	-.445**
I11	.567**	.479**	-.422**
I10	.347**	.342**	-.240**
I9	.506**	.509**	-.423**
I8	.486**	.440**	-.365**
I7	.573**	.580**	-.480**
I6	.405**	.189**	-.187**
I5	.612**	.501**	-.466**
I4	.335**	.272**	-.267**
I3	.456**	.392**	-.331**
I2	.436**	.367**	-.407**
I1	.499**	.639**	-.486**
R	-.455**	-.463**	.688**
SR	-.593**	-.653**	
US	.678**		
IS			

R	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10	I11	I12
-.271**	.661**	.487**	.543**	.431**	.605**	.452**	.657**	.692**	.639**	.544**	.646**	
-.412**	.560**	.431**	.514**	.475**	.713**	.526**	.633**	.592**	.668**	.486**		
-.178*	.555**	.342**	.353**	.349**	.500**	.325**	.589**	.576**	.560**			
-.301**	.611**	.468**	.485**	.350**	.583**	.451**	.745**	.750**				
-.287**	.628**	.495**	.531**	.393**	.584**	.404**	.710**					
-.338**	.726**	.504**	.587**	.327**	.632**	.459**						
-.153*	.275**	.248**	.448**	.456**	.465**							
-.462**	.564**	.405**	.472**	.606**								
-.333**	.378**	.177*	.321**									
-.187**	.501**	.316**										
-.289**	.348**											
-.341**												

Note. IS=Inadequate self, US=Unloved self, SR=Self-reassuring, R=Resilience, I1=Don't exist, I2=Don't be a child, I3=Don't be you, I4=Don't grow up, I5=Don't be successful, I6=Don't, I7=Don't be important, I8=Don't belong, I9=Don't be close, I10=Don't be well, I11=Don't think, I12=Don't feel, *=significance at level .05, **=significance at level 0.01

TIME PERSPECTIVES AS PREDICTORS OF FEAR OF DEATH IN CONSUMERS OF PSYCHOACTIVE SUBSTANCES

Abstract

The aim of this research is to examine the role of time perspectives in predicting fear of death in a sample of consumers of psychoactive substances and to explore differences between groups (gender, preferred substance, frequency of consumption) and age regarding the different aspects of fear of death. The data were collected using the Zimbardo Time Perspective Inventory (ZTPI) and Multidimensional Fear of Death Scale (MFODS) on a sample of 65 participants, male (50.8%) and female (49.2%) aged 20-42 years ($M = 26.49$, $SD = 4.34$). The first model ($R^2 = .35$, $F(7,58) = 4.525$, $p = .000$) explains 35.3% of the variance of fear of the dying process, with Gender ($\beta = .314$, $p = .009$) Past-Negative ($\beta = .250$, $p = .038$) and Future ($\beta = .325$, $p = .007$) time perspective as significant predictors. The second model ($R^2 = .22$, $F(7,58) = 2.428$, $p = .030$) explains 22.7% of the variance of fear of the dead, with Gender ($\beta = .300$, $p = .022$) as a significant predictor. The third model ($R^2 = .38$, $F(7,58) = 5.188$, $p = .046$) explains 38.5% of the variance of fear for significant others, with Gender ($\beta = .385$, $p = .001$), Past-negative ($\beta = .319$, $p = .007$) and Past-positive ($\beta = .296$, $p = .015$) time perspectives as significant predictors. The fourth model ($R^2 = .32$, $F(7,58) = 4.011$, $p = .001$) is statistically significant and explains 32.6% of the variance of fear of conscious death with the Future ($\beta = .442$, $p = .000$) time perspective as a significant predictor. The fifth model ($R^2 = .24$, $F(7,58) = 2.733$, $p = .016$) explains 24.8% of the variance of fear for the body after death, with Past-Negative ($\beta = .293$, $p = .024$) perspective as a significant predictor. The sixth model ($R^2 = .42$, $F(7,58) = 6.215$, $p = .000$) explains 42.9% of the variance of fear of premature death, with Past-Negative ($\beta = .379$, $p = .001$) time perspective as a significant predictor. There are gender differences regarding the results in every aspect of fear of death, except for fear of the unknown, fear of conscious death, and fear for the body after death. There is a significant correlation between age and fear for significant others ($p < .05$, $r = -.281$). There are no significant differences between groups that prefer different substances and groups with a different frequency of consumption. To conclude, different aspects of fear of death can be predicted by time perspectives on this specific sample and there are significant differences between male and female participants regarding the fear of death.

Keywords: time perspectives, fear of death, consumers of psychoactive substances.

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Introduction

This research examined the possibility of predicting fear of death, based on time perspectives on a sample of consumers of psychoactive substances. The concept of time perspectives is shown to be a basic, fundamental process that is learned at an early age and is influenced by culture, religion, education, social class, and family (Zaleski, 1994, as cited in Zimbardo & Boyd, 1999). On the other hand, some authors suggested that the fear of death is always present in our mental functioning (self-preservation purpose), but properly repressed since if it was constantly conscious, people should be unable to function normally (Zilboorg, 1943). The association of fear of death with substance use is not entirely certain but it was detected as present, and it was concluded that religious orientation influenced high-risk behavior indirectly, through fear of death (Ghazaei et al., 2020). Also, time perspectives have shown to be important individual difference variables that should be included in attempts to understand psychoactive substance consumption and to understand the dynamics of substance use (Zimbardo & Boyd, 1999).

Time Perspectives

Starting from Einstein's theory of relativity (Einstein, 1931, as cited in Zimbardo & Boyd, 1999) that suggests a subjective nature of a physical phenomenon such as time, perception of it stopped being as objective and exact as it was before. For two observers in different states of motion, the timeline is different and relative regarding observers, but none of the timelines can be perceived as a natural or true, universal timeline (Gödel, 1990, as cited in Wang, 1995). Perception of time started being considered to be crucial for the evolution of human cognition (Suddendorf & Corballis, 1997). Philosophical and psychological discussions of time that we can see through the work of Heidegger and Husserl (Heidegger, 1927, as cited in Zimbardo & Boyd, 1999; Husserl, 1964, as cited in Zimbardo & Boyd, 1999) made it obvious that time itself and the perception of it is an important issue in psychology. One of the first founders of the concept "time perception" was William James and he suggested that the knowledge about some part of time flow, past, and future, is always intertwined with our knowledge of the present moment (James, 1890).

This concept has changed in behaviorism, which focused on the consequences of our behavior but then went back to more philosophical consideration through the work of Kurt Lewin (Lewin, 1942). Lewin pointed out the influence of past and present on current behavior, but also that the time perspectives refer to individual perception of our psychological future and present (Lewin, 1942). This view was supported by Joseph Nuttin, who also stated that it is not preferable to be focused only on the future and that past also has great importance (Nuttin, 1985).

Time perception has a role in choosing and striving toward certain social goals and it significantly affects emotions, cognition, and motivation (Cartensen et

al., 1999). Therefore, it affects general judgment, decisions, and actions because they are dragged through the prism of a certain time perspective (e.g., through negative/positive events in the past which constantly affect the present or through fantasizing about the future). These tendencies become biases towards the past, the present, or the future and they can become dispositions and characterize persons as individual difference variables. People use time perspectives in different degrees and they don't always use just one, they use all but every person has a dominant time perspective which he uses most of the time and drags events and world views through it (Zimbardo & Boyd, 1999).

Time perspective is defined as a relatively stable individual trait, which is influenced by many cultural, educational, religious, class, and family factors and people are often not aware of its existence (Zimbardo & Boyd, 1999). In western societies, orientation toward the future is linked to many positive consequences, such as higher socioeconomic status, higher academic achievement, less sensation seeking, and less risky health behaviors. On the contrary, there are people with a dominant present orientation. These people function with present orientation in the society which is predominantly oriented towards the future and are therefore considered riskier because of the negative life consequences (such as problems with mental health, juvenile delinquency, criminal, and addictions) (DeVolder & Lens, 1982; Levine, 1998; Nuttin, 1985; Strathman et al., 1994; Zaleski, 1994 as cited in Zimbardo & Boyd, 1999).

According to Zimbardo and Boyd (1999) time perspectives are usually explained with the following scales:

- Present-Hedonistic – it refers to hedonistic attitudes towards the time and life, risk-taking, orientation towards the present satisfaction, and little care about the consequences in the future. Common correlates of this dimension are novelty seeking, sensation-seeking, and low impulse control;
- Present-Fatalistic – it refers to the fatalistic, helpless, and hopeless attitude toward the future and life, it represents the belief that the future is predestined, uninfluenced by our actions, and that everything is under the mercy of fate. This time perspective often correlates with depression, external locus of control, and low consideration for future consequences;
- Future – it refers to the general orientation towards the future when the behavior is determined by striving towards future goals and rewards. Common correlates for this time perspective are conscientiousness and consideration for future consequences;
- Past-Positive – it reflects a warm, sentimental attitude toward the past. Its common correlates are friendliness, high self-esteem, and low anxiety.
- Past-Negative – it suggests trauma, pain, and regret, and a generally negative and aversive view of the past; because of the reconstructive

nature of the past, these negative attitudes can exist because of the actual unpleasant experiences and traumatic events, because of the negative reconstruction of benign events or because of the combination of both. This time perspective often correlates with depression, aggression, low self-esteem, low emotional stability, and trait anxiety.

Fear of Death

People often think about death, mostly because it's an inevitable event in everyone's life, but also because no one can predict how, when, and where will their life end. That uncertainty and insecurity suggest that some level of anxiety related to death is expected and normal as a response to that (Mooney & O'Gorman, 2001). Some authors suggested the definition of fear of death as normal and similar to other fears that people experience in everyday life and that are learned through socialization (Kastenbaum & Aisenberg, 1972, as cited in Power & Smith, 2008). Even though the fear of death is more often and intensively experienced in specific life situations, such as life-threatening situations (Bivens et al., 1995) and among people with higher levels of clinical anxiety (Lester, 1990), it is also an integral part of life for most people, which enables its studying in a non-clinical population. Also, the thesis about learning the fear of death through social learning (e.g., being exposed to death since childhood, attending funerals, listening to stories about the deceased, etc.) suggests that, like anything else learned, it is subjected to modification and change.

Even though this phenomenon is present in our consciousness and familiar in clinical practice, researches that tried to operationalize this problem were rare and appeared in the second half of the 20th century. At first, fear of death was equated and mixed with anxiety related to death. Hoelter was one of the first researchers to construct a scale that measures fear of death and defines it as an emotional reaction that involves subjective feelings of inconvenience and worry related to thinking and anticipation of different aspects related to death (Hoelter, 1979). This is a multidimensional scale (8 subscales) and each aspect is related to a different aspect of fear of death. It includes the following scales: fear of the dying process (including painful and violent death), fear of the dead (including avoiding human and animal remains), fear of being destroyed (including dissection and cremation of the body), fear for significant others (including understanding the influence of own death on significant other and the influence of the death of significant other on ourselves), fear of the unknown (including the fear of non-existence), fear of conscious death (including the fear to be falsely pronounced dead by mistake), fear for the body after death (including worrying about decay and body isolation) and fear of premature death (including worrying that the death will prevent us in achieving significant life goals or important experiences; Hoelter, 1979).

Some previous research showed that women are usually more afraid of death than men on general factor and all subscales, except for fear of conscious death

and fear of premature death (Neimeyer et al., 2004). The age difference was also found, so the older participants (50–79 years old) demonstrated less fear of death than middle-aged (30–49 years old) and younger participants (10–29 years old; Feifel & Branscomb, 1973). Retrospective reports of changes in death anxiety over the years in the “risk-taking” population of men (drug users, alcoholics, deputy sheriffs, etc.), show that 46% of participants reported a decrease in death fear, 40% of the participants reported no change and 16% reported an increase in death fear (Feifel & Nagy, 1980). Although, the multidimensional nature of fear of death suggests that the age differences could vary regarding the different aspects of fear of death, and some research shows that younger participants feared things like bodily decomposition, helplessness, isolation, and pain, while older participants had greater concerns about the existence of an afterlife and loss of control (Thorson & Powell, 1989).

The Rationale for the Study

The prevalence of psychoactive substances is constantly increasing in developing countries and the use of psychoactive substances, especially cannabis, has considerably increased. Time perspective has been shown as a dispositional construct underlying substance use behaviors and it is often perceived as playing an important role and was revealed as predictive of psychoactive substance consumption (Keough et al., 1999; Levy & Earleywine, 2004; Wills et al., 2001). Some previous research has shown that the present-hedonistic time perspective is a significant predictor of consuming psychoactive substances and that men have the tendency to have higher scores on this time perspective, unlike women, who have higher scores on the future time perspective (Keough et al., 1999). This linkage was found to be indirect, mediated through behavioral coping and anger coping and one of the proximal factors was negative affect (Willset et al., 2001).

Other research has shown the linkage between drug addiction and anxiety, feeling of guilt, loneliness, and fear of death (Viney et al., 1985). Also, some research shows that the presence of an anxiety disorder is a risk factor for substance use disorder and vice versa, which implies their co-occurrence and comorbidity and is shown in both epidemiological and clinical samples (Kushner et al., 2008). Although precaution is advised while discussing and using these results, as in this research participants weren't officially diagnosed with substance abuse, they were never treated or defined as drug addicts and they're rather defined as occasional enjoyers of certain substances.

When it comes to the type of substance in terms of fear of death, it was often discussed that some specific substances, like psychedelics, could reduce death anxiety. Some authors suggested that psychedelics provide an opportunity to confront fears of death, including the central role of ego dissolution (Moreton et al., 2019). This living, psychedelic experience of death transcends traditional therapeutic methods and mimics near-death experiences, which have been found

to provoke attitude changes and decrease fear of death (Noyes, 1980, 1983). It was also hypothesized that psychedelic-induced religious experiences can buffer against distress related to death anxiety, which can underline many different mental illnesses (Moreton et al., 2019).

This research aimed to examine the role of time perspectives in predicting fear of death in a sample of consumers of psychoactive substances and to explore differences between groups (gender, preferred substance, frequency of consumption) regarding the different aspects of fear of death.

Sample and Procedure

The sample consisted of 65 participants, 50.8% of whom were male ($N = 33$) and 49.2% female ($N = 32$), aged 20–42 years ($M = 26.49$, $SD = 4.34$). When it comes to the psychoactive substance of choice, most participants reported using marijuana the most (47.0%), followed by hallucinogens (31.8%), stimulants (13.6%), and anxiolytics (4.5%). One participant chose the option “other” (1.5%) and one participant refused to declare (1.5%). Participants also responded to the question about how frequent did they use the psychoactive substance of choice throughout their life and 10.6% of the sample chose the option “1-10 times”, 7.6% of the sample chose “10-20 times” and 80.3% of the sample chose “more than 20 times”. One person refused to declare (1.5%).

The participants were gathered using a snowball sampling method and they filled out an online survey consisting of certain questionnaires and open-ended questions. Participants weren't diagnosed with substance abuse and have never been treated for substance abuse, but they have more or less experimented with different substances throughout their lives.

Variables and Instruments

Zimbardo Time Perspective Inventory (ZTPI; Zimbardo & Boyd, 1999) was used to measure the different time perspectives. This Likert type 5-point scale consists of 52 items organized into 5 subscales, representing the operationalization of time perspectives that Zimbardo and Boyd (1999) suggested, which are: Present-hedonistic ($\alpha = 0.72$), Present-fatalistic ($\alpha = 0.77$), Future ($\alpha = 0.72$), Past-positive ($\alpha = 0.69$) and Past-negative ($\alpha = 0.74$). Shown reliability indicators are from this research.

Multidimensional Fear of Death Scale (MFODS; Hoelter, 1979) was used to measure the expression of different aspects of fear of death. It is a 42-item inventory, where participants answered on a 5-point Likert scale. The items are organized into 8 subscales, representing the operationalization of fear of death that Hoelter (1979) suggested and their Cronbach-alpha reliability of the subscales in this research was satisfying: 0.74 (Fear of the dead), 0.80 (Fear of premature death), 0.83 (Fear of the dying process), 0.78 (Fear of being destroyed), 0.76 (Fear for significant others), 0.70 (Fear of the unknown), 0.67 (Fear of conscious death) and 0.79 (Fear for the body after death).

Other registered variables were the following: Gender, Age, Preferred substance or the type of substances that they mostly prefer when it comes to consumption, defined by the following categories of substances: marijuana, hallucinogens, stimulants, anxiolytics, and other (there was an option to add something else). There was also an option not to answer this question. Opiates were excluded from this categorization as they cause serious addiction in consumers very quickly. The last registered variable was the Frequency of consumption of the psychoactive substance of choice. The question was how many times did they use the preferred substance and categories of answers included 1-10 times, 10-20 times, and more than 20 times.

Hypotheses

It is assumed that each aspect of fear of death (fear of the dead, fear of premature death, fear of the dying process, fear of being destroyed, fear for significant others, fear of the unknown, fear of conscious death, and fear for the body after death) can be predicted based on a model which contains time perspectives and frequency of consumption of psychoactive substances.

It is assumed that there will be a statistically significant difference in the measures of the fear of death across the gender of the participants, the preferred substance that participants chose, and the frequency of consumption of psychoactive substances. It is also assumed that there will be a statistically significant correlation between age and the fear of death.

Results

For all the variables used in this research, average values, standard deviations, skewness, and kurtosis are shown in Table 1.

Table 1. *Descriptive statistics for time perspectives and fear of death*

Research variables	<i>M</i>	<i>SD</i>	<i>Skewness</i>	<i>Kurtosis</i>
Past-negative	3.633	0.509	0.007	0.047
Past-positive	2.439	0.820	0.723	0.606
Present-hedonistic	3.311	0.709	0.006	-0.370
Present-fatalistic	2.886	0.675	0.322	-0.379
Future	3.125	0.596	-0.219	-0.271
Fear of the dying process	3.106	1.148	-0.106	-0.968
Fear of the dead	2.659	0.901	0.268	-0.263
Fear of being destroyed	2.432	1.160	0.599	-0.478
Fear for significant others	4.260	0.643	-0.629	-0.562
Fear of the unknown	2.351	0.816	0.730	0.229
Fear of conscious death	2.506	0.947	0.224	-0.904
Fear for the body after death	1.679	0.807	1.829	3.968
Fear of premature death	2.989	1.189	-0.098	-1.068

Table 2. Correlation between time perspectives, fear of death, and frequency of consumption

	FC	FPD	FBAD	FCD	FU	FCO	FBD	FD	FDP	F	PF	PH	PP	PN
PN	-0.079	.461**	.365**	0.166	.308*	.328**	0.045	.326**	.330**	0.045	.260*	-0.056	-0.067	
PP	0.029	.280*	0.193	.262*	0.21	.250*	0.047	0.087	0.207	-0.086	.409**	.317**		
PH	0.026	0.147	0.183	0.027	0.028	0.044	0.232	0.029	-0.032	-0.416**	.462**			
PF	0.139	.415**	.349**	0.23	0.215	0.026	0.218	0.149	0.169	-0.216				
F	0.069	0.148	0.014	.358**	0.154	0.033	-0.16	0.102	.316**					
FDP	0.167	.569**	.375**	.454**	.542**	.514**	-.266*	.609**						
FD	0.145	.486**	.393**	.355**	.517**	.514**	-0.077							
FBD	-0.035	0.033	0.196	-0.069	0.024	-.306*								
FSO	0.118	.449**	0.224	.251*	.360**									
FU	-0.031	.407**	.544**	.511**										
FCD	-0.004	.271*	.528**											
FBAD	-0.164	.321**												
FPD	0.14													
FC														

Note. PN=Past-Negative, PP=Past-Positive, PH=Present-Hedonistic, PF=Present-Fatalistic, F=Future, FDP=Fear of the dying process, FD=Fear of the dead, FBD=Fear of being destroyed, FSO=Fear for significant others, FU=Fear of the unknown, FCD=Fear of conscious death, FBAD=Fear for the body after death, FPD=Fear of premature death, FC=Frequency of consummation, * = correlation is significant at the 0.05 level, ** =correlation is significant at the 0.01 level

The time perspective that showed significant correlations with most of the aspects of fear of death is past-negative and it correlated positively with fear of premature death, fear for the body after death, fear of the unknown, fear for significant others, fear of the dead and fear of the dying process (respectively: $r = .461; .365; .308; .328; .326; .330$). Past-positive time perspective correlated positively with fear of premature death, fear of conscious death, and fear for significant others (respectively: $r = .280; .262; .250$). Present-fatalistic perspective correlated positively with fear of premature death and fear for the body after death (respectively: $r = .415; .349$), while the future time perspective correlated positively with fear of conscious death and fear of the dying process (respectively: $r = .358; .316$). Present hedonistic time perspective didn't correlate significantly with any of the aspects of fear of death.

Hierarchical regression analysis was used to test the hypotheses of this research, a possible prediction of fear of death based on a person's time perspectives. In the first block, the predictors are gender and age, while time perspectives are included in the second block for every criterion.

Table 3. A predictive model of fear of the dying process

Block	Predictor	B	p	Model Summary
I	Gender	.419	.001	$R=.40, R^2=.16, R^2(adj) =.13,$
	Age	.044	.723	$F(2,63)=6.200, p = .003$

	Gender	.314	.009	
	Age	.042	.719	
	Past-negative	.250	.038	
	Past-positive	.184	.133	
2	Present-hedonistic	.046	.731	$R=.59, R^2=.35, R^2(adj)=.27,$
	Present-fatalistic	.057	.675	$F(7,58) = 4.525, p = .000, F_{change}$
	Future	.325	.007	$(5,58)=3.385, p = .009$

The first model ($F(2,63) = 6.200, p = .003$) explains 16.4% of the variance of fear of the dying process, with Gender ($\beta = .419, p = .001$) as a significant predictor. The model contribution is also statistically significant and the second model ($F(7,58) = 4.525, p = .000$) explains 35.3% of the variance of fear of the dying process, with Gender ($\beta = .314, p = .009$), *Past-Negative* ($\beta = .250, p = .038$) and Future ($\beta = .325, p = .007$) as significant predictors.

Table 4. Model of fear of the dead

Block	Predictor	β	p	Model Summary
1	Gender	.364	.005	$R=.39, R^2=.15, R^2(adj) = .12,$
	Age	-.063	.615	$F(2,63) = 5.692, p = .005$
2	Gender	.300	.022	
	Age	-.050	.695	$R=.47, R^2=.22, R^2(adj)=.13,$
	Past-negative	.239	.067	$F(7,58)=2.428, p = .030, F_{change}$
	Past-positive	.039	.771	$(5,58)=1.104, p = .369$
	Present-hedonistic	.059	.683	
	Present-fatalistic	.045	.762	
	Future	.109	.400	

The first model ($F(2,63) = 5.692, p = .005$) explains 15.3% of the variance of fear of the dead, with Gender ($\beta = .364, p = .005$) as a significant predictor. The model contribution is not statistically significant, but the whole second model is ($F(7,58) = 2.428, p = .030$) and explains 22.7% of the variance of fear of the dead, with again only Gender ($\beta = .300, p = .022$) as a significant predictor.

Table 5. Model of fear for significant others

Block	Predictor	β	p	Model Summary
1	Gender	.452	.000	$R=.50, R^2=.25, R^2(adj) = .23,$
	Age	-.118	.316	$F(2,63) = 10.870, p = .000$

	Gender	.385	.001	
	Age	-.066	.558	
	Past-negative	.319	.007	
2	Past-positive	.296	.015	$R=.62, R^2=.38, R^2(adj)=.31,$
	Present-hedonistic	.087	.501	$F(7,58)=5.188, p=.000, F_{change}$
	Present-fatalistic	-.245	.068	$(5,58)=2.424, p=.046$
	Future	.002	.990	

The first model ($F(2,63) = 10.870, p = .000$) explains 25.7% of the variance of fear for significant others, with Gender ($\beta = .452, p = .000$) as a significant predictor. The model contribution is statistically significant and the second model ($F(7,58) = 5.188, p = .000$) explains 38.5% of the variance of fear for significant others, with Gender ($\beta = .385, p = .001$), *Past-negative* ($\beta = .319, p = .007$) and *Past-positive* ($\beta = .296, p = .015$) as significant predictors.

Table 6. Model of fear of conscious death

Block	Predictor	β	p	Model Summary
1	Gender	.168	.199	$R = .27, R^2 = .07, R^2(adj) = .04,$ $F(2,63) = 2.617, p = .081$
	Age	-.167	.202	
	Gender	.077	.520	$R = .57, R^2 = .32, R^2(adj) = .24,$ $F(7,58) = 4.011, p = .001, F_{change} (5,58) =$ $4.295, p = .002$
	Age	-.196	.101	
Past-negative	.063	.603		
Past-positive	.179	.152		
2	Present-hedonistic	.048	.725	
	Present-fatalistic	.204	.144	
	Future	.442	.000	

The first model ($F(2,63) = 2.617, p = .081$) is not statistically significant, but the model contribution and the second model ($F(7,58) = 4.011, p = .001$) are statistically significant and the second model explains 32.6% of the variance of fear of conscious death. *Future time perspective* ($\beta = .442, p = .000$) is a statistically significant predictor of fear of conscious death.

Table 7. Model of fear for the body after death

Block	Predictor	β	p	Model Summary
1	Gender	.230	.084	$R = .23, R^2 = .05, R^2(adj) = .02,$ $F(2,63) = 1.874, p = .162$
	Age	-.017	.895	
2	Gender	.148	.244	$R = .49, R^2 = .24, R^2(adj) = .15,$ $F(7,58) = 2.733, p = .016, F_{change} (5,58) =$ $2.959, p = .019$
	Age	.012	.924	
	Past-negative	.293	.024	
	Past-positive	.089	.496	
	Present-hedonistic	.127	.374	
	Present-fatalistic	.187	.205	
	Future	.090	.480	

The first model ($F(2,63) = 1.874, p = .162$) is not statistically significant but again, the model contribution and the second model ($F(7,58) = 2.733, p = .016$) are statistically significant and the second model explains 24.8% of the variance of fear for the body after death. Past-negative time perspective ($\beta = .293, p = .024$) is a statistically significant predictor of fear for the body after death.

Table 8. *A predictive model of fear of premature death*

Block	Predictor	β	p	Model Summary
1	Gender	.336	.011	$R = .31, R^2 = .10, R^2(adj) = .07,$ $F(2,63) = 3.483, p = .037$
	Age	.087	.499	
	Gender	.210	.061	
	Age	.112	.304	
2	Past-negative	.379	.001	$R = .65, R^2 = .42, R^2(adj) = .36,$ $F(7,58) = 6.215, p = .000, F_{change}(5,58) =$ $6.679, p = .000$
	Past-positive	.185	.109	
	Present-hedonistic	.113	.366	
	Present-fatalistic	.224	.083	
	Future	.218	.052	

The first model ($F(2,63) = 3.483, p = .037$) is statistically significant and explains 10.0% of the variance of fear of premature death, with Gender ($\beta = .336, p = .011$) as a statistically significant predictor. The model contribution and the second model ($F(7,58) = 6.215, p = .000$) are statistically significant and it explains 42.9% of the variance of fear of premature death, with Past-negative ($\beta = .379, p = .001$) as a statistically significant predictor, while Gender is no longer statistically significant.

Table 9. *Gender differences in different aspects of fear of death*

Fear of death	t	p	Mean difference
Fear of the dying process	-3.527	.001	-0.919
Fear of the dead	-3.355	.001	-0.691
Fear of being destroyed	2.066	.043	0.576
Fear for significant others	-4.551	.000	-0.631
Fear of the unknown	-1.908	.061	-0.376
Fear of conscious death	-1.881	.065	-0.430
Fear for the body after death	-1.947	.056	-0.379
Fear of premature death	-2.561	.013	-0.720

There are some statistically significant gender differences ($p < .05$). Women tend to express greater fear of the dying process, fear of the dead, fear for significant others, and fear of premature death than men, while men tend to express greater fear of being destroyed than women. There are no significant gender differences when it comes to expressing fear of the unknown, fear of conscious death, and fear for the body after death ($p > .05$).

There are no significant correlations between age and different aspects of fear of death, except for the correlation between fear for significant others and age ($p < .05$, $r = -.281$).

Table 10. ANOVA results between groups that preferred different psychoactive substances

Research variables	Mean square	<i>F</i>	<i>p</i>
Fear of the dying process	1.794	1.406	.250
Fear of the dead	0.171	0.203	.894
Fear of being destroyed	1.051	0.783	.508
Fear for significant others	0.422	0.996	.401
Fear of the unknown	0.464	0.666	.576
Fear of conscious death	0.110	0.114	.952
Fear for the body after death	0.479	0.710	.550
Fear of premature death	0.627	0.414	.737

There are no significant differences between groups that prefer different substances (marijuana, hallucinogens, stimulants, and anxiolytics) regarding different aspects of fear of death.

Table 11. ANOVA results between groups with a different frequency of consumption

Research variables	Mean square	<i>F</i>	<i>p</i>
Fear of the dying process	1.044	0.797	.455
Fear of the dead	1.423	1.804	.173
Fear of being destroyed	0.113	0.082	.922
Fear for significant others	0.437	1.034	.362
Fear of the unknown	0.662	0.964	.387
Fear of conscious death	0.323	0.341	.712
Fear for the body after death	1.199	1.850	.166
Fear of premature death	2.866	2.059	.136

There are also no significant differences between groups with a different frequency of consumption regarding different aspects of death.

Discussion

The aim of this research was to examine the role of time perspectives as predictors of fear of death in consumers of psychoactive substances. The most common predictors of fear of death in consumers of psychoactive substances were found to be gender and past-negative time perspective, with future time perspective being statistically significant in two models and past-positive in only one.

When it comes to gender, there are significant differences regarding almost all aspects of fear of death and most of them suggest that women have higher fear

of death. Also, gender has turned out to be a statistically significant predictor of fear of the dying process, fear of the dead, fear for significant others, and fear of premature death. These results are partially compatible with some previous results, which showed that women are more afraid of death than men in all aspects, except for fear of conscious death and fear of premature death (Neimeyer et al., 2004). The only subscale where men had higher scores in this research is fear of being destroyed but generally, women expressed the tendency to score higher than men when it comes to fear of death.

Focusing on the past-negative time perspective, in this research it appeared as a statistically significant predictor of fear of the dying process, fear for significant others, fear for the body after death, and fear of premature death. This time perspective has previously been found to correlate with depression and anxiety (Zimbardo & Boyd, 1999) and, more importantly, people with a dominant past-negative time perspective are more likely to be in alcohol and drug programs than people with some other dominant time perspective (Klingemann, 2001). This time perspective was also found to negatively correlate with happiness (Drake et al., 2008) and positively correlate with Neuroticism (Van Beeket al., 2011) which suggests that these people are anxious and have a tendency to worry about various things, probably even about their death.

As it was previously mentioned, the past-negative time perspective represents a painful past, memories of some bad events or trauma which conditioned the person to be more vulnerable and sensitive and to see everything as bad (Zimbardo & Boyd, 1999). Therefore, the same person can imagine a painful and gruesome dying process with fear and think that it will certainly happen to him. Also, it is characterized by a bad memory of the past, which suggests the possibility of some sort of trauma at an early age. The importance of significant others in early childhood is vast, especially in creating an emotionally stable, balanced, creative, and curious person and in unfavorable conditions - fears and traumas (Bowlby, 1973).

The present study didn't take into account participants' past negative (or positive) life events which leaves this research with no understanding of the context that may have contributed to participants' decisions when they were completing the survey. It is suggested that some research in the future attempts to examine potential exposure to past negative and positive life events and question their role as potential mediators. It is also advised to consider the cultural context within which the investigation took place so that the results could have more context (Drake et al., 2008). The participants may have some kind of trauma or negative experience that is related to different wars that occurred in the 1990s in the country where this study took place (Serbia) when most of the participants were children. This is all speculative since none of this information was registered during the examination of participants.

People with negative experiences in the past and with pain that affects their perception, don't expect anything less from the future, so they can also predict

the worst possible outcomes for their body after they die, that it will be destroyed and mutilated. They feel powerless and predestined for negative experiences and the only thing left for them is to hope that something like that won't happen. They can express a general tendency to observe everything through the negative prism, to expect and assume the worst possible outcome, and it is possible that they also relate to death in the manner that they will die prematurely. It was shown that preoccupation with negative experiences might be a bad indication for psychotherapy and treatment in general (Beiser & Hyman, 1997), so these results give valuable insight and are helpful when it comes to providing help to people with mental health problems. This suggests that it is important to stimulate patients to stop focusing on negative memories and to search for positive experiences in their past, which could lead to healthier coping mechanisms in their behavior.

When it comes to future time perspective in this research, it appeared to be a statistically significant predictor of fear of the dying process and fear of conscious death. With the dominant future perspective, different types of perfectionism are linked (Lagoutina, 2017) which often comes with the tendency to control things around oneself, predict the outcomes, and change things around so it suits some predetermined goal in the future. This is not possible in the situation of conscious death and this specific situation represents helplessness, which is unbearable and enhances the fear. Also, comprehension that the death and dying process are inevitable, could lead to higher anxiety and fear in a person.

Boniwell and Zimbardo (2003, as cited in Drake et al., 2008) pointed out that being too future-oriented can sometimes imply an inability to relax, to let go, and "switch off". People with anxiety and depression are preoccupied with their futures, but not in the same way as goal-oriented people are focused on the future. Some previous research revealed that depressed people are future-negative oriented (Lavender & Watkins, 2004) and that suicidal people tend to have low scores on future-positive (MacLeod et al., 2005). These patients cannot envision a positive future and it seems that the tendency to imagine a positive future could be protective against suicide. These people are less future-oriented, but the relationship between suicidality and the Future scale from Zimbardo Time Perspective Inventory is unclear because this inventory does not differentiate between a positive and a negative orientation toward the future. There was also registered the dominant role of the Past-negative subscale and its effect on the relation between the Future subscale and suicidality and when the Past-negative is removed, there is no longer a significant correlation between Future and suicidality (Van Beek et al., 2011).

This could be the case when it comes to fears of death and their correlation with future time perspectives. Anxiety could be the potential factor that affects this assessment so, to fully understand this connection in a sample of psychoactive substance consumers, it is advised to register the level of participants' anxiety. Also, more research is needed when it comes to the difference between the future positive and the future negative perspectives to increase the usability of such time

perspectives (Van Beek et al., 2011). Some research showed that the individuals with anxiety disorders demonstrated systematic biases particularly in negative past and negative future time perspective, which was further related to worry and rumination, where negative past perspective was the best predictor for rumination and negative future perspective more strongly predicted worry (Åström et al., 2018). It is suggested that interventions targeting temporal focus may be one way of reducing repetitive negative thinking (Åström et al., 2018).

Lastly, the past-positive time perspective turned out to be a statistically significant predictor of fear for significant others, alongside the past-negative perspective and they are both positively correlated to this specific fear. Past-positive perspective generally indicates good memories of the past, sentimental and emotional recalling of the past, which can indicate that their childhood and growing up were happy and that they managed to accomplish emotionally rich and good relationships, thus the higher fear for significant others. They realize how hard it would be for them if they had lost their loved ones and close people that they have in life, and also how hard it would be for those people to lose them. On the other hand, people with a past-negative perspective also have higher fear for significant others and this perspective is described to potentially suggest some sort of traumatic event or regret regarding the past. This can point out some kind of regret in a specific relationship, which would lead to higher fear for significant others, because of the unresolved and conflicted relations with someone important.

There is one statistically significant correlation between age and fear of death, specifically fear for significant others. This correlation is low and negative and it suggests that older participants have less fear for significant others or that younger participants fear more for their significant others. This is in accordance with some previous research, which showed that more mature participants indicated less fear of death in general and in most aspects of fear of death, including the fear for significant others (Neimeyer & Moore, 1994). For these results to be more certain, it is advised to include participants with a wider age structure. In this research participants were mostly young people, aged from 20 to 42 years, with a mean value of around 26.5 years old. With older participants, some other statistically significant differences would probably show.

There are no significant differences between groups that prefer different substances and groups with a different frequency of consumption regarding the fear of death. Potential limitations are the size of different groups, so certain undetected differences could be revealed with larger groups and with larger differences between groups (in a way that there is a clear difference between the people who occasionally consume psychoactive substances and those who consume them more often or constantly). The question that was asked (“How often?”) didn’t have time determination and limitation and it questioned how many times in life overall has the person consumed some psychoactive substance.

Other limitations are also related to the sample structure. Suggestions for some future research would focus on a bigger sample, wider age structure, and involving a group of people who have never consumed psychoactive substances so that the group comparison between these groups would be possible. Also, bigger groups of different preferred substances would allow more precise comparison between them, which could give us some useful information about the relationship among consuming different substances and fear of death and time perspectives. Some potential implications of this research could be in the area of counseling and education, but also the detection of risk behavior and its correlates.

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VREMENSKE PERSPECTIVE KAO PREDICTOR STRAHA OD SMRTI KOD OSOBA KOJE KONZUMIRAJU PSIHOAKTIVNE SUPSTANCE

Apstrakt

Cilj istraživanja je ispitati ulogu vremenskih perspektiva u predviđanju straha od smrti kod osoba koje konzumiraju psihoaktivne supstance i ispitati razlike između grupa (pol, preferirana supstanca, učestalost konzumacije) u pogledurazličitih aspekata straha od smrti. Podaci su prikupljeni korišćenjem Zimbardove skale vremenskih perspektiva (ZTPI) i Multidimenzionalne skale straha od smrti (MFODS) na uzorku od 65 ispitanika, muškog (50.8%) i ženskog pola (49.2%) starosti 20-42 godine ($M = 26.49$, $SD = 4.34$). Prvi model ($R^2 = .35$, $F(7,58) = 4.525$, $p = .000$) objašnjava 35.3% varijanse straha od procesa umiranja, sa Polom ($\beta = .314$, $p = .009$), Prošlom-negativnom ($\beta = .250$, $p = .038$) i Budućom ($\beta = .325$, $p = .007$) vremenskom perspektivom kao statistički značajnim prediktorima. Drugi model ($R^2 = .22$, $F(7,58) = 2.428$, $p = .030$) objašnjava 22.7% varijanse straha od mrtvih, sa Polom ($\beta = .300$, $p = .022$) kao značajnim prediktorom. Treći model ($R^2 = .38$, $F(7,58) = 5.188$, $p = .046$) objašnjava 38,5% varijanse straha zaznačajne druge, sa Polom ($\beta = .385$, $p = .001$), Prošlom-negativnom ($\beta = .319$, $p = .007$) i Prošlom-pozitivnom ($\beta = .296$, $p = .015$) vremenskom perspektivom kao statistički značajnim prediktorima. Četvrti model ($R^2 = .32$, $F(7,58) = 4.011$, $p = .001$) objašnjava 32,6% varijanse straha od svesne smrti, sa Budućom ($\beta = .442$, $p = .000$) perspektivom kao značajnim prediktorom. Peti model ($R^2 = .24$, $F(7,58) = 2.733$, $p = .016$) objašnjava 24,8% varijanse straha za telo posle smrti, sa Prošlom-negativnom ($\beta = .293$, $p = .024$) vremenskom perspektivom kao značajnim prediktorom. Šesti model ($R^2 = .42$, $F(7,58) = 6.215$, $p = .000$) objašnjava 42,9% varijanse straha od prerane smrti, sa Prošlom-negativnom ($\beta = .379$, $p = .001$) vremenskom perspektivom kao značajnim prediktorom. Postoje razlike u polu u pogledu izraženosti rezultata na svim aspektima straha od smrti, osim na skalama straha od nepoznatog, straha od svesne smrti i straha za telo posle smrti. Postoji značajna povezanosti između uzrastai straha za značajnog drugog ($p < .05$, $r = -.281$). Ne postoje statistički značajne razlike između grupa koje preferiraju različite supstance, ni između grupa sa različitom frekvencijom

konzumacije supstanci. Konačno, različiti aspekti straha od smrti mogu se predvideti vremenskim perspektivama na ovom specifičnom uzorku i postoje značajne razlike između muškaraca i žena u pogledu izraženosti straha od smrti.

Ključne reči: vremenske perspektive, strah od smrti, osobe koje konzumiraju psihoaktivne supstance

**DEVELOPMENTAL
AND EDUCATIONAL
PSYCHOLOGY**

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UNIVERSITY TEACHERS' PERCEPTION OF ONLINE DISTANCE TEACHING DURING THE COVID PANDEMIC⁴

Abstract

A part of the results of wider pilot research on university teachers' perception of online distance teaching during pandemic are presented. Fifty university teachers and teaching assistants from three universities in Serbia who were doing online distance teaching in real-time during the pandemic (from March 2020) have participated. The main results from the questionnaire and self-assessment scales: university teachers are generally satisfied with their online teaching performance and achievement of teaching goals and outcomes in their online classes; they are moderately satisfied with students' activity, engagement, motivation, cooperation and learning independence. Teachers' satisfaction with synchronous communication is not significantly higher than satisfaction with asynchronous communication. When comparing regular and online classroom, 70% university teachers assess they are equally engaged in both, while only 10% feel more engaged in online classrooms. However, a vast majority perceives that online setting during pandemic required investing more time in teaching preparation or at least the same amount of time. University teachers did not perceive online distance teaching in the pandemic as overly stressful or difficult. Review and classification of teachers' description of problems during e-teaching revealed the following main teachers' concerns: technical issues (platform, connection or computer errors), lack of visual communication and difficulties in monitoring student activities and demanding preparation. So, university teachers as e-teachers in remote synchronous e-instruction are satisfied with their online teaching performance in general and with how they achieved teaching/learning goals and outcomes in their online classes.

Keywords: online distance teaching; virtual classrooms perceptions; university teachers.

Introduction and Context

E-education is widespread educational access and educational technology; it is included at all levels of education for more than half a century. In Serbia, e-education was first introduced at the university level as a support to traditional teaching, then as a way of implementing certain subjects; after that, it was implemented as a basic method of university courses and the whole study programmes (curricula). Before 2020, e-education in Serbia was becoming a

concept of education and a trend in educational development, but it was not yet an integrated form of the educational system at all levels. However, events in March 2020 were a key moment in education and a big shock to all systems. The COVID-19 pandemic caused an abrupt reorganization of the education system, affecting both teachers and students. As in other countries, traditional education (face-to-face instruction in the classroom) was suspended in Serbia and has transitioned to online educational forms. In Serbia, e-education was organized in two ways which was dominant in two phases of pandemic e-education (Bjekić & Stojković, 2021):

- I In the first lockdown phase (March 2020 – June 2020), distance online learning/teaching dominated, and all teachers had to be e-teachers;
- II In the second on/off school phase (September 2020 – May 2021), blended learning/teaching dominated.

In both phases during the period of pandemic education, online distance teaching in real-time using some of the videoconferencing platforms (remote e-education, e-education, etc.) was recognized as a central form of e-education.

What occurred in global education? According to data from the United Nations Educational, Scientific and Cultural Organization (ECLAC-UNESCO, 2020), by mid-May 2020, more than 1.2 billion students (maybe 1.6 billion learners in more than 200 countries; Pokhrel & Chhetri, 2021) at all levels of education worldwide had stopped having face-to-face classes. According to the 2021 World Bank report (World Bank, 2021), the COVID-19 pandemic has permanently altered schooling and changed education forever. COVID-19 has resulted in schools being closed all across the world. According to the World Bank:

- Number of students in the countries with fully closed schools: 1.130.169.834;
- Number of students in countries with partially closed schools: 50.134.558;
- Closing schools for 94% of the world's students.

Education has changed dramatically, with the distinctive rise of e-learning, whereby teaching is undertaken remotely and on digital platforms (World Bank report):

- the demand to realize e-instruction in the form of distance/remote education;
- education during COVID-19 is moving towards e-learning/teaching;
- transition to digital education;
- education changed from the traditional classroom or blended teaching model to the online learning/teaching model, and from the single online course to almost all e-courses.

What has happened at the university level and higher education institutions

(HEIs)?“ Most universities have transitioned from face-to-face teaching to the online format in an improvised way, displaying several types of problems, such as low quality of teaching, work overload, access difficulties, student dissatisfaction, and more. This improvised way of using information and communication technologies differs from distance education and online education” (Gusso et al., 2021, p. 1).

In the research of the motivational regulation, satisfaction, or frustration of the basic psychological needs and vitality of university students, before and after the transition to forced distance learning during the COVID-19 pandemic (Müller et al., 2021), “the results show that the satisfaction of basic psychological needs was significantly lower and the frustration thereof substantially higher during the distance learning period than before the pandemic. Intrinsic motivation and identified regulation were significantly lower during the forced distance learning period, and more controlled forms of motivation were higher than before the pandemic” (Müller et al., 2021, p. 1, 11).

The COVID-19 pandemic has had different effects on teacher education, too, in various ways, including student-teachers adaptation to remote teaching (Carrillo & Flores, 2020); institutions and teacher educators had to create new learning environments for student-teachers. According to the literature review (Đorić, 2021), there is a complex classification of influential factors on cognitive and affective aspects of e-teaching/e-learning regarding to technical aspect of e-learning; perception of e-learning tools; motivation and cognitive factors, factors related to specificity of learning content, social factors, factors related to skills and readiness; time factor and external factors.

Although e-instruction, remote learning-teaching and learning by the electronic equipment is not new and most of the teachers and student-teachers have been preparing for hybrid/blended learning and online and remote instruction, pandemic circumstances have shown that many teachers find themselves unprepared for the challenges they face (Hodges et al., 2020). Research of teachers' needs during the COVID-19 pandemic in the period from April till May 2020 (British Council, 2020) emphasized that: remote teaching was new for the majority of teachers and teacher educators; both teachers and teacher educators were reasonably confident in their ability to do their job remotely, but they felt that they needed more training and support in how to teach online.

In the pandemic circumstances, Serbian teachers tried to be e-teachers. At the beginning of the pandemic education conditions and schools' lockdown, distance education, emergency remote teaching and online learning started. At the beginning of the first phase of education in pandemic circumstances, some of the Serbian teachers were ready for e-education. Some teachers might be able to organize e-teaching in a remote mode (synchronously and asynchronously). Many of them were not ready for e-teaching (e-education) in remote mode. Many Serbian teachers used digital equipment in some parts of the teaching process,

but didn't have any e-education strategy and weren't able to prepare completely e-teaching in the remote mode synchronously (in real time). However, the majority of them attempted and began to learn how to organize e-instruction in remote mode in real time.

E-education: Basic Concepts and E-teachers

Recognizing that there are enough elements to study the field of e-learning as a science of e-learning, Mayer (2003) promoted the idea of the psychology of e-learning. Promoting also that e-learning is a special discipline in the scientific system, McCarty defined that:

“In the broadest sense, online education can be any truly educational activity, not just training in skills, conducted through the Internet, whether formal, informal, or self-education. In a more specific disciplinary sense, online education means teaching and other academic activities of accredited educational institutions conducted wholly or partly through the Internet” (McCarty, 2021, p. 2).

Today, differentiation of terms and concepts in this field is necessary. For example, e-learning is a system of procedures, processes and instructional materials that provide the diversity and efficiency of learning as an individual activity and psychological process, as well as an important social activity, which is not only a procedure in the school system but represents a formative activity for both community and individual development as well. The concept of e-teaching has developed in parallel with the concept of e-learning (Bjekić & Vučetić, 2013).

What is relation between e-learning and e-teaching?

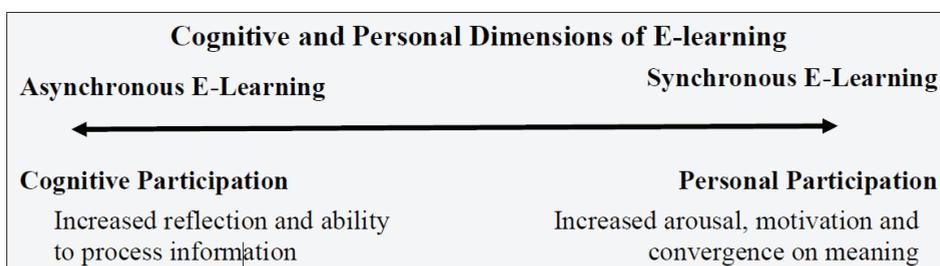
“Conceptual frameworks for e-learning and e-teaching are different. E-learning focuses on the learner and the learning process. The term “teaching” is used in two ways: teaching as the teacher's activities and teaching as the system of instructional activities (teachers' activities are incorporated into the teaching activities as the system of instructional activities). Then, there are two meanings of the “e-teaching” concept. According to Nakajima, e-teaching is “the system designed to improve teachers' performance, and their self-regulation and motivation. Its service designs are aimed at supporting teachers to teach effectively in an e-learning environment” (Nakajima, 2006, p. 1). The architecture of e-learning is centred on the learner. The architecture of e-teaching “needs to be centred on teachers” (Nakajima, 2006). E-teaching is not just a prerequisite to e-learning, but it can be a great innovation in education. However, in this paper, the term “e-teaching” is used in a broader sense. E-teaching is the instructional system of processes and activities designed according to the ICT development, characteristics, and models of e-learning, principles of formal communication, principles of e-education, and principles of a competence-based education system, etc. Instructional systems, according to Petrina (2007), involve relationships, conditions, processes, causes, effects, and feedback” (Bjekić et al., 2010, p. 203).

E-technologies for e-learning and e-teaching determine interactions between

e-teachers and e-students and shape e-communication. Distance e-education or remote e-education (the same meaning) based on network e-technology, defined as “learning and teaching online through network technologies, is arguably one of the most powerful responses to the growing need for education” (Hrastinski, 2008, p. 51). The effectiveness of distance education in the e-learning environment depends on the quality of teaching communication.

E-communication in distance education depends on the types of communication. One of the important dimensions of e-communication is: synchronous vs. asynchronous communication (Hrastinski, 2008; McGinn, 2019). Both of them are necessary in e-education: asynchronous and synchronous e-learning complement each other.

Figure 1. *Dimensions of e-learning/e-instruction (Bjekić & Vučetić, 2013, modified according to Hrastinski, 2008, p. 54)*



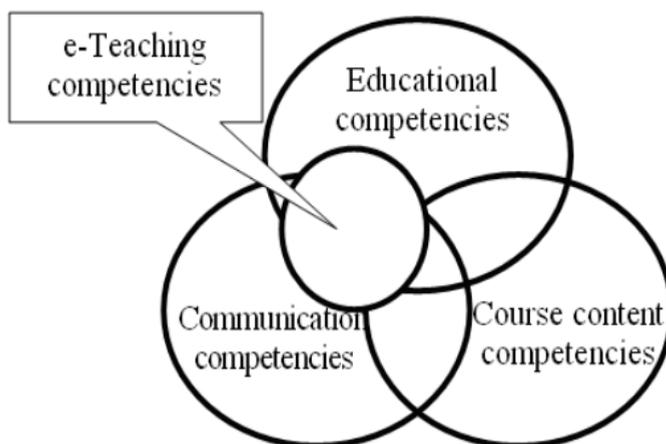
The implementation of distance education as e-learning to the end of the twentieth century and the most common modalities of e-learning distance education are based on the asynchronous type and asynchronous means of e-learning communication.

New educational circumstances at the beginning of the twenty first century in pandemic educational settings required opportunities for communication between participants in e-teaching. In the context of social isolation as a form of prevention of spreading virus, based on physical distance, some forms of synchronous communication between teachers, students and classmates are necessary for the teaching-learning process, and for socialization and mental health maintenance. Synchronous e-education (e-instruction especially) is realized as virtual classrooms supported by media (audio, video support, videoconferencing, text chat, audio chat, instant polling; Roughton et al., 2011, p. 46). It has the potential to support the development of an e-learning community (Bender, 2003). “Learners and teachers experience synchronous e-learning as more social and avoid frustration by asking and answering questions in real time. Synchronous sessions help e-learners feel like participants rather than isolated individuals” (Hrastinski, 2008, p. 51), because they (teachers and students) “can talk to each other, express emotions, participate in group activities in the break out rooms, and feel that they can still interact as if they were face

to face” (Roughton et al., 2011, p. 46). Synchronous e-communication, or real time e-communication, uses different e-tools and technologies (videoconferencing systems, chat, interactive platforms, etc.). In synchronous and real-time e-communication, the personal dimension of communication is emphasized; personal participation is a more arousing type of participation. This personal participation, based on the interaction involvement (Bjekić et al., 2021; Đorić et al., 2021) is the basis of cooperative and collaborative learning in the e-environment. Digital interactions are components of psychological well-being in young adulthood (Subrahmanyam et al., 2020).

The complexity of e-teachers’ engagement in e-instruction is increasing. It is based on the complexity of their professional competence (Figure 2). To realize expected outcomes of the e-education process, teachers can implement instruction based on the multilevel competence system (König et al., 2020). Realization of e-teaching in the remote synchronous mode requires a wide repertoire of knowledge and skills involved in the fundamental categories of professional competencies (Figure 2). Some standards define teachers’ specific e-competency for designing e-educational systems and e-courses, and realization of e-instruction, and acknowledge the combination of some specific educational competencies, communication competencies, and program competencies as specialized e-teaching competence (Bjekić et al., 2008; Bjekić et al., 2010).

Figure 2. *The structure of teachers’ competence (Bjekić et al., 2010, p. 204)*



Modern teachers have to develop e-teaching competence. The COVID-19 pandemic circumstances require both knowledge and skills, as well as confidence regarding both the success in online teaching and the affective-motivational area. Therefore, some authors “focus on teachers’ self-efficacy as one of the most important constructs in teacher competence” (König et al., 2020, p. 611).

Today, the intertwining of distance/remote education, e-learning and online learning has caused the need to redefine and differentiate the concepts of this

educational form and develop an integrative approach. In pedagogical terms, the need for a comprehensive and solid view of online and distance/remote education pedagogy seems obvious (Carrillo & Flores, 2020). How can teachers apply various e-tools and technologies in e-teaching based on current modified educational principles in new circumstances? In practice, prior to the pandemic circumstances, some teachers used electronic equipment, ICT, educational software and e-learning platforms to realize some forms of e-education (e-education is a wider concept and refers to the system), usually in the context of blended learning. That also applies to university teachers.

Research Methodology

Pilot research on online teaching and learning at the university level during a pandemic from the teachers' perspectives was realized as part of larger pilot research on university teachers' and students' perceptions of online distance teaching during the pandemic in Serbia (Bjekić et al., 2021; Đorić, 2021; Đorić et al., 2021; Stojković et al., 2021).

The main goal of the research was to explore university teachers' experiences and perceptions of the university e-instruction supported by the conferencing system in real time (virtual remote university e-classroom).

Specific objectives based on the main topic: to explore university teachers' self-assessment in e-teaching and their satisfaction with e-teaching and institutional support for e-teaching, and to make comparisons between asynchronous and synchronous university e-teaching in pandemic circumstances.

Variable:

- Self-categorization (based on self-assessment) of university teachers' online teaching proficiency: (1) beginner, (2) occasional user of e-technologies in teaching, (3) experienced user of e-technologies in teaching, (4) skilful e-teacher, (5) experienced creator of e-teaching, and (6) expert in e-teaching;
- e-teachers' assessment of e-teaching: assessment of the outcomes of e-instruction realized by the platforms for synchronous and asynchronous e-education (items in Table 1);
- university e-teachers' self-assessment of effectiveness: self-assessment of the readiness and skills for e-teaching (items in Table 2);
- university educators' satisfaction of e-instruction: satisfaction with organization and realization of e-teaching and collegial support (items in Table 3).

The research method: exploratory research based on survey methodology.

The research instrument: The questionnaire was constructed for the purposes of the wider project *E-instruction during the pandemic COVID-19 – E-teaching communication challenges* (the project was realized during pandemic educational context as activity of the Faculty of Technical Sciences in Čačak,

Department of educational sciences and technology; Bjekić et al., 2021; Đorić, 2021; Đorić et al., 2021; Stojković et al., 2021). The instrument was developed in two parallel forms: for students and for teachers in e-instruction. The version of the questionnaire used for this paper focuses on the university teachers' experience and perception of real time e-teaching supported by the videoconference system as platforms is applied. The questionnaire consists of items organized into the six topics: (a) demographic and educational characteristics of participants; (b) e-teaching experience before the pandemic COVID-19; (c) actual/current experience in e-teaching (teacher-educators) in pandemic circumstances; (d) e-teaching communication (communication in the virtual classroom) including interaction involvement in the virtual classroom; (e) perception and assessment of the effect of performed e-education; (f) self-assessment of efficiency and satisfaction with e-instruction and progress as an e-teacher. The scale items are presented in the tables in the *Results and discussion* section (tables 1, 2, 3, and 4).

The sample consisted of 50 university teachers and teaching assistants from three universities in Serbia who were doing online distance teaching in real-time (using some of the following videoconferencing platforms – MS Teams, GoogleMeet, Zoom, BigBlueButton) during the pandemic (from March 2020 to May 2021). Convenience sampling method was employed. Data was collected from March to June 2021. Participants received questionnaires by e-mail and sent their feedback after seven days.

Descriptive statistics procedures and parametric tests were used for data processing.

Results and Discussion

The outcomes of e-instruction realized by the platforms for synchronous and asynchronous e-education were evaluated by university teaching personnel (e-teachers) (Table 1).

Table 1. *University teachers' perception and assessment of the effects of e-learning performance (minimum = 1; maximum = 4)*

	<i>M</i>	<i>SD</i>
Achieving goals within your e-teaching	3.30	0.544
Achieving outcomes within your e-teaching	3.22	0.545
Satisfaction with communication within e-teaching in real time – synchronous communication („live“)	3.00	0.816
Satisfaction with communication within e-teaching in asynchronous mode – when it is not realized in real time (not „live“)	2.71	0.816
Degree of students' engagement	2.63	0.809
Degree of students' independence	2.66	0.798
Degree of students' cooperation	2.96	0.781
The level of activity of your students within your e-teaching	2.88	0.746
The level of motivation of your students for e-learning	2.88	0.746

University teachers' perceptions and assessments of the achievement of the goals and outcomes in their online classes (their online teaching performance) are moderately high. But, their satisfaction and assessment of students' activities and engagement, as well as their motivation, cooperation, and independence in learning, are moderate, although deviations suggest that the differences between teachers are important.

Teachers used synchronous and asynchronous teaching communication as forms of e-instruction. Their satisfaction with synchronous communication is not significantly higher than satisfaction with asynchronous teaching-learning communication (based on the t-test) ($t(47) = 1.770, p = .083$).

University e-teachers evaluated their own satisfaction with their e-instruction (Table 2).

Table 2. University teachers' self-assessment of efficiency and satisfaction with e-learning (minimum = 1; maximum = 4)

	<i>M</i>	<i>SD</i>
I am satisfied with my e-teaching.	3.28	0.607
My e-courses are well organized.	3.38	0.635
The implementation of e-teaching/learning was exciting for me.	3.00	0.957
E-teaching/learning was a challenge for me.	3.16	0.889

University e-teachers are very satisfied with the organization of their e-teaching and e-courses. This result is in line with other research findings on university teachers' satisfaction with online teaching that also conclude that, overall, university teachers are satisfied with online teaching (Marasi et al., 2020).

When comparing regular and online classroom, 70% of university teachers assess that they are equally engaged in both, while only 10% feel more engaged in online classrooms. However, a vast majority (72%) perceive that teaching in an online setting during a pandemic requires spending more time or at least the same amount of time on teaching preparation (28%).

Answering items about e-teaching difficulties, problems and stress, participants were offered three categories (distribution of their answers is presented in Table 3), with a requirement to briefly explain their choice.

Table 3. University teachers' perception of problems during online teaching

	often	sometimes	rarely
Problems during online distance teaching.	0%	38%	62%
Was the online distance teaching stressful for you?	6%	38%	56%
Was the communication during online classes stressful for you?	2%	6%	92%

Based on the percentages, university teachers perceive difficulties during online teaching rarely (more than half perceived problems and stress of online distance teaching rarely, and most of them do not perceive online teaching

communication stress).

We agree with authors who conclude their research with the statement that future studies should include diverse and more extensive measures for teacher stress and anxiety, which will allow researchers to gain a greater understanding of teacher anxiety during the COVID-19 pandemic (Pressley et al., 2021).

Review and classification of teachers' descriptions of problems during e-teaching revealed the following main concerns: technical issues (platform, connection or computer errors), lack of visual communication, difficulties in monitoring student activities and demanding preparation. Each of these categories revolves around certain practical elements of planning and conducting classes and there were little to no reports on stress, tensions and other concerns related to the psychological well-being of teachers.

E-teachers' communities are formative for establishing university e-education, especially e-instruction. University e-teachers reported the institutional support for online e-teaching in the new educational circumstances during the COVID-19 pandemic (Table 4).

Table 4. *University teachers' assessment of institutional support for online teaching (minimum = 1; maximum = 4)*

	<i>M</i>	<i>SD</i>
Support for the implementation of e-teaching at the faculty level.	3.46	0.706
The network of teachers and associates for the use of e-technology in teaching has contributed to a better implementation of e-teaching in this period.	2.82	1.004
I have the opportunity to access the e-courses of my colleagues.	1.80	0.904
I am familiar with the way of development and realization of e-teaching of my colleagues from the Department.	2.24	1.021
I am familiar with the way of development and realization of e-teaching and e-courses of my colleagues at the institution.	1.82	0.661

While support at the faculty/institutional level for the implementation of e-teaching was assessed highly ($M = 3.46$), some aspects of colleagues' support for online distance teaching were assessed as less accomplished. These results raise questions about the constitution of the university e-teaching community, the role of e-teachers' interaction and support, as well as the role of institutions.

University teachers (teachers and teaching assistants) assessed and classified their own proficiency for online teaching (Table 5) before the pandemic – before March 2020, and after two semesters of online instruction and hybrid instruction in an e-education context.

Table 5. *Self-categorization of online teaching proficiency*

	Before pandemic	After 2 semesters of OT & HT
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	<i>f</i>	%	<i>f</i>	%
a. Beginner	3	6	0	0
b. Occasional user of e-technology in teaching	19	38	6	12
c. Experienced user of e-technology in teaching	2	4	10	20
d. Skilful e-teacher	11	22	16	32
e. Experienced creator of e-teaching	11	22	14	28
f. Expert in e-teaching	4	8	4	8
	50	100	50	100

University e-teachers perceived that they have improved their e-competence during the period of education in this extraordinary time of crisis. Twenty teachers estimated that they have made progress in the use of e-technology in teaching, and thirty teachers (especially teachers with higher self-esteem at the beginning) estimated themselves in the same category of e-teachers. The number of beginners and occasional users of e-technology in teaching has decreased (44% before pandemic to 12 % after two semesters). At the same time, according to teachers' self-assessment, the number of the experienced user of e-technology in teaching and skilful e-teachers has increased (from 26% to 52%).

Finally, university teachers were asked what they recognized as the pros and cons of online teaching. The university teachers' perceptions of the advantages and disadvantages of online teaching and their additional reflections are represented (Table 6) as anecdotal illustrations, not as systematically analyzed data.

According to this review of university e-teachers' comments about online (synchronous and asynchronous) instruction, different experiences and attitudes towards online teaching in general are recognized.

Some limitations of this research are recognized. Because this pilot study has exploratory goals (to give an overview of university teachers' work in the e-educational environment in a globally specific context), the significance of the results is limited. The sample size and the fact that the results were based on only 3 HEIs put limitations on the generalization of research findings.

Table 6. *University teachers' perception of pros & cons of online teaching*

By no means would I use only e-teaching	Requires for greater teacher engagement but economical (addition to class teaching)	Lots of tools for teaching and interacting with students
-----------------------------------------	-------------------------------------------------------------------------------------	----------------------------------------------------------

- Only good for the state of emergency.
 - Only if I have to / only if necessary.
 - E-courses only as a back-up plan and majority of activities traditional.
 - Live communication is irreplaceable.
 - Isolation of students and teachers.
 - Suitable for subjects that are related to computer work.
 - Suitable for students with a lower level of achievement.
 - Good for students who work of live further, especially master and PhD.
 - Possibility of recording lectures / exercises is useful for students.
 - Availability of materials and tests.
 - Lack of feedback from students.
 - Objective assessment is more difficult.
 - Lack of adequate space.
 - More time spent in front of the monitor, health and mental problems.
 - Greater possibility of individualization of teaching.
 - Greater opportunity for independent learning.
 - Greater flexibility in organization teaching/ learning.
 - Rational use of time.
 - Through online teaching students develop their own digital competencies that they will need during their further professional development.
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Conclusion and educational implications

In summarizing the main findings, it can be concluded that university teachers as e-teachers in remote synchronous e-instruction are in general satisfied with their online teaching performance and with how they achieve teaching/ learning goals and outcomes in their online classes. Even though the online setting during the pandemic was more demanding regarding teaching preparation, it was not perceived as overly problematic and stressful. When it comes to perceived general support for the implementation of e-teaching at the faculty level it was assessed highly, however, teachers are mostly not familiar with the way other department/faculty colleagues develop and conduct their online teaching.

Even though online distance teaching had a long tradition of research and implementation in education, higher education in particular, the COVID-19 pandemic made online forms of teaching from the background to the foreground at all levels of education. The shift to mass online education has proved to be challenging (Marcu, 2021). Apart from all the downsides and suffering that the COVID-19 pandemic has brought to many people around the world, it can be argued that it has also provided a chance to improve e-education (to introduce digital learning and e-equipment into education at all levels). We offer some final thoughts for relevant further research and discussions: What have we learned from this experience that can better prepare education systems in the long run, for some other crisis situation? Is online education here to stay as a mainstream option, or is it merely a good background or additional technology to traditional teaching? And is there “traditional teaching” or is blended (hybrid) learning-teaching a new norm, a new traditional? Also, what are the teacher

education requirements? And finally, what kind of research is needed?

More specific suggestions for future research could be very diverse, given the complexity of the topic. Since this was exploratory research, mostly descriptive, the next directions would be to firstly converge these and similar findings and to establish more objective measures of effectiveness in online teaching; engaging in some experimental research with parallel groups could be one way. Attitudes towards online forms of work could be a significant factor to be accounted for in future research. Finally, it was not the focus of this paper but it is important to include more diverse and more extensive measures for teacher stress in some future studies. And to count student in discussions on online teaching issues (in determining research objectives as well as practical day-to-day practice and decisions in university teaching) because they are at the other side of the same process, process of teaching/learning.

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KAKO UNIVERZITETSKI NASTAVNICI OPAŽAJU ONLAJN NASTAVU NA DALJINU TOKOM COVID PANDEMIJE

Apstrakt

U radu su izloženi rezultati istraživanja načina na koji univerzitetski nastavnici opažaju nastavu na daljinu u realnom vremenu tokom pandemije. Uzorak: 50 univerzitetskih nastavnika (nastavnici i asistenti) sa tri univerziteta u Srbiji koji su tokom pandemije (od marta 2020. godine) realizovali onlajn nastavu na daljinu u realnom vremenu. Korišćen je upitnik i skale procene onlajn nastave. Glavni rezultati su sledeći: univerzitetski nastavnici uglavnom su zadovoljni kako su realizovali online nastavu i ostvarivanjem ciljeva i ishoda nastave na svojim onlajn časovima; oni su umereno zadovoljni aktivnošću, angažovanjem, motivacijom, saradnjom i samostalnošću u učenju studenata. Njihovo zadovoljstvo sinhronom

nastavnom komunikacijom nije značajno više nego zadovoljstvo asinhronom komunikacijom. Poredeći rad u tradicionalnoj učionici i onlajn učionici, 70% univerzitetskih nastavnika je procenilo da su podjednako angažovani u obe, dok je samo 10% procenilo da se više angažuje u onlajn učionici. Ali skoro svi smatraju da onlajn nastava tokom pandemije zahteva značajno više vremena za pripremu, ili bar isto vreme. Univerzitetski nastavnici nisu opažali onlajn nastavu na daljinu (u realnom vremenu) kao stresnu ili napornu, tešku. Analizom sadržaja komentara ispitanika, izdvojeni su neki problemi: tehnički problemi (problemi sa konekcijom, greške u funkcionisanju opreme, računara, platformi), nedostatak vizuelne komunikacije i otežano praćenje aktivnosti studenata, kao i zahtevna priprema. Dakle, univerzitetski nastavnici kao e-nastavnici u udaljenoj sinhronoj e-nastavi su, generalno, zadovoljni svojom onlajn nastavom u pandemijskim uslovima, kao i sa postignutim ciljevima i ishodima na svojim onlajn časovima.

Ključne reči: onlajn nastava na daljinu, percepcija virtuelne učionice, univerzitetski nastavnici.

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PARENTING ATTITUDES AMONG YOUNG BULGARIAN ADULTS²

Abstract

Parenting attitudes constitute important dimensions of caregiving as they shape parents' childrearing practices and behaviors and have a long-lasting impact on child development. The study reveals parenting attitudes among Bulgarian young adults and the effect of sociodemographic factors on different facets of parental attitudes. Mediating effect of personality traits on parenting attitudes is explored. The community sample, 361 participants (66.2% female), aged 18 to 39 ($M = 29.45$, $SD = 5.05$), completed anonymously a web-based survey. Half of the participants (47.9%) have children. The construct of parental attitudes was measured by The Early Parenting Attitudes Questionnaire (Hembacher, & Frank, 2020, Bulgarian version Bikovska & Hancheva) which is designed to measure intuitive theories of parenting on three factors - Affection and attachment (AA), Early learning (EL) and Rules and respect (RR). Personality traits are measured by Personality Inventory for DSM-5 - Brief Form (American Psychiatric Association, 2013). One-way ANOVA analysis revealed that AA attitudes were significantly differentiated by age [$F(1, 359) = 4.701, p = .031$], gender [$F(1, 359) = 63.82, p = .000$], education [$F(2, 358) = 9.46, p = .000$] and being a parent [$F(1, 359) = 70.94, p = .000$]. RR attitudes were significantly differentiated by age [$F(1, 359) = 6.182, p = .013$], education [$F(2, 358) = 4.928, p = .008$] and being a parent [$F(1, 359) = 19.72, p = 0.000$]. The effect of being a parent on AA attitudes was significantly mediated by Detachment, $b = .2664$, BCa CI [0.0194, 0.6110], Antagonism, $b = .2462$, BCa CI [0.0395, 0.5424], Psychoticism, $b = .5946$, BCa CI [0.2633, 1.0015] and total psychopathology, $b = .4043$, BCa CI [0.1391, 0.7453]. Discussion is focused on practical application of the findings. Recommendations for the programs and services for future parents are formulated.

Keywords: parenting, intuitive theories, personality traits, child development, Bulgarian adults

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Introduction

Parenting is a multifaceted and dynamic process encompassing behaviors, skills, attitudes and knowledge. Dynamic nature and factors determining parenting has been an object of interest in psychological research for decades. Its complex and dynamic nature has led researchers to take a more reductionistic approach to experimental design and focus on specific aspects of the phenomenon (for example: particular parental behaviors) and their impact on children's developmental outcomes. Findings have associated parenting practices with children's psychosocial development, educational achievement, internal and external behavioral problems, etc. (Baumrind, 1991; O'Connor & Scott, 2007; Stevenson-Hinde, 1998). While there is a huge body of research focused on the consequences of parenting, exploring factors shaping parental practices is of equal importance. According to Jay Belsky's process model, there are three main determinants of parenting: personal psychological resources of the parents, characteristics of the child and contextual sources of stress and support (Belsky, 1984). The proposed model „assumes that parents' developmental histories, marital relations, social networks, and jobs influence individual personality and general psychological well-being of parents and, thereby, parental functioning and, in turn, child development” (Belsky, 1984, p. 85). Belsky defined the psychological resources of the parent as the most important determinant which includes developmental history of the parent, personality and psychological functioning (Taraban & Shaw, 2018). Parental cognitions, among which parenting attitudes, are a part of the psychological functioning of the parent.

Research on parenting attitudes falls into the line of the social cognition approach which focuses on various types of parental social cognitive processes and how they relate to children and childrearing practices. There are different constructs utilized to capture aspects of parenting cognition such as beliefs, perceptions, values, attributions, attitudes, etc. Attitudes are „an individual's predisposition, reaction to, or affective evaluation of the supposed facts about an object or situation” (Holden & Edwards, 1989). In the past decade, there has been plenty of research on parental attitudes toward: family stress, psychological control, support, use of coercion, vaccinations, family violence, etc., where the most frequently studied parental attitudes are those toward punishment and specifically toward corporal punishment (Holden & Smith, 2019). Exploration of the link between attitudes and parent-child emotional and behavioral interactions is an important prerequisite for development of evidence-based programs and interventions for family support and well-being.

Previous research findings suggest links between sociodemographic factors of the family and child outcomes. For example, families with higher parental education tend to be lower on authoritarian and permissive parenting and higher on authoritative parenting (Hoff & Laursen, 2019). Recent explanatory model

suggests that parent's educational attainment influences children's academic success and development through parent's beliefs and expectations (Davis-Kean et al., 2021). It posits that parents with higher education have better abilities to analyze and synthesize information about childrearing, which influences their beliefs and expectations about academic success and thus shapes their parenting behaviors through creating a more stimulating home environment like book reading, talking, etc. Socioeconomic status has been pointed as a factor influencing parenting practices and child outcomes as well. According to a literature overview, parents with lower socioeconomic status tend to emphasize proper behavior (being obedient, respectful, and quiet) as goals for their children while parents with higher socioeconomic status want their children to be more self-directed and this tendency is stable across cultures (Hoff & Laursen, 2019).

There is emerging evidence from theory and research regarding parent's cognitions about their children and children's behavior as one of the paths linking personality and parenting behavior (Belsky & Jaffee, 2006). One study showed that parent's attitudes and beliefs about infant caretaking influenced their perception of the baby's crying – whether it is aversive, urgent or manipulative (Zeifman, 2003). It also influenced their tactics for managing crying – parents who held infant-centered attitudes more often perceived crying as urgent, reported greater sympathy and indicated they would intervene in response to crying at an earlier point. According to a meta-analytic study focused on parent's personality and its effect on different dimensions of parenting, parents who score higher on Extraversion, Agreeableness, Conscientiousness, and Openness and lower on Neuroticism engage in more warm and structured parenting (Prinz et al., 2009). Its' authors conclude „personality can be seen as an inner resource that affects parenting” which is in line with Belsky's process model of parenting (Belsky, 1984).

Previous research suggests that there are cultural differences in parenting cognitions (Bornstein et al., 2011). Bornstein and colleagues found differences in childrearing attitudes between nine countries after controlling for parent's age, education and possible social desirability of responding. According to their data, parents in the Philippines, Kenya and Colombia were more likely to hold authoritarian attitudes than parents in the US, Sweden and China. The later rated higher progressive and modern attitudes. The authors conclude that „likely powerful cultural processes help shape childrearing attitudes” (p. 15).

The purpose of the present study is to reveal early parenting attitudes among Bulgarian young adults and the effect of sociodemographic factors (age, gender, education, etc.) on different facets of parenting attitudes. The mediating influence of personality traits on parenting attitudes is also explored. Having more insight on the early parenting attitudes of the Bulgarian population will be useful for the development of early intervention and support programs for parents and their children. The importance of introducing evidence-based interventions for

family support in practice is beyond questioning, having in mind demographic tendencies in Bulgaria for the last two decades (for review see Bardarov & Ilieva, 2017).

Method

Participants and Procedure

The community sample, 361 participants (66.2% female), aged 18 to 39 ($M = 29.45$, $SD = 5.05$), completed anonymously a web-based survey. Half of the participants (47.9%) have children. 81.7% of them perceive their economic status as good. In terms of education, 19.1% of the sample have a high school diploma, 37.4% have a Bachelor's degree, and 43.5% have a Master's degree/PhD. 58.4% of the participants live in the capital city.

Data Analysis

The collected data was analyzed using IBM SPSS Statistics 20. A mediation analysis was performed using PROCESS for SPSS developed by Andrew F. Hayes.

Instruments

Parenting Attitudes

To measure parenting attitudes, we used the The Early Parenting Attitudes Questionnaire, EPAQ (Hembacher & Frank, 2020, Bulgarian version Bikovska & Hancheva, in press). The self-report questionnaire is designed to measure intuitive theories of parenting, operationalized in three factors – Affection and attachment (AA), Early learning (EL) and Rules and respect (RR). Reliability of the Bulgarian version of EPAQ at the level of subscales was acceptable (Cronbach's alpha coefficient in the range of 0.71 to 0.79). Each of the factors consists of 8 items rated on a 7-point Likert scale where 0 = *Do not agree* and 6 = *Strongly agree*. The Affection and attachment factor represents the idea that emotionally close parent-child relationships are important for child development (e.g., reverse item "Too much affection, such as hugging and kissing, can make a child weak"). The Early learning factor represents the belief that it is important to foster early learning („Reading books to children is not helpful if they have not yet learned to speak"). The Rules and respect factor represents ideas around children's autonomy, behavioral control, respect towards adults, etc. („It is okay if young children boss around their caregivers").

Personality Assessment

To assess personality characteristics of parents we used the Bulgarian version (Hancheva, in press) of the Personality Inventory for DSM-5–Brief Form (American Psychiatric Association, 2013). It is a 25-item self-report instrument, scored on 4-point Likert scale ranging from *Very False or Often False* (0) to *Very True or Often True* (3). The questionnaire measures five personality trait domains: Negative affect (vs. Emotional stability), Detachment (vs. Extraversion), Antagonism (vs. Agreeableness), Disinhibition (vs. Conscientiousness), Psychoticism (vs. Lucidity). Cronbach’s alpha coefficient of the Bulgarian version of the instrument for this sample is in the range of 0.69 to 0.73.

Demographic Information

Participants were asked to report their age, gender, highest level of education, place of residence, perceived economic status and whether they have children.

Results

One-way ANOVA analysis were run in order to reveal the effect of sociodemographic factors on different facets of parental attitudes. For the purposes of the study, the participants were divided into two age groups: the first group with participants aged from 18 to 29 ($n = 168$) and the second group with participants aged from 30 to 39 ($n = 193$). Table 1 shows that age significantly differentiated AA attitudes [$F(1, 359) = 4.701, p = 0.031$] and RR attitudes [$F(1, 359) = 6.182, p = 0.013$]. Younger adults score higher on RR attitudes and lower on AA attitudes.

Table 1. Means, standard deviations and one-way analyses of variance in parenting attitudes between age groups

Measure	Aged 18-29		Aged 30-39		$F(1, 359)$
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
AA attitudes	38.98	6.09	40.33	5.70	4.701*
RR attitudes	30.62	7.21	28.79	6.72	6.182*
EL attitudes	43.91	4.15	43.36	4.16	1.546

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

According to the results, gender also has an effect on parenting attitudes. Table 2 shows that gender significantly differentiates AA attitudes [$F(1, 359) = 63.82, p = .000$] and EL attitudes [$F(1, 359) = 10.41, p < .01$] where women score higher on both dimensions.

Table 2. Means, standard deviations and one-way analyses of variance in parenting attitudes according to gender

Measure	Male		Female		<i>F</i> (1, 359)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
AA attitudes	36.50	6.31	41.35	4.96	63.824***
RR attitudes	30.43	6.89	29.23	7.04	2.365
EL attitudes	42.64	4.72	44.11	3.76	10.411**

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

Table 3 shows that higher education significantly differentiates AA attitudes [*F*(2, 358) = 9.46, *p* = 0.000] and RR attitudes [*F*(2, 358) = 4.928, *p* = .008]. Participants with higher education score higher on AA attitudes and lower on RR attitudes.

Table 3. Means, standard deviations and one-way analyses of variance in parenting attitudes according to education

Measure	High school diploma		Bachelor's degree		Master's degree/PhD		<i>F</i> (2, 358)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
AA attitudes	37.29	6.59	39.56	6.00	40.90	5.17	9.464***
RR attitudes	31.13	8.20	30.34	6.39	28.37	6.77	4.928**
EL attitudes	43.25	4.66	43.91	4.07	43.52	4.00	0.651

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

One-way ANOVA analysis was run to check whether having children and thus parenting experience has an effect on parenting attitudes. Nearly half of the participants (47.9%) reported to have children, so the sample was divided into two groups. Table 4 shows that having parenting experience significantly differentiates AA attitudes [*F*(1, 359) = 70.94, *p* = .000] and RR attitudes [*F*(1, 359) = 19.72, *p* = .000]. People who have children score higher on AA attitudes and lower on RR attitudes.

Table 4. Means, standard deviations and one-way analyses of variance in parenting attitudes between groups of people with and without parenting experience

Measure	don't have children		have children		<i>F</i> (1, 359)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
AA attitudes	37.41	6.14	42.21	4.47	70.941***
RR attitudes	31.16	7.07	27.97	6.55	19.714***

EL attitudes 43.29 4.38 43.97 3.88 2.368

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

In order to explore the effect of personality traits on parenting attitudes we ran a mediation analysis. The statistically significant indirect effect of personality traits is shown in Table 5. The effect of being a parent on AA attitudes was significantly mediated by Detachment, $b = .2664$, *BCa CI* [0.0194, 0.6110], Antagonism, $b = .2462$, *BCa CI* [0.0395, 0.5424], Psychoticism, $b = .5946$, *BCa CI* [0.2633, 1.0015] and a total psychopathology score, $b = .4043$, *BCa CI* [0.1391, 0.7453]. The direct effect from having parenting experience to Detachment ($b = -0.1471$, $SE = 0.0708$, $p < .05$), Antagonism ($b = -0.1666$, $SE = 0.0593$, $p < .01$), Psychoticism ($b = -0.2717$, $SE = 0.0660$, $p < .01$) and total psychopathology score ($b = -0.1602$, $SE = 0.0455$, $p < .01$) is negative and significant. The direct effect of Detachment ($b = -1.8108$, $SE = 0.4141$, $p < .001$), Antagonism ($b = -1.4776$, $SE = 0.5016$, $p < .01$), Psychoticism ($b = -2.1885$, $SE = 0.4412$, $p < .001$) and total psychopathology score ($b = -2.5231$, $SE = 0.6482$, $p < .001$) on AA attitudes is negative and significant, indicating that people who score higher on those personality traits are more likely to score lower on AA attitudes.

Table 5. *Personality domain mediation effect between parenting experience and AA attitudes*

Parenting experience	Personality domain mediation effect on AA attitudes	AA attitudes
Detachment	$b = .2664$, <i>BCa CI</i> [0.0194, 0.6110]	
Antagonism	$b = .2462$, <i>BCa CI</i> [0.0395, 0.5424]	
Psychoticism	$b = .5946$, <i>BCa CI</i> [0.2633, 1.0015]	
Total psychopathology	$b = .4043$, <i>BCa CI</i> [0.1391, 0.7453]	

Discussion

The purpose of the study was to explore parenting attitudes among Bulgarian young adults and to analyze the effects of sociodemographic factors and personality traits on different dimensions of parenting attitudes. The results revealed that women, adults 30+, adults with higher education and adults who have children demonstrated stronger attitudes towards emotionally close parent-child relationships and shared belief of their importance for child development. Younger adults, adults with lower education and adults who do not have children show stronger attitudes towards children respecting the adults and following their

rules, including beliefs about children's autonomy and use of behavioral control. Women put more emphasis on the importance of early learning. The effect of having parenting experience on Affect and attachment attitudes was significantly mediated by personality traits (Detachment, Antagonism, Psychoticism, and Total psychopathology).

Education is one of the sociodemographic factors that differentiated the participants' parenting attitudes. People with higher education tend to put more emphasis on the emotional side of the relationship with the child and less emphasis on establishing respect towards adults and strict rules. This finding is in line with recent literature review, suggesting that „higher levels of education might improve parenting by increasing parents' proclivity to seek out and evaluate information about childrearing, their child's well-being, and other important aspects of family life" (Davis-Kean et al., 2019, p. 413). According to research, parent's higher educational attainment is associated with higher levels of warmth and sensitivity, and less hostility in parent-child interactions.

According to the results, women tend to put more emphasis on Affect and Attachment attitudes. This finding is consistent with the findings of the authors of the EPAQ where women reported stronger agreement with the items related to Affection and Attachment (Hembacher & Frank, 2020). The authors hypothesize this could be a cultural expectation for women to display affection more readily or it could reflect societal norms that caregiving is a primary mother's job. The original research did not find any gender differences on the EL attitudes. The difference in sample characteristics is a possible factor of influence, for the original sample was biased towards early learning, as they had been enrolled participants in a children's museum program. In Bulgarian community sample gender differences in attitudes towards early learning need further exploration, going beyond the cultural stereotypes about mother's/father's role.

Our results showed that people who have children score higher on AA attitudes and lower on RR attitudes. We hypothesize that there is a shift in parenting attitudes after becoming a parent and gaining parenting experience. One longitudinal study showed change in parenting beliefs in first-time mothers from the pre- to the postnatal period: „mothers as a group showed adaptive change in belief scores, endorsing more nurturance, less restrictiveness, less authoritarianism, more knowledge of social learning theory, less punitiveness and less role reversal" (Scott & Hill, 2001, p. 112). According to the cited study, mothers also perceived warmth in the parent-child relationship as more important after giving birth.

The effect of having parenting experience on Affect and Attachment attitudes was significantly mediated by personality traits (Detachment, Antagonism, Psychoticism, and Total psychopathology). According to a recent literature overview there is a significant small to moderate link between a parent's personality (in terms of the Big Five) and parenting where all personality traits

proved to be related to parental warmth and behavioral control and Agreeableness and Emotional stability are related to autonomy support (Prinz et al., 2019). Our results show that Detachment mediates parenting experience and AA attitudes. In The Diagnostic and Statistical Manual of Mental Disorders– V (DSM-5; American Psychiatric Association [APA], 2013), *Detachment* is defined opposed to Extraversion as „avoidance of socioemotional experience, including both withdrawal from interpersonal interactions (ranging from casual, daily interactions to friendships to intimate relationships) and restricted affective experience and expression, particularly limited hedonic capacity”. According to previous research both fathers and mothers who are more extraverted show more positive affect and sensitivity and create a more cognitively stimulating environment when interacting with their children (Belsky et al., 1995). In another study, parents rated higher on Extraversion also tend to be more affectionate, easygoing, and encouraging the independence of their children (Losoya et al., 1997). From a theoretical perspective, for people with the tendency to avoid socio-emotional experience, interactions with the child may not bring enjoyment and thus they may engage in less sensitive and less emotionally responsive parenting behaviors. People with this profile would hold and report attitudes, which do not put emphasis on the importance of the emotional bond with the child.

Antagonism also mediated the effect of having parenting experience on Affect and Attachment attitudes. In DSM-5, Antagonism is defined opposed to Agreeableness as „behaviors that put the individual at odds with other people, including an exaggerated sense of self-importance and a concomitant expectation of special treatment, as well as a callous antipathy toward others, encompassing both an unawareness of others’ needs and feelings and a readiness to use others in the service of self-enhancement” (APA, 2013). According to previous research, higher levels of parental agreeableness are linked to higher levels of parental warmth and responsive parenting practices (Prinz et al., 2019). One study showed that mothers scoring high on this trait were less detached and less affectively negative toward their children and showed more positive affect, sensitivity, and cognitive stimulation in the interaction with the child (Belsky et al., 1995). In another study mother’s agreeableness was directly associated with fewer unresponsive maternal behaviors during distress eliciting tasks (McCabe, 2014).

McCabe (2014) conducted a meta-analytical study to integrate the personality-parenting literature and the psychopathology-parenting literature and concluded that the two constructs are not independent in their relation to parenting. Thus, any significant associations between personality and psychopathology and parenting may be explained by shared variance between the two.

According to McCabe’s meta-analysis lower levels of psychopathology are associated with more adaptive parenting behaviors (McCabe, 2014).

Practical Implications and Limitations

Findings from this study can be used in the planning and development of parenting programs and interventions. Usually, these programs seek change in parents' behaviors towards more responsive and positive parenting. One way of influencing those behaviors is through targeting parent's cognitions. Previous research has shown that this could be achieved through brief interventions and even via email (Cudaback et al., 1990; Holden et al., 2014). According to our results, when designing interventions, it is important to keep in mind the participants age, gender, level of education, parenting experience and personal characteristics. Our study showed that people with higher education tend to hold more child-centered attitudes and agree more that the emotional bond with the child is important for its development. They also put less emphasis on rules and respect towards adults. This means that programs aiming to provide more information and knowledge about early child development and positive parenting could influence participants' childrearing attitudes.

Limitations of the study are linked to the general limitations of cross-sectional study design. Future longitudinal design study is planned, which would permit not only following of the changes in parental variables but also testing more elaborated models including also child's variables (as suggested by theoretical models of Belsky & Jaffee, 2006).

Previous research has shown the importance of social support. Future studies should include it as a variable of importance, considering its mediating role in the outcomes. In the case of maternal psychopathology, emotional support from the social network predicted more adaptive parenting attitudes (Oyserman et al., 2002; Rogosch et al., 1992). This means that even the parenting attitudes of expectant parents/parents with psychopathological traits/disorders could be altered indirectly through intervention programs with focus on building social support networks.

Conclusion

The intuitive theories of parenting, which young adults hold, are an important factor in shaping parenting behavior and subsequently child development. The adaptation of instrument for screening of parenting attitudes is an important step towards effective preventions and interventions for parent-child support. The study revealed the impact of demographics on parental attitudes and mediating role of personality traits thus pointing at need for individualized as opposed to one-size-fits-all interventions supporting development of parenting skills and enhancing optimal parenting behavior.

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EQUITY OF EMERGENCY REMOTE EDUCATION IN SERBIA: A CASE STUDY OF A ROMA STUDENT'S EDUCATIONAL EXPERIENCES²

Abstract

The aim of the study is to provide a particular portrayal of emergency remote education (ERE) in Serbia from the perspective of its most disadvantaged partakers. The study applied a single-case study design. The participant was an 11-year-old Roma boy, attending the 5th grade of elementary school in Belgrade. Since October 2019, a group of university students and teaching staff have been providing learning support for the student twice a week. For approximately two and a half years, the researchers continuously produced and/or collected participant-observations, anecdotal notes, the content of the Viber group, artefacts from the learning/teaching process, and notes from interviews with the pupil and his parents. The data from these multiple sources were merged and analysed using event structure analysis. From the analysed data the researchers reconstructed how the Roma student experienced ERE and which factors influenced the process. The analysis acknowledges that ERE policy and practice in interaction with the disadvantaged positions of certain students exacerbate inequity in education. The findings suggest that achieving equity of ERE requires educational decision-making which highlights the perspectives of students from disadvantaged backgrounds and their families, purposefully approaches ERE to disrupt potential inequities, and develops the capacities of schools and teachers to address educational inequities in an emergency context.

Keywords: equity, emergency remote education, Roma, education

Emergency Remote Education

Efforts to slow down and prevent the spread of COVID-19 involved closing schools, universities and other educational institutions. More than 1.5 billion learners of all ages from around the globe are reported to have been affected by school and university closures due to the pandemic (UNESCO, 2020). The continuity of education was provided through different remote learning models (e.g., synchronous and asynchronous online learning/teaching, hybrid learning/teaching³, TV instruction). The different models reflected the course of the virus and each country's unique geographical, economic, social, and political features, as well as the organisational factors at the level of each region/municipality or school.

Due to the pervasive influence of the pandemic on the education process, some authors make a distinction between emergency remote education (ERE) and remote education. ERE can be distinguished from remote teaching in that ERE reflects a sudden and unplanned shift of classroom-based courses to a remote education model (Shim & Lee, 2020). Therefore, moving all students and all teachers to distance education at the same time in an emergency situation is different from organising it for interested students and well-prepared teachers. Moreover, remote education has always been an alternative and flexible option for learners, while ERE has become an obligation (Bozkurt & Sharma, 2020). Educators should also take into account the affective aspect of ERE. Namely, ERE emerged from the context of the pandemic, characterised by anxiety about an unknown situation and the shared experience of “emergency” (Green et al., 2020). Therefore, even greater efforts were called for in meeting the social-emotional needs of children and implementing trauma- and healing-informed practice (Darling-Hammond & Hyler, 2020).

However, the pandemic has not only affected the mode of education; it has caused disruption to all aspects of the educational process by changing the learning environment, introducing new tools, changing the roles of educational participants and expanding the education community (Jovanović et al., 2021). Moreover, pandemic-related experiences have changed over time, both in content and valence. For example, a study by Sokal et al. (2020) demonstrated that while teachers in Canada had positive attitudes towards COVID-induced changes in education in the early stage of the pandemic, in the following months such attitudes became less optimistic. Mičić et al. (2021) showed that in the initial stages of the COVID-19 pandemic, teachers' concerns in Serbia were mostly related to immediate health dangers, frustration, and pressure, while in the later stages concerns related to the quality of education became predominant. This intensive dynamic of the educational landscape during the pandemic was recognized as one of the key features of ERE.

Equity in Emergency Remote Education

Despite attempts to frame COVID-19 as the “great equalizer,” it is

becoming increasingly clear that historically marginalized communities are being disproportionately impacted by this crisis (Azavedo et al., 2022). Namely, although remote education has the potential to contribute to reducing some of the financial costs for students, improving the availability of content, and responding to students' preferences by introducing different materials and ways of communication, current research suggests that not only do these approaches fail to address inequity, but they may even worsen it (Mehta & Aguilera, 2020).

Children from Roma communities are particularly at risk when it comes to quality education. For example, in Ukraine, 20% of Roma students compared to 1% of students from the general population did not take part in remote education (UNESCO, 2021). Korunovska and Jovanović (2020) estimate that distance learning measures leave more than half of Roma children out of school and will likely lead to an increase in the already high dropout rates among Roma students, since many distance learning activities rely on supplies Roma children do not usually have access to at home. The low socio-economic status of the major part of Roma families is an obstacle to the e-learning readiness of Roma students, including a lack of equipment and poor internet connection, low digital literacy, and limited school supplies (Bešter & Pirc, 2020; Ezra et al., 2021). Moreover, certain aspects of the home learning environment, such as overcrowded housing, might influence home-schooling efforts in times of school closure (Dietrich et al., 2021). Limited access to devices and the internet among Roma families has resulted in less frequent communication between schools and Roma families during the pandemic (Korunovska & Jovanović, 2020). The fact that Roma students are frequently not fluent in the language in which they are taught further adds to the communication barrier. Moreover, ERE relies heavily on student's learning regulation skills and/or parental involvement in education, which is frequently an obstacle in less educated families (Csonka-Stambekova, 2021). These factors resulted in lower participation in ERE, less frequent contact with teachers and greater learning loss among Roma students in comparison to their non-Roma peers (Bešter & Pirc, 2020).

The presented data indicate the need, now more than ever, to understand the reality of students affected by existing inequalities in education, and to focus on how these students are affected by sudden transitions to ERE (Ezra et al., 2021).

Emergency Remote Education in Serbia

School closures in Serbia were introduced in mid-March 2020 along with restrictive lockdown measures. Pre-recorded lectures for each grade were broadcast via public TV each day, according to a predetermined schedule and with rotating teachers for each subject. The quality of TV instruction varied among teachers (Đorđić et al., 2021), including different levels of support for non-cognitive aspects of students' learning (Plazinić, 2021). TV instruction was complemented by teacher-led instruction via distance learning platforms or social

media, chosen and organized according to teachers' decisions (MoESTD, 2020).

According to the Ministry of Education in Serbia (2020), 99% of primary and secondary school students were included in some mode of ERE. However, a significant percentage of students from marginalized groups were reportedly left out of ERE (Institute of Psychology, 2020). Roma students proved to be at the highest risk of exclusion from ERE, with 56% of Roma students following TV instructions, 27% receiving alternative modes of education, and 17% without any mode of education. The most prevalent obstacles were limited technical resources, low levels of digital literacy among students and parents, and poor learning motivation (Institute of Psychology, 2020). Starting from the 2020/21 school year, education was mainly in-person or via a hybrid mode, with classes split in two in order to reduce the spread of the virus. Teaching modes changed at national, school district or school level depending on the epidemiological course of COVID-19.

Method

The Aim of the Study

The aim of the study is to provide a portrayal of emergency remote education (ERE) in Serbia from the perspective of the most disadvantaged students.

Study Design

The study applied a single-case study design aiming to explore the experiences of a Roma boy and his family in the context of emergency shifts in educational policy and practice. A qualitative case study design was combined with ethnographic approaches to data collection and analysis (Creswell, 1998; Denzin & Lincoln, 2000; Yin, 2003).

The Case Study Background

Since October 2019, a group of psychology and pedagogy university students and teachers from the Faculty of Philosophy in Belgrade (support team) have been providing learning support to a Roma boy – Bekim.⁴ At that time, Bekim was attending the 5th grade of an elementary school in Belgrade. Bekim is shy and quiet; likes playing football and dreams of becoming a football player. Although he has poor working habits, and low levels of reading literacy, he is persistent, hardworking and responsive to educational support. Feelings of success and accomplishment are important drivers for Bekim.

I feel proud if I receive a good grade, if I try hard, if I solve a task or give an answer to a difficult question. (Interview with Bekim, July 2021)

⁴ The name was changed to preserve the anonymity of the participant.

Bekim lives with his parents in a flat set in a dilapidated building, without essential living conditions (e.g. hot water). Extreme poverty is linked to inadequate food intake and poor dietary quality, as well as to a shortage of clothes and school supplies. The boy's mother works at a flea market, selling second-hand goods, and collecting recyclables. Since they do not receive social benefits, there is no stable source of income.

I manage with my own resources. I haven't received anything from anybody. Once I asked for financial support from the social welfare office, and only after a few months did I receive a one-time aid of ten thousand [dinars]. We don't have child allowance or social assistance, because we don't have papers [documents]. (Interview with the mother, January 2022)

The mother's ill-health is affected by poor living conditions and inconsistent health care. Due to her lack of education, the mother is not able to support Bekim's learning.

I cannot understand his schoolwork. When he encounters a problem, we [parents] are not able to help him. (Phone conversation with the mother, September 2020)

The father is supportive of Bekim's learning, but he is frequently absent due to work arrangements in different cities.

Generally speaking, the school management is supportive and oriented toward providing both educational and material support for students from disadvantaged backgrounds. On the other hand, the teachers differ in their readiness to adjust the teaching process.

Only the English teacher gave me adjusted homework assignments to do for a mark, while the others [pupils] did something else. (Interview with Bekim, January 2022)

Bekim is now attending the 7th grade, and has not yet decided which high school he will enrol in.

Data Collection and Analysis

Ethnography is often portrayed as multi-stranded, thereby providing for triangulation across different data sources. To this end, we combined different data collection techniques: interviewing the participants - both Bekim and his mother, prolonged observations of Bekim in a natural setting, and artefacts which were continuously produced or collected across the time-span. The collection of the artefacts included participant-observations, anecdotal notes, the content of the support team's Viber group, and artefacts from the learning/teaching process (e.g. homework, assignments on Google Classroom). We collected the data from October 2019 to February 2022, which we then consolidated to develop a narrative account of Bekim's education-related experiences during the pandemic. The

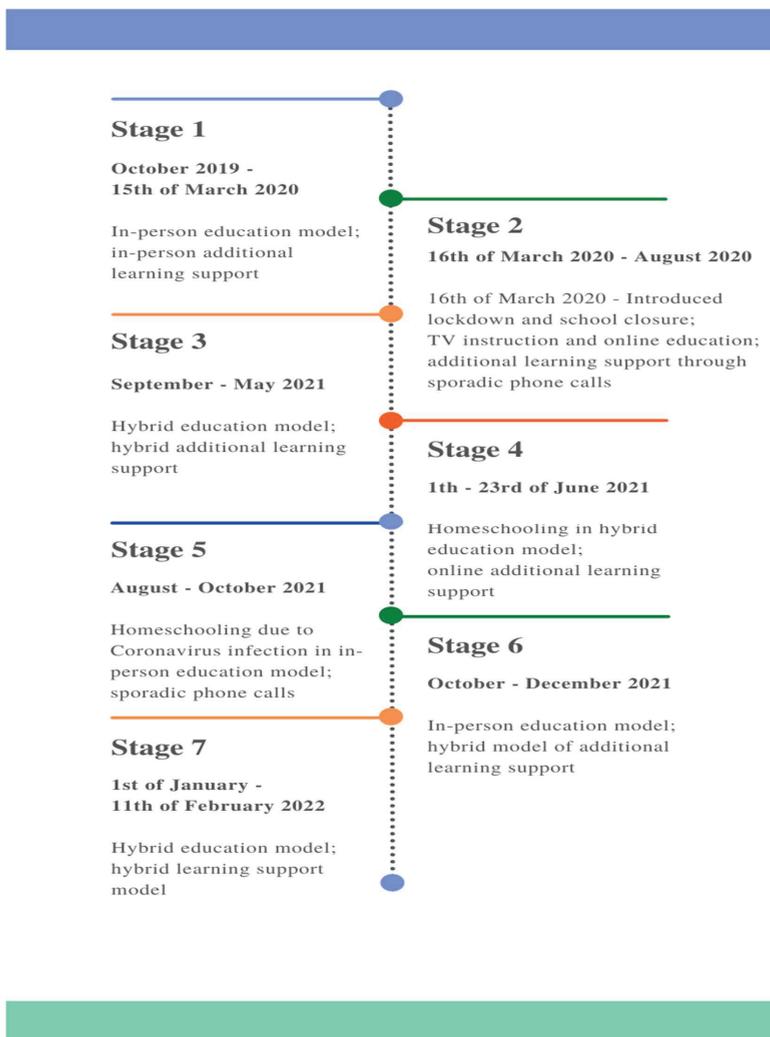
data analysis was inspired by event structure analysis (Corsaro & Heise, 1990; Griffin, 1993; Heise, 1989). In the first step of the analysis, critical events were identified and sequenced in chronological order, allowing us to discuss possible causal connections between them. We interpreted the constructed chronological sequence of the events in the next step of the analysis in order to infer causality.

Obtaining a wide range of data greatly facilitated the analysis. It enabled us to validate some interpretations, and to gain a broader and a more in-depth account of Bekim's experiences of education during the COVID-19 pandemic.

Findings

Based on the narrative data, we identified critical events and organised them chronologically. Since the identified critical events (e.g. Bekim lacking the devices and internet connection to access online teaching) reflected the effects of the official measures and recommendations regarding the pandemic, we have interpreted them in the context of ERE stages (Figure 1), emphasizing the key challenges and the support the student needed at that time.

Figure 1. *Stages of ERE and learning support provided to the student.*



Building Rapport (October 2019 - 15th of March 2020)

The researchers started working with Bekim in October 2019. At the time, he had just started the 5th grade, was assigned a new form teacher, and faced more demanding subjects and new teachers with different conceptions of teaching. Bekim described this as a *tough period*, in which he felt that he *cannot fulfil teachers' expectations*. At this stage, his form teacher described Bekim as a *kind student who has poor study habits and lacks motivation for learning*.

We organised learning support twice a week in the faculty premises, initially

aiming at building a rapport and understanding his strengths and support needs. Access to school supplies was ensured, and learning sessions would always start with a meal (a practice which remained throughout the course of the support).

Due to his focus on tasks, cooperativeness and readiness to make an effort to master the materials at hand, the university students described Bekim as someone who was *easy to work with*. Based on his regular attendance at the sessions, and the feedback received from his form teacher and mother, Bekim enjoyed the learning support sessions. By the end of this stage, the striking incompatibility between the school's demands and Bekim's competencies had become obvious - while the school expected Bekim to learn the same content and do the same assignments at the same pace as his classmates, he was struggling with basic skills (e.g. reading and writing) which caused him to lag behind his classmates. Awareness of one's own poor performance in comparison to others may result in loss of self-esteem, and even disengagement from school. Namely, research shows that students from marginalized groups often "disidentify" with school, i.e. detach their self-esteem from their school performance in order to protect their global self-esteem, which results in impaired school performance (Osborne, 1995). For Roma students, poor performance additionally threatens to confirm the negative stereotypes teachers have about them (Jovanović, 2018).

Distance (in) Learning (16th of March - August 2020)

School closures on March 15, 2020 meant that remote education was predominantly organised through TV instruction broadcast on national television, and supplementary information and materials provided by teachers via online platforms, Viber groups or phones. Due to the lack of internet and device access at home, during this stage Bekim was not participating in ERE. Moreover, a communication breakdown between his family and the school had left Bekim completely cut off from ERE.

No one from the school asked if I had the necessary preconditions for remote education. (Interview with Bekim, January 2022)

Bekim's mother described how tense family members were during the lockdown due to the novelty and uncertainty of the situation. She had hoped for encouragement and reassurance from school staff:

It would have meant a great deal to me if I had received any support, even if it was just to overcome fear. I would have appreciated any kind of support at that time - advice, presence, to have someone to talk to - since I had to do everything on my own, for myself and for Bekim. (Interview with the mother, January 2022)

The sudden loss of the structure and routine previously rooted in schooling resulted in disruptions to Bekim's bed and wake-up times. Moreover, he described experiencing a myriad of negative emotions during this period.

I felt awkward, but in a negative sense. It is hard for me to explain. (Interview with

Bekim, January 2022)

At this stage, the mandatory lockdown measures led to the flea market closing, leaving Bekim and his mother without any earnings and, consequently, without some of life's necessities. Having to prioritise what their scarce resources should be spent on meant that the possibility for Bekim and his family to acquire the needed equipment for him to participate in ERE was further diminished:

At that time, everything was closed and I did not have the possibility to work, but we needed money for food and other essentials. I couldn't work and I could hardly provide him with anything. (Interview with the mother, January 2022)

We needed some time to adapt to the new circumstances, therefore the support we provided Bekim with at this stage was only sporadic, via the phone. Our aim was to maintain communication with Bekim, but also to support him emotionally in coping with the situation. Being left out of ERE and without additional learning support negatively influenced the continuation of his skills' development and his integration into the class, resulting in a widening of the gap between his knowledge and that of his classmates.

Between Two Worlds (September 2020 – May 2021)

With the beginning of the new school year classes were split in two, with students shifting between in-person and online instruction on a weekly basis. After 6 months out of school, Bekim had difficulties re-establishing daily routines and adapting to the changing schedule. As a consequence, he was not attending classes regularly.

Sometimes I overslept online classes because I didn't have to go to school [facility]. (Interview with Bekim, January 2022)

Re-establishing daily routines, but also gaining access to learning resources, a more adequate learning environment, and teacher support during learning, were the reasons why the support team advocated for Bekim to attend in-person classes all the time. This request was declined by the school, due to the class size policy.

At the beginning of the second semester, the university staff provided Bekim with a computer and internet access, but he still had difficulties participating in online teaching activities due to low digital competencies and an uncondusive learning environment at home.

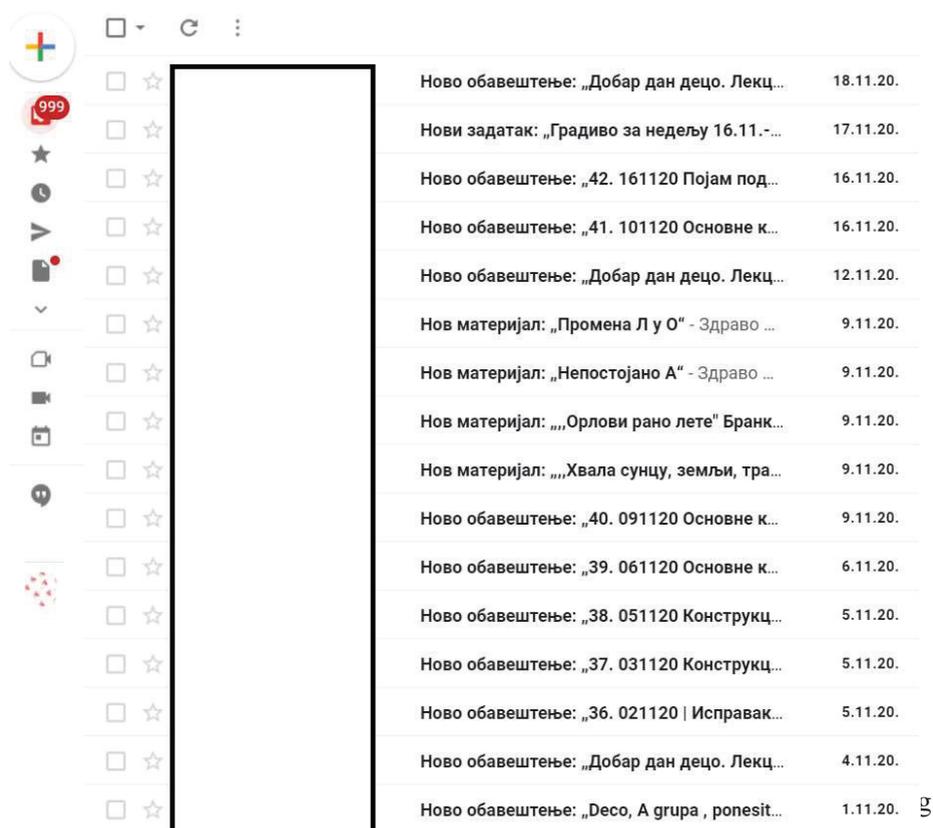
I like it more when it is in-person. If I have difficulties grasping the content, I can ask the teacher to help me. I can't hear the teacher very well during online classes because of the noise in the room. Sometimes the lecture is interrupted due to poor internet access. This really made me mad. (Interview with Bekim, January 2022)

It was really hard for me to follow [online], the hardest thing for me was to do the tasks because they didn't explain them. (Interview with Bekim, September 2021)

To ensure continuity of learning for the whole class, at the beginning of the

school year, the school had introduced Google Classroom as a comprehensive communication platform and repository of learning materials. However, due to lack of access to digital devices and the internet, coupled with low digital competencies, Bekim only started using Google Classroom at the beginning of the second semester. Therefore, during the first semester, he did not have access to online classes, online materials, or information on online homework assignments. With help of the support team, he installed the required applications and started learning how to access and use Google Classroom. The amount of content and number of activities he had skipped became visible when we started his Gmail account (Figure 2), resulting in him being overwhelmed with the number of new materials which needed to be mastered. With different modes of communication, changes in the mode of education on a weekly basis, and the lack of structure in Google Classroom, Bekim and his parents had difficulties finding the relevant information and planning his learning, which exerted an additional negative impact on his learning motivation.

Figure 2. Google Classroom notifications on Bekim's Gmail account.



support, as well as online (hybrid mode) twice a week, and that was the only time Bekim was learning. Since he was lagging behind even more in basic reading, writing and computing skills, the learning sessions alone were not sufficient to mitigate the learning loss. Although he invested effort during the learning sessions, this was not always recognized through his grades, which made him dissatisfied and unmotivated. He needed support in maintaining regular school attendance, study planning and ensuring basic school supplies and textbooks. Because of the pandemic, we also brought up issues related to health, such as the importance of hand washing. Bekim refused to wear a winter jacket as the one he had *was too big for him*, resulting in frequent colds. Each time he became ill, that kept him away from school and the support sessions for a few days, and he thus fell even further behind. As the second semester progressed, the support team mentioned his hard work, persistence and commitment during sessions more often.

Communication with his parents became more frequent at this stage. Since his father was more present at home, he actively supported Bekim's learning. The family's scarce financial resources were still a major problem, leading to food insecurity.

Due to the lack of internet access, for a long time Bekim had only intermittent contact with his peers via the phone. With the hybrid mode of education, these social ties remained weak leaving him without social and emotional support from classmates. Moreover, the support team and his family became important parts of his social support network.

As far as I understand the form teacher, he is not a member of the class Viber group, which would also be of great benefit to him, to keep up to date with events because, for example, today and the other day he did not show up at school for scheduled written examinations in the Serbian language and Mathematics, and when it was already too late, his mother called the form teacher confused about whether he should go to school or not. (School associate-support team communication, email, April 2021)

Bekim was worried that you had forgotten about him, since you did not call last week. (Phone call with the mother, April 2021)

The support team was in contact with the school associate during this period. The school associate had been informing the teachers of Bekim's needs, and advocated for learning adjustments. However, individualised school support in this period was non-existent, limiting Bekim's ability to exercise his right to quality education and participation.

Bedschooling (1st - 23rd of June 2021)

The hybrid education model was in place until the end of the school year, but throughout June Bekim was homeschooled since his leg was immobilized due to a fracture. The problem of access to medical care arose, since his mother did

not have the means to take Bekim to the doctor. The communication between the support team and school was more intense in this period, with the aim of aligning efforts towards his completion of the 6th grade. Although the teachers were willing to adapt schoolwork to the current situation, some of the adjustments did not fully take into account Bekim's digital competences and his living conditions (e.g. making a 3-D paper model for a final assignment). Additionally, online support was challenging for some of these tasks (e.g. making drawings of agricultural machines). Therefore, at this stage the support team was predominantly involved in clarifying instructions, helping Bekim to plan his learning, and supporting the use of online tools. The team also encouraged the family to support Bekim's persistence by acknowledging his efforts. Despite making every effort during the sessions, the pain in his leg, coupled with missing classes, further contributed to his lagging behind the class. After three weeks of intensive additional support, Bekim completed the 6th grade. However, this period highlighted the challenges of providing adequate scaffolding mechanisms which facilitate online socialisation and deep learning during remote education (Bryceson, 2007). This is particularly important in the case of students from disadvantaged groups, since a highly challenging learning environment, such as the school environment, coupled with a lack of support due to homeschooling, is likely to result in failure and loss of motivation (Hammond & Gibbons, 2005).

Homeschooling, again (August - October 2021)

Aiming to acknowledge Bekim's persistence and effort at the end of the 6th grade, the support team organised a one-day trip to the zoo in August. At the beginning of the 7th grade, the school developed an individual education plan (IEP) for Bekim. Having an IEP, he was entitled to free textbooks, while the support team provided other needed resources (e.g. school supplies, clothes, shoes). Due to the coordinated actions of the school staff and support team, Bekim had all the resources needed for learning and attending classes. As Bekim broke his arm in late August, the beginning of the school year was characterized by his irregular attendance. The team supported active parental encouragement of Bekim's study habits and school attendance. However, contracting the coronavirus led to another bout of homeschooling, and learning support again shifted to the phone and online mode. The support team ensured an internet connection and helped Bekim to sign up for the year's subjects, so this time he had all the requirements for homeschooling. Nevertheless, the aforementioned health conditions contributed to him, once again, losing pace with his classmates. Since his mother also contracted the virus, the family relied on a support team to supply food, medications and dietary supplements, thus underlining the need of families from vulnerable groups for integrated support by educational, health and social welfare systems.

Trying to catch up with the class (October - December 2021)

In the 7th grade, Bekim was assigned a new form teacher and, according to his mother, *they hadn't established good communication and he preferred missing classes*. The teachers shared information with the support team on the requirements he had to fulfil. Although Bekim was receiving education according to IEP1, no adaptations were visible.

Due to huge learning loss in comparison to his peers, Bekim lacked motivation for learning. He showed more difficulties concentrating and got tired easily, therefore the learning sessions became considerably shorter. These factors caused Bekim to fall further behind his peers. He was still relying on the support team for information on upcoming activities and the organisation of his studies. To support Bekim's self-regulation, the team encouraged him to set goals for his learning, plan how to achieve those goals, monitor his learning progress, and to evaluate what was achieved. The support team continuously nurtured Bekim's functional attribution style as an important predictor of student achievements (Weiner, 1985). Consequently, in the self-evaluation at the end of the first term Bekim mainly attributed his academic progress to internally controllable and unstable factors, i.e. invested effort, which leads to higher expectations of future success and higher levels of persistence behaviour (Higgins & LaPointe, 2012).

His mother was proud of him since she had noticed that he was putting more effort into school learning, his skills in using technology had improved, and in certain aspects he had become more independent (e.g. waking up and getting ready for school).

I see that he is doing his best, more than before the pandemic started. (Interview with the mother, January 2022)

However, Bekim's relations with his classmates were weakened due to his irregular school attendance.

Bekim has no friends, neither at school nor outside of it. If he needs something for school, he has no one to ask. (Interview with the mother, January 2022)

Since he did not feel a sense of belonging to the classroom community, he had become more oriented towards the support team where he felt accepted and positively valued, and therefore more motivated for in-person learning sessions. Poor connectivity and the uncondusive learning environment at home had also contributed to his preference for faculty facilities. The financial hardships at this stage were amplified due to the health needs of other family members, i.e. his brother.

Adjusting to the New Normal (1st of January - 11th of February 2022)

During the winter break, Bekim contracted COVID-19 for the second time, so he was once again unable to keep up with his peers. Communication between the family and support team took place on a daily basis. The issue of the family's

financial resources came into focus again, and his parents relied on the support team to provide food and clothes for Bekim. After his recovery, Bekim was motivated to attend learning sessions.

During the second term, both hybrid education and hybrid learning support were in place. Bekim still relied on the support team to organise his learning (e.g. inform him of upcoming activities, or remind him of tasks and deadlines). Once again, the question of sleeping routines arose, since his sleepiness affected his engagement during the sessions. However, he was motivated to learn and attended school classes and learning sessions regularly. At this stage the support team strategically focused on Bekim's functional skills, particularly reading comprehension, since it had the most potential for progress in all subjects.

Discussion

In light of the social complexity and diversity of the contemporary era, equity in education is recognized as a key objective of educational systems across the world (Ainscow, 2020). The central role in the enactment of equity policy is assigned to the school (Keddie & Niesche, 2012). Based on the data collected, we argue that the school's role in supporting equity was significantly disrupted during the pandemic, leaving students from disadvantaged groups on the outskirts of ERE. The findings suggest that the pandemic had a substantial negative effect on the school's role in meeting learners' basic needs, supporting students' learning, structuring students' everyday activities, and engaging students in positive social interactions.

One of the equity-related roles of a school is to support students' learning through continuous monitoring and individualised adjustments of the educational process, thus ensuring each students' progress in mastering the required competencies. This role was severely disrupted during the pandemic due to a communication breakdown between schools and students from disadvantaged groups (Korunovska & Jovanović, 2020). In Bekim's case, not only was he not provided with additional support for distance learning, but neither the administrative staff nor the teachers were aware that he had no access to online education. Due to Bekim's exclusion from ERE in the first stage, and the lack of an individualised approach in the later stages, he fell behind.

In addition to institutional support, the pandemic also highlighted the importance of school as the place for students' mutual support through peer communication and collaboration. Research shows that children derive social capital from both their families and their schools and that the capital from each context promotes achievement (Dufur et al., 2012). Having no access to devices and the internet meant that Bekim was excluded not just from online education, but also from his peer community, affecting his sense of belonging, leisure time,

but also his access to information about schooling. Even in the later stages, online teaching was dominated by frontal teaching and individual assignments, limiting opportunities for peer interactions.

Schooling also plays a role in developing students' daily routines and habits. However, ERE led to the discontinuity of students' daily experiences, the evaporation of peers who serve as models of identity development, and the absence of compulsory time within the school institution. This had a negative impact on Bekim's daily routines, particularly since Bekim's parents exhibit low levels of structure and demandingness within the family context.

Finally, schools play a role in recognizing students' unsatisfied basic needs and providing support. This support may have different forms, such as crowdsourcing, advocating for students, or even signalling risk situations to child services. In the context of the pandemic, the school's role in responding to the social, economic and labour needs of local families became prominent (Costa et al., 2022). Since Bekim's parents derived their income from the informal sector, which was disproportionately affected by the pandemic (Azavedo et al., 2022), this led to food insecurity in Bekim's family. The disruption in the school's provision of material support (e.g. clothes, food, school supplies), further exacerbated their material insecurity.

This study offers further evidence to support scholars' claims that the pandemic has negatively affected the equity of education (Azavedo et al., 2022; Mehta & Aguilera, 2020). The findings suggest that, particularly in the initial stages of ERE, those who needed additional support were, paradoxically, left without any support. As a result, these students experienced accumulated educational disadvantages during ERE, affecting their progress in skills and knowledge, building relationships and developing a positive self-concept. Therefore, instead of the role of facilitator of the social inclusion of students from disadvantaged groups, the role of education became one where stratification between students was amplified.

The interruption of schooling highlighted how important teachers and schools are in offering learning support, and to what extent equity of education depends on the ability of schools to carry out their roles effectively. Several recommendations for policy and practice can be drawn from the results.

Since the pandemic had social, political, economic, and health implications, we need to acknowledge that educational support is necessary, but not sufficient, to ensure continuity in the learning of students from disadvantaged backgrounds during ERE. Joint efforts on the part of the education system, and social and health protection services are needed to ensure equitable outcomes of disadvantaged groups of students (Azavedo et al., 2022).

This case-study shows that the shift from school-based to home-based education led to a change in the social, emotional, physical and cognitive context in which school learning took place, resulting in major differences in

educational progress caused by inequalities. Children from homes with fewer resources and opportunities for parental support risk falling behind (Thomas & Rogers, 2020). This case clearly illustrates that universal policy solutions in the emergency context do not respond to the needs of all students, particularly those of students from disadvantaged backgrounds and their families. Therefore, as we move beyond the survival phase of remote education, it is now critical to purposefully approach the transition to a thriving phase of remote education with such inequities in mind (Hartshorne et al., 2020). It is also vital to recognize that this group of students will need further support to reintegrate into schools once the learning process is fully normalised.

Although this study offers some insight into the educational experiences of disadvantaged students during ERE, it is not without its limitations. As with all case studies, the findings from this research cannot be generalized to other cases and contexts, but the observed concepts and processes can (Popadić et al., 2018; Vilig, 2013/2016; Yin, 2014). The findings represent one Roma student's experience of ERE, which was shaped by contextual factors, including available learning support. Given this limitation, it would be desirable to conduct similar studies with several distinct cases (Vilig, 2013/2016).

Another limitation stems from the emergency nature of the study, with the researchers motivated to capture the uniqueness of the moment. The timely and comprehensive data collection was, however, affected by the uncertainty regarding the flow of the study. The project initially aimed at providing additional educational support for students from marginalized groups. As a response to the sudden shift towards ERE, the support team decided to reframe the goals to reflect the complexities of the new context and to produce actionable findings. Due to the lack of a specified theoretical framework and/or research aim at the beginning of the study, the approach to data collection was inductive and iterative, hence sometimes insufficiently systematic.

Final remarks

Our aim was to gain in-depth analysis and understanding of the educational aspirations and experiences of marginalized students during the pandemic, but at the same time to highlight learning and living in disadvantaged contexts. However, when we interviewed Bekim, we were surprised by the stark contrast between his impoverished statements to the wealth of experience he brought to the learning sessions:

It was surprising, he gave poor answers, sometimes even contradictory ones, he would omit to mention some situations we had previously discussed ... (Support team, email, September 2021)

He has difficulty describing his own feelings, or describing which aspects of the

situation were positive and which were negative. He was prone to give general answers, with positive valence (“everything is fine”), although previously in conversations he had mentioned how the unstable internet connection made him angry, how he felt angry when the teacher didn’t recognize his efforts, how sad he was because his peers excluded him... (Anecdotal note, January 2022)

His experiences translated into a restricted language code (Bernstein, 1964; Payne, 2019), becoming impoverished and impersonal. Additionally, the experience of being marginalized through multiple minority identities – a child, Roma boy, socially deprived boy – has not empowered Bekim and his family to challenge the system. On the contrary, we could even recognize system justification tendencies in their answers (Jost et al., 2004).

What could we do to support you?

Nothing, school and you have done everything great, it is up to me, I have to be better, to invest more effort. (Interview with Bekim, January 2022)

Therefore, the ethnographic data we collected during prolonged observation in everyday living activities became even more important, going beyond what was observed, incorporating subjective meanings, values and perceptions (Danaher et al., 2013). Consequently, we were able to describe (a small part of) the experiences of Bekim’s family during COVID-19, to analyse them in the context of different ecosystems, and to understand them through the lens of educational science and policy. Moreover, we were able to communicate these insights to others who are interested in education, particularly that of marginalized groups, and they had the capacity to listen to us and understand us – since we talk the same language and have the same position. Hence, this approach allows the researcher to mediate between marginalized groups and institutional stakeholders. Moreover, we hope that through developing more general, functional skills and through encouraging their active engagement in education, children from marginalized groups will also recognize and challenge the roles power and privilege play in systems (Bell, 1997).

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SPECIAL EDUCATION AT THE SECONDARY SCHOOL LEVEL IN GREECE DURING THE PANDEMIC TIME: A CASE STUDY OF ENEEGYL KATERINIS

Abstract

The education of people with disabilities in Greece is of an inclusive type. The goal of any inclusive educational system is to provide equal opportunities for the acquisition of knowledge and skills for all students, with full respect for their specific individual educational needs. Even in regular conditions, the application of inclusion in educational practice encounters numerous obstacles and difficulties. In the conditions of the Covid 19 pandemic, which we have been experiencing for the last two school years, the difficulties in the implementation of inclusive education are even more pronounced and increased. In this paper, we present a case study conducted at the secondary Special Vocational School (ENEEGYL Katerinis) in Katerini. While it is well known that online teaching can be an extremely useful teaching tool for students with disabilities, the pandemic in Greece has shown us that we are not sufficiently prepared to put it into practice. The reasons for this are numerous and varied, but based on a qualitative analysis of the results, we can classify them into several main categories: 1. Technical and economic Reasons, 2. Educational Reasons and 3. Psychological Reasons. In this paper, we will try to present briefly how special education at the secondary level in Greece functioned during the pandemic and which new aggravating factors in working with people with disabilities were clearly demonstrated in these specific working conditions.

Keywords: special education, pandemic Covid 19, online education

Introduction

The unexpected and long-lasting COVID-19 pandemic we have been experiencing for the last two years has changed our lives in many ways, affecting the functioning of health, economy and education systems around the world.

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According to Bao (2020), the educational process for the first time in history became the largest online educational practice. Since special education in Greece as in the whole world has also been affected by the pandemic, our first objective is to describe the organization and functioning of special education in Greece in order to provide clarity to the difficulties we encountered. Special education in Greece is compulsory and operates as an integral part of a free public education. According to the law 3699/2008 “Special Education and Training” is the set of educational services provided to students with disabilities and identified special educational needs, for the purposes of pre-school, primary, secondary, tertiary, non-formal and lifelong learning (Law 3699/2008 - ΦΕΚ 199/Α/2-10-2008). It seeks to develop students’ personalities and to make them as capable as possible for autonomous participation in professional, social and cultural life. The above goals are achieved by the timely diagnosis and inclusion of the child in one of the Special Education Programs (Law 3699/2008 - ΦΕΚ 199/Α/2-10-2008). Special education students include: 1. those who, for the majority of their school life or for an extended period, demonstrate significant learning difficulties as a result of sensory, mental, cognitive, developmental problems, mental and neuropsychiatric disorders, etc., which, according to the interdisciplinary evaluation, affect the process of school adaptation and learning. 2. Those who have complex cognitive, emotional and social difficulties, or who show delinquent behavior due to parental neglect and abandonment, as well as those who experience domestic violence. 3. Those with one or more mental abilities and talents developed to a degree that far exceeds what is expected of their age group.

There are different special education structures under the Ministry of National Education and Religions of Greece that students, depending on the type and degree of special educational needs, can attend. ENEEGYL Katerinis (special vocational school in town of Katerini) is Special Education School Unit of secondary level where this case study was conducted. Special vocational schools of secondary education in Greece, if they are not specialized for sensory problems, are attended by students who can belong to all the aforementioned special categories (except the abovementioned category 3.). That diversity makes the work of teachers particularly difficult, because the inclusive teaching means recognizing, accommodating and meeting the learning needs of all students. It means acknowledging that students with disabilities have a range of individual learning needs and that they are members of diverse communities. Realization of goals of students with disabilities education is based on the differentiation and individualization of teaching (Bjekić et al., 2012). So, even in usual form of teaching, in the classroom, the teachers have to make differentiation, to set individualized goals and use different techniques to achieve the goals set for each student at the same time. In each class there are between 5 and 9 students of the same age, all belonging to a category of learning disabilities arising from various causes (autism, slower cognitive functioning, emotional and behavioral difficulties

or mental and neuropsychiatric disorders etc.). In fact, that means that every teacher has to cope with finding the best and most creative way of learning for each student, using multi-sensory approach, learning styles, structured teaching, experiments, pictures, graphs, videos, text, but also nonverbal communication, prosody, emotional bonding, different type of consequences (rewards and penalties) etc. Individual learning existing in a diverse, heterogeneous small group in the class is possible only if the teacher is well prepared for differentiation and individualization of teaching, but also knows well the peculiarities and appropriate approaches for each category of learning difficulties.

Information and Communications Technology (ICT) and Special Education

According to UNESCO (2011), the education of students in ICT is an invaluable tool for the education of people with disabilities, and therefore access to digital infrastructure must be and remains a strong goal over time in order to achieve the best possible results. Nowadays, the increased use of ICT in everyday life and development of adaptive hardware and software have allowed individuals with disabilities to do things that were difficult or impossible for them to do in the past (Fichten et al., 2009). But, using ICT in special teaching is not an easy matter. Basic necessary condition for using ICT means change of the teacher's role and acquiring of new competences. They have to apply new teaching elements and roles (active facilitation, coordination, management, tutoring), and new assistive teaching technology and e-learning technology (Bjekić et al., 2014). There is a necessity of interdisciplinary approach to developing e-learning environment for students with disabilities (such as educational technology, learning theories, e-learning models and approaches, e-inclusion, universal design, participatory design (Guglielman, 2010). Creative teaching with use of ICT is possible offering creative and instructional support to students with disabilities, using ICT help to develop alternative and compensatory strategies, which leads to the realization of established goals in their daily and academic activities (Obradovic et al., 2015).

According to Bjekic et al. (2014), e-learning and education in an e-environment are beneficial for students with disabilities, providing peer support through the use of computer-mediated communication tools and enhancing accessibility and the ability of users – students with disabilities – to be proactive and self-reliant, instead of being reactive and dependent; to control the ability of learning; web-based education contributes to eliminating social isolation; enhancing peer-to-peer collaboration and social inclusion. By providing flexibility in time and space, distance education modalities can address the special educational needs of students, allowing them to progress at their own pace. Using multi-modal communication, or a wide range of e-learning communication technologies, allows the contents to be presented in more concrete ways. Asynchronous communication between students and teachers is

convenient for students with disabilities; “working from home” and controlling physical environment are two benefits (students are in a space adapted to their needs and well known to them, and also they can organize learning at a time that suits them best); hardware and software are adapted to the special needs of each student. There are some psychological barriers that arise, such as: a lack of guidance in how to use online learning content, a failure to relate to the user’s real life experience, a lack of awareness regarding learning disabilities, a failure to adapt to the user’s learning style etc. (Bjekic et al., 2014).

Pandemics and School Reality

Everything we spoke about using ICT in special education is right in ideal conditions, if the application of ICT is made in the right way, with interdisciplinary approach, and by teachers with ICT competences who are capable of making e-teaching scenario for each different category of disability that are suitable for each student’s needs, and the students have the technical equipment and assistance at home. Here is the point where problems arise. The difficulties that arose were many, regarding, first of all, the technical equipment of both students and teachers. Thus, teachers who faced difficulties of this type were given the opportunity to work from school, using school equipment. Unfortunately, for the students who had difficulty with technical equipment, the school was not able to provide assistance, as the school unit itself is not very well equipped, and additional equipment was and is needed. We also noticed not very high level of technological knowledge of many teachers in the school unit, which made the process of compulsory and rapid adaptation to the new and different educational process more difficult. Teacher’s education in ICT during active service is optional. By reviewing the certificates of employed teachers in the school unit, it became clear that approximately half of the teaching staff in the school did not have the opportunity to be educated for the advanced application of ICT in teaching. The reason for that is the fact that courses of this type organized by the Greek Ministry of National Education and Religion in the period 2014-2020 (<https://e-pimorfosi.cti.gr/>) were originally intended only for teachers of certain subjects. In the later period, the training was extended to all subjects, although the number of participants is limited, so there are still teachers who have not been trained at all. For those teachers who did participate in training courses, teacher’s knowledge test started only recently, and is still ongoing. So, when pandemic started, teachers were not adequately prepared. This is the main reason for the great difficulty in organizing and preparing distance learning courses. With a lot of personal effort of teachers and a small internal course within the school we organized, teachers quickly managed to move on to online teaching. It was the first time for almost all of teachers they had to make e-scenario for teaching. These difficulties, along with the different learning needs of students, are one of the main reasons for the predominant use of asynchronous learning by

teachers. Asynchronous teaching is defined as student collaboration with teachers in different time from the process of delivering the course or creating material by teacher. Students can access the educational material through Internet (on specific websites or platforms provided by Ministry of Education or by e-mail if there is difficulty in accessing the platform). This also means the absence of physical presence of teachers and schoolmates, which negatively affects the motivation for participating of students. Taking into account the aforementioned difficulties in special teaching and different learning needs of students, it becomes clear how important it is for the effective teaching to use active facilitation, coordination, management, tutoring etc. The role of the teacher is to make the use of ICT in teaching interesting, to add the elements of adventure, discovery and pleasure for the students. However, physical presence of teacher is especially important for students with disabilities, as students show more interest in learning and feel less frustrated in the event of failure when their teacher is present (Βοσνιάδου, 2006).

At the same time, on the other hand, we have to have students/learners capable and used to e-learning. In order for students with special educational needs to use ICT applications effectively, they must have developed specific cognitive skills (Campigotto et al., 2013). But, because of a small number of computers in the classrooms, there is no possibility of active participation of students in ICT for each subject in everyday life, so they couldn't practice it at school. Also, based on the curriculum, especially for younger high school students (gymnasium lasts 4 years), ICT classes start with only one hour of computer science per week in the first grade, and continue in the next three grades with only 2 hours per week which is obviously not enough knowledge and preparation for a complete transition to online teaching. For older high school students (lyceums also lasts 4 years), especially for those attending classes in the IT sector, the situation is much better. However, the transition to online teaching was not easy for them either. Another issue arose regarding parents with knowledge of ICT who could offer help to their children with special educational needs. The parents, in fact, were obligated to cover the role of personal assistant for their children without the possibility of any preparation for the acquisition of the necessary competencies.

In the initial stage of a pandemic, by decision of the Ministry of National Education and Religions of Greece, all special schools in Greece remained closed and operated with distance education (using both synchronous and asynchronous teaching) from March 11th 2020 to June 6th 2020. Asynchronous teaching is defined as student collaboration with teachers in different time from the process of delivering the course or creating material by teacher. Students can access the educational material through Internet (on specific websites or platforms provided by Ministry of Education or by e-mail if there is difficulty in accessing the platform). In the next school year (2020-2021), by decision of the Ministry of National Education and Religions of Greece, exclusively for the Special Schools, students and teachers returned to the schools (the mainstream education schools

remained closed and worked online). In the next period, the school where the research was done was closed only once for 15 days in November 2020, due to many cases of Covid in the school unit. Thus, recording the results describes these specific intervals, since distance learning was applied in those periods.

Because the implementation of this form of teaching at the given time was completely new and mostly unknown to our students and their parents, the school had to inform them and instruct their participation. This meant constant daily and continuous contact with students and their parents. Monitoring their active participation pointed to certain difficulties and problems. So we decided to apply a semi-structured interview in order to define the types of difficulties our students and their parents encountered.

Method

Research sample

Our research is a case-study. A convenience sample was used for the present study. Participants were the parents of the students at the Special Vocational School of Secondary Education from Katerini. The sample (77 people out of a total of 88) was collected after the written consent of the participants for the anonymous use of the research results. Eleven parents did not want to participate. The sample consisted of 79.8% female and 21.2% male participants. The choice of the sample to be made up of the parents and not of the students themselves was made to avoid errors in communication, understanding questions and/or inability to answer by the students themselves (students are diagnosed with a different types of disability and belong to categories: mild to moderate mental retardation, various syndromes, autism, learning disabilities, multiple disabilities, sensory disabilities, neurological problems, speech and language disorders, attention disorders and psychiatric diseases).

Research Tool

A semi-structured interview was designed for data collection. The interview was designed and conducted by school psychologists. Based on many years of previous communication with parents and in order to avoid misunderstandings, we made sure that the questions were understandable and simple so that all parents could answer them. The interview included two parts: in the first part there were 6 questions related to the technology and the possibility of using it at home in relation to the lessons and workshops that their child had to attend online.

In the second part, there were 8 questions about the benefits, as well as possible problems and difficulties of e-learning for their child, based on personal experience they gained during the pandemic.

Data Collection Process

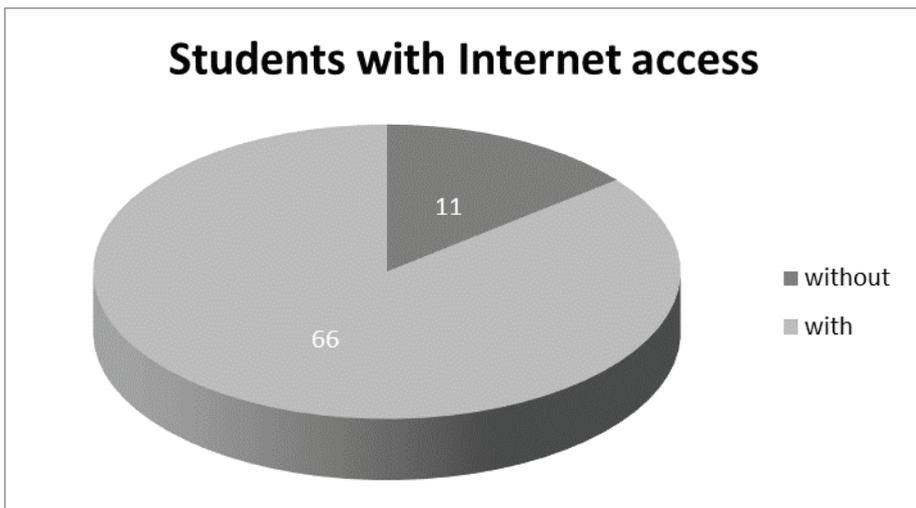
All those questions were posed to all parents. The questions were asked in the same order to each parent, and the answers, as well as the forms of non-verbal communication were noted during the interview, with the consent of the parents. Given the type of school, there is a specificity of the school-parent relationship. In the interest of children's progress, we often cooperate. So, most of the parents did not show any tension or anxiety during the interview. On the contrary, they were willing to cooperate and express their emotions and opinions about e-learning. The time required for each interview was approximately 30 to 40 minutes. Data collection lasted from May to December 2020 (excluding summer holidays). All participants gave us written consent for the anonymous use of the survey results.

Results and discussion

Here are the main findings of our pilot study.

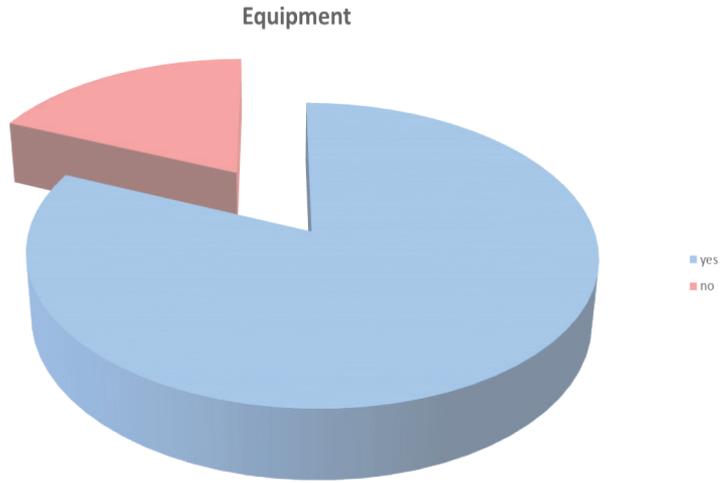
The first finding concerns the possibility of participation (availability of internet at home) in distance education by students (Figure 1)

Figure 1. *Students Internet access at home*



As can be seen from the Figure 1 part of the students with special educational needs (11 people out of 77) did not manage to have access to e-learning under the special conditions that occurred. In the majority, these are socioeconomically weak families. To our question about the existence of technological equipment of students suitable for online education at home (tablet, PC, laptop) the parents answered that 81.6% did have, 18.4% did not as shown below (Figure 2).

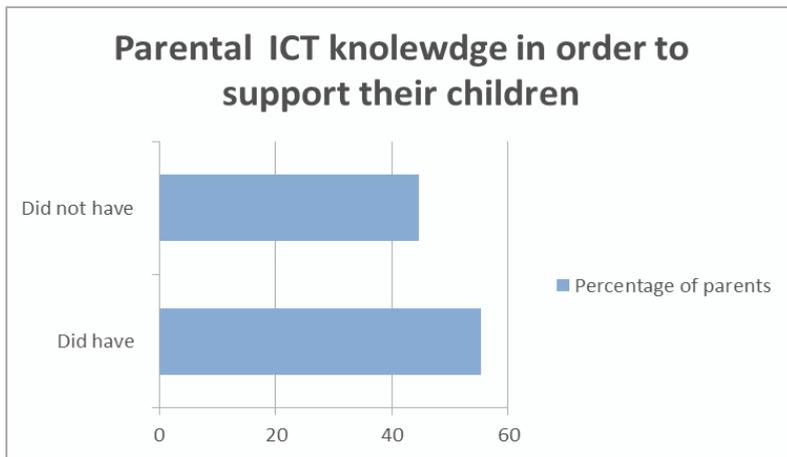
Figure 2. *Technological equipment of students suitable for online education*



In addition to the previous result, 52.5% of those who have equipment report that, necessarily, all family members share the same laptop or PC at homewhich is another limitation for timely inclusion in e-learning.

Our next result concerns the use of ICT in school. Ninety five percent of parents believe that more work should be done in the school to improve the knowledge and skills of students in this areain order to train them to use ICT independently. The following finding explains why this is important to parents. A large number of parents do not have the necessary ICT knowledge to be able to support and help their children to follow the lessons from a distance (Figure 3).

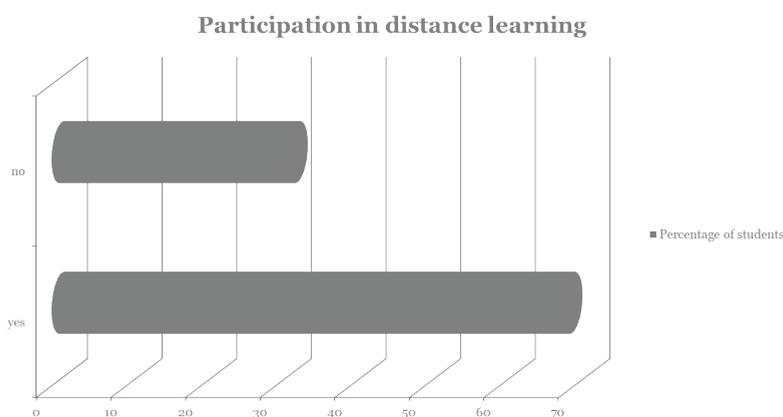
Figure 3. *Parental ICT knowledge to support and assist their children*



As seen in the Figure 3, a large percentage of parents, (44.7%) did not have the necessary ICT knowledge to be able to support and help their children in distance learning.

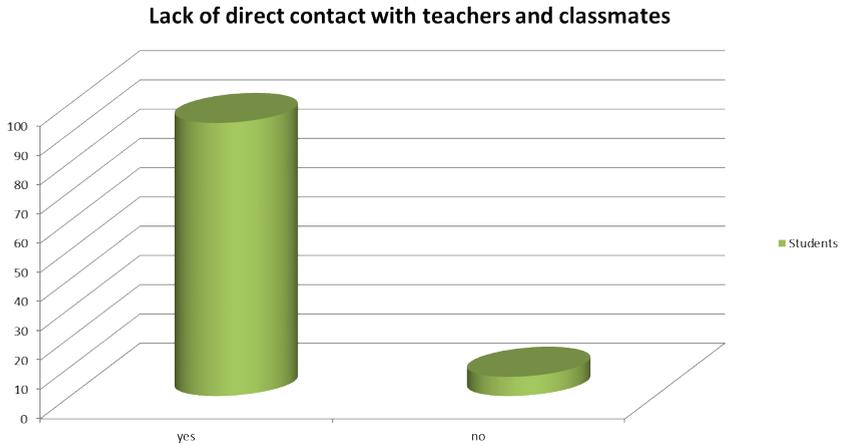
As evident on Figure 4, a large percentage of students of those who had technical equipment abstained from online teaching. Here it is worth noting that the participation rate of students was considered positive even if it was not daily, not for the full time every day, but also sporadic or for limited hours. This decision was made because there were also objective difficulties for daily use (as previously mentioned, 52.5% of those who have equipment report that necessarily, all family members share the same laptop or PC at home.) When we asked why the students did not follow the classes, the parents answered that the children were dissatisfied that the learning was primarily asynchronous.

Figure 4. *Participation in online learning*



It seems that the biggest difficulty for all students was psychological and related to their experience of social isolation. Based on parent's opinion, the main reason for non-participation of 31.6 % students was the lack of direct contact with teachers and classmates, since the teaching was primarily of the asynchronous type. Probably the same reason caused decline in active participation due to reduced student motivation over time which has also been noted. That is why we registered the lack of direct contact with teachers and classmates as the biggest difficulty for almost all (93.4%) students during the online teaching (Figure 5)

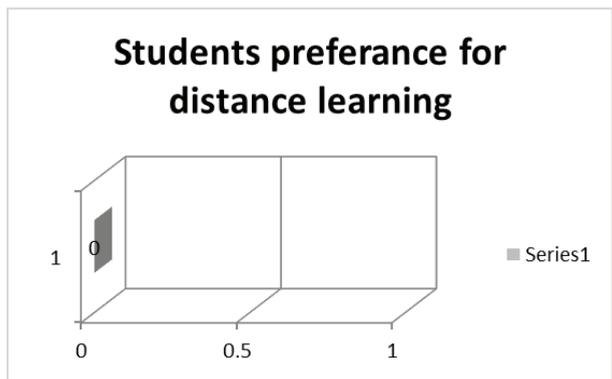
Figure 5. *The greatest difficulty for students during the distance learning was psychological and concerned the absence of teachers and classmates*



The following finding is probably related to the previous one (Figure 6). According to parents, the largest percentage of students prefers the classical form of teaching (92.2%). There is a possibility that this preference is caused by a lack of direct social contact. There is also a possibility that a sudden and unexpected change in the way of learning caused a negative attitude of students about e-learning (changes in the way of functioning for people with disabilities are not easy).

On the other hand, there are also a small percentage of students who prefer online teaching, according to their parents (7.8%). Students in second group belong to high-functioning autism and some psychiatric categories and their preference is probably related to the characteristics of the diagnostic groups to which they belong. These categories deserve more attention for implementing distance education even when we are not in an emergency situation like global pandemic.

Figure 6. *Student's preference for distance learning according to their parents*



So, qualitative analysis of our data showed the following: the main reasons for our unpreparedness for online teaching can be divided into three major categories: 1. technical and economic reasons; 2. educational reasons; and 3. psychological reasons.

Ad.1. Technological equipment of schools and students is the basic precondition for the realization of distance education, and there we have found a significant shortage. The school where the case study was conducted has only one PC per classroom. The only well-equipped classroom is for ICT teaching. The same problem students had at home. We had 11 students who could not even connect in order to participate in the e-learning process. For many students there was a problem of simultaneous attendance of lessons by brothers and sisters, while there was only one tablet or computer.

Ad.2.a) ICT competences of teachers and students. Teachers' education in computer science during active service is optional. In combination with a small number of computers in the classrooms, most teachers use ICT as a minor imaging aid in conjunction with classical teaching. There is no possibility of active participation of students in ICT for each subject in school. Also, the majority of students do not have the learning readiness required for distance learning, both in self-regulation and discipline skills and in certain academic and technological skills. The lack of guidance on the use of new technologies was evident in both groups. It was the first time for almost all of teachers they had to make scenario for e-teaching, but also first time for all students to participate in distance education. So, there is need for advanced ICT training for all of teachers as well as the need for a possible change in the curriculum. *b) ICT competences of parents.* The application of e-learning to students with disabilities at home, presuppose, in many cases, an individual assistant, with knowledge of ICT. In this case, the parents take on this role. This practically means that there is an urgent need for ICT training of parents with kids in the special education sector as well, so they can acquire ICT competences too.

Ad. 3. In addition to difficulties in understanding the offered teaching material, there were other parameters that caused fatigue and difficulties of students with disabilities in the e-learning process, such as difficulties in concentration and feeling of insufficient competence for independent learning. But greatest difficulty was a feeling of loneliness and isolation. For most of our students, the ICT contact they had with teachers and classmates during the pandemic was of extreme importance. There were a number of students who did not want to take a part in distance learning; they just wanted to have contact with other students and teachers. For the students with disabilities, school is the most important part of their social life, and this became clear, as the vast majority of parents described the absence of teachers and classmates as the greatest difficulty of the pandemic for their children.

Conclusions and suggestions

The present pilot research is the trigger for further research on the use of distance learning techniques for students with disabilities. The COVID-19 emergency was a first test for staff and students of special schools. The observations and experiences of students and parents (positive and negative) should be recorded and taken into account to ensure the continuation of teaching and the creation of additional support mechanisms in future emergencies. Weaknesses and mistakes at this stage are the basis for reviewing teaching and learning processes with “rational” use of technology and removing barriers to accessibility for all those involved in distance learning (UNESCO, 2011). It is extremely important that the training of special education teachers in the use of ICT proceeds at a higher level, so that they can develop the required competencies. There is an urgent need for better ICT equipment of special schools in Greece. Possible changes in school curricula should also be considered. According to Kelly and Stevens (2009), students in a distance learning environment want to communicate both with each other and with teachers, but in such a way that they feel it serves them by meeting their particular learning needs. We hope that special schools in Greece will gradually succeed in providing education from a distance according to the needs of students. Finally, future long-term research may focus on the extent to which distance education contributes to the successful completion of secondary school programs and effective preparation for independent professional and social life by students with special educational needs in Greece. As we conclude the discussion on the results we need to point out some methodological problems in order for the findings to be interpreted clearly. Initially, the interview given was made for the purposes of our research and pilot, and therefore there is no data on its reliability and validity. This creates limitations in the conclusions, as it is not possible to compare in depth the present research with others. At the same time this small study can be a new attempt to introduce empirical research in special schools, which can provide us with valuable data in order to improve the curriculum and ways of functioning of special education school units with distance education.

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ORGANIZATIONAL PSYCHOLOGY

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INCREMENTAL VALIDITY OF ACHIEVEMENT AND BENEVOLENCE PERSONAL VALUES, OVER THE FIVE-FACTOR MODEL, FOR PREDICTING CITIZENSHIP PERFORMANCE²

Abstract

Building upon the relevance of citizenship performance at work, the current study examines the joint contribution of personality and personal values for predicting this criterion. In addition to acknowledging the instrumentality of citizenship performance behaviours in facilitating organizational effectiveness, previous research has shown that it depends upon both dispositional and work-related factors. Yet, it remains uninformative regarding the impact of personal values on this criterion. By adopting Schwartz's taxonomy of human values, this study empirically tests the contribution of achievement and benevolence for predicting citizenship performance above and beyond the big five personality factors. To fulfil this goal, a time-lagged design was employed with multisource data from a sample of 135 employees and respective supervisors in an information-technology company. In the first phase, employees completed an online survey with the measures of personality factors and personal values, while their citizenship performance was rated after six months in the second phase by correspondent direct supervisors, using performance forms. Results showed that benevolence, but not achievement, has incremental validity for predicting this criterion when personality effects are considered. The main implications of these findings are discussed.

Keywords: Personal values, personality, big five, organizational citizenship behaviour

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Introduction

Personal values are theorized as playing a meaningful role in shaping choices and behaviours of individuals across life domains, including in work settings (Arieli et al., 2020; Schwartz, 1992). Despite remaining scarcely scrutinized at the empirical level, there is growing emphasis on the potential of personal values to add a significant contribution to the prediction of relevant work outcomes, like job performance and subjective well-being, over other well-established predictors, such as personality (Anglim et al., 2021; Athota et al., 2020).

In the scope of job performance prediction, one of the key constructs on which such emphasis has been placed upon refers to citizenship performance, akin to organizational citizenship behaviours (Borman et al., 2014; Organ, 2018; Poropat & Jones, 2009). This performance dimension is recognized as a critical work outcome for organizations and emerges as an important criterion for personnel selection and performance management purposes (Harari et al., 2016; Podsakoff et al., 2018). Unlike the formal and prescribed behaviours of task performance, citizenship performance encompasses more spontaneous and discretionary actions which aim to positively shape the inherent social and psychological context and is crucial to support the organization's technical processes (Borman et al., 2014; Organ, 2018). They include actions like motivating and helping co-workers, persisting with extra effort and remaining loyal to the organization, despite temporary hardships and adversities (Borman et al., 2014). Previous meta-analytic research has found that citizenship performance positively impacts on both individual outcomes, like reward allocation decisions, and organizational level outcomes, such as customer satisfaction (Podsakoff et al., 2018).

Due to its benefits for both employees and the organization, primary and meta-analytic research efforts have been conducted over the last decades to map work-related and individual antecedents of citizenship performance behaviours. At the job-organizational level, accumulated evidence has consistently showed that positive perceptions of the work environment (e.g., job characteristics, supportive leadership) and favourable job attitudes (job satisfaction, organizational commitment, and justice) represent important drivers of this criterion (see Organ, 2018; Organ et al., 2006). Still, parallel research focusing upon the individual characteristics and dispositions has enriched this picture and shown that personality, as measured by the five-factor model, yields a meaningful contribution to predicting citizenship performance (Chiaburu et al., 2011; Ilies et al., 2009).

Nonetheless, the literature remains uninformative about the potential non-redundant contribution of other individual differences constructs, particularly of personal values, in driving citizenship performance. The intention of the current paper is to contribute to this emerging literature by examining the incremental validity of personal values, over the big five personality factors, for predicting citizenship performance. As well as considering its theoretical plausibility, as

further developed, it builds upon preliminary evidence suggesting that some personal values, such as achievement and benevolence, are positively linked with citizenship performance behaviours at work (Arthaud-Day et al., 2012; Cohen & Liu, 2011; Gatlin, 2016). To the best of our knowledge, this study is the first attempt to empirically examine whether these personal values hold incremental validity, over the big five, for predicting this criterion.

Criterion-Related Validity and Incremental Validity of Personal Values, Over Personality, for Predicting Citizenship Performance

As emphasized, prior meta-analytic research has shown that personality matters in the prediction of citizenship performance (Chiaburu et al., 2011; Ilies et al., 2011). When adopting a broadened citizenship performance criterion space, including individual and organization-directed citizenship behaviours as well as change-oriented citizenship, meta-analytic evidence supports the relevance of all the big five as distal and significant predictors of this performance dimension (Chiaburu et al., 2011). Based upon an incomparably less developed body of research, the literature also suggests that personal values have generalizable main effects, non-redundant with personality traits, in explaining relevant attitudes and behaviours at work, including performance outcomes such as citizenship performance (Anglim et al., 2021; see Arieli et al., 2020 for a revision).

Accordingly, personal values are posited to impact on behaviour at work since they refer to beliefs pertaining to desirable goals and modes of conduct that serve as guiding principles in individual lives, therefore reflecting personal preferences regarding what goals and related behaviours are worthy and important to pursue across situations (Schwartz, 1992). From a theoretical view, both traits and values can be conceptualized as distal determinants of individual behaviour, including in organizational settings (McCrae & Costa, 1995; McCrae & Sutin, 2018). Despite representing interrelated constructs which share a broad, relatively stable and trans-situational nature, traits and values provide non-redundant explanations for individual behaviour (Bilsky & Schwartz, 1994; Parks-Leduc et al., 2015). While traits encompass underlying tendencies that enact consistent patterns of thought, feelings and behaviours, values refer to beliefs regarding how individuals should behave (McCrae & Costa, 1995; Schwartz, 1992). Therefore, whereas traits contribute to explaining which people tend to systematically show specific behaviours, like those pertaining to organizational citizenship performance, “only values provide insight into conscientious thought and intentionality behind their actions” (Bilsky & Schwartz, 1994, p. 165).

Building upon these conceptual assumptions and drawing upon the taxonomy of personal values proposed by Schwartz (1992), this study empirically examines whether and to what extent the values of achievement and benevolence incrementally predict citizenship performance, when the effects of personality traits are also accounted for. It focuses on these specific values due to their

relevant motivational foci towards these performance behaviours, but also in light of the initial empirical findings supporting their validity for predicting this criterion (e.g., Arthaud-Day et al., 2012; Cohen & Liu, 2011; Gatlin, 2016). With regard to achievement, employees who place a great deal of importance upon this value tend to focus their motivation on showing competence and ambition according to social standards and attaining success (Schwartz, 1992). Thereby, they will likely exhibit citizenship behaviours as a route to accomplishing these goals, given the growing value placed upon these individual actions by organizations, particularly when appraising individual performance and allocating rewards (Borman et al., 2014; Podsakoff et al., 2018). In relation to benevolence, this value emphasizes expressing concern and care for those with whom the individuals tend to interact on a regular basis (Schwartz, 1992). Thus, employees high in benevolence are likely to feel responsibility to support and collaborate with their co-workers, acting upon the improvement of their welfare (Arthaud-Day et al., 2012; Gatlin, 2016). Considering these aspects along with the presented theoretical reasons ascribing specific and non-redundant influences of traits and values upon individual behaviour, we hypothesize that:

Hypothesis 1: Achievement and benevolence are positively linked with citizenship performance.

Hypothesis 2: Achievement and benevolence show incremental validity for predicting citizenship performance, over the big five personality factors.

Method

Procedure and Participants

The current study was developed with a sample of software engineers from an information technology firm, headquartered in Portugal. It followed a predictive design with multisource data collected in two independent waves, targeting incumbents in the job of software project engineers, organized in small work teams, and their direct supervisors. The core duties of this job included software coding, testing, quality assurance and project management. In the first phase, after getting permission from the executive board, the eligible 135 incumbents were invited to partake in this study, by voluntarily completing an online survey containing sociodemographic and work-related data, as well as the measures of the big five personality factors and the personal values. Informed consent was requested from all participants, containing a brief explanation of the key research goals and emphasizing that all answers will be kept confidential and used for research purposes only. Complete data was obtained for 120 incumbents, corresponding to a response rate of 88.9%. After six months, a second phase of data collection was implemented, concomitantly with the company's performance appraisal system, to collect their citizenship performance assessment, as rated by correspondent

direct supervisors. All supervisors were informed that ratings provided regarding the sampled employees will be kept confidential and used exclusively for the aims of this study. Employee performance data from respective supervisors were obtained for all the incumbents who participated in the first phase of this study ($N = 120$). The great majority of the sampled employees were male (93%) with an age average of 30.77 years ($SD = 4.37$) and an average of organizational tenure of approximately 3.32 years ($SD = 1.51$).

Measures

Big five personality factors were assessed using the Saucier's (1994) Big-five Mini Markers, a shortened version of the Goldberg's (1992) 100-item adjective checklist. It provides unipolar markers of the five dimensions of personality preserving acceptable orthogonality and reliability. The seven items with highest loadings in each of the big five were used. Example items included "temperamental" and "moody" for emotional stability, "talkative" and "shy" for extraversion, "sympathetic" and "kind" for agreeableness, "imaginative" and "creative" for openness to experience, and "organized" and "efficient" for conscientiousness. Each incumbent was instructed to rate how accurately each adjective described him or herself using a five-point Likert scale, ranging from 1 (*extremely inaccurate*) to 5 (*extremely accurate*). Cronbach's alphas obtained in the current sample were .87 for emotional stability, .83 for extraversion, .67 for agreeableness, .78 for openness and .72 for conscientiousness.

Personal values of achievement and benevolence were measured through the respective items of the Portuguese version of the Schwartz Values Survey (SVS, Schwartz, 1992), developed by Menezes and Campos (1997). Accordingly, achievement was evaluated using four items including "ambitious" and "influential", whereas benevolence was measured with five items including "loyal" and "helpful". Participants were instructed to rate the importance of each item as a guiding principle of their own life using a nine-point scale anchored at 1 (*opposed to my values*) to 7 (*of supreme importance*). As recommended by Schwartz et al. (1997), scores were corrected for individual differences in response scale usage by computing the mean score on all items. Subsequently, individual's scores for all items were centred around each individual's mean score. Cronbach's alphas obtained in this sample were .68 for achievement and .69 for benevolence.

Citizenship performance was evaluated through supervisor ratings on the 6-item unifactorial citizenship performance scale developed by Poropat and Jones (2009). Supervisors were asked to assess the extent to which each item accurately described the performance of the respective employee over the last six months, using a five-point Likert scale ranging from 1 = *not at all accurately* to 5 = *very accurately*. Example items include "Cooperates fully with others by willingly sacrificing own personal interests for the good of the team" and "Avoids

performing any tasks that are not normally a part of own duties by arguing that they are somebody else’s responsibility” (reverse scored). Cronbach’s alpha was .82 in this sample.

Results

Prior to testing our research hypotheses, evidence was gathered regarding the construct and discriminant validity of all scales used to measure the variables under study. Due to sample size constraints which precludes the use of confirmatory factor analysis, a principal component analysis was conducted as a feasible alternative (Pituch & Stevens, 2016). Using oblimin rotation to account for theoretically plausible component interrelations, the expected eight-factor solution emerged (i.e., the big five personality factors, the personal values of achievement and benevolence, plus citizenship performance), explaining 55.65% of total variance. All items displayed clean and appropriate loadings on the respective component (see Appendix A), with the item “rude” from the agreeableness subscale and the item “capable” from the achievement subscale being exceptions; these were dropped from the analysis. These results supported the construct validity of the subscales and the empirical discriminability of the constructs under analysis.

Table 1 reports the descriptive statistics and correlations between all variables. As shown, the personality factors of conscientiousness, extraversion, emotional stability, and openness were positively and significantly linked with citizenship performance. Moreover, achievement and benevolence also emerged as significant predictors of this criterion, supporting H1, according to which both these personal values will establish positive relationships with citizenship performance.

Table 1. Means, standard deviations and zero-order coefficients

Variable	<i>M</i>	<i>SD</i>	Sex ^a	Age	Tenure	ES	EX	A	C	OP	ACH	BEN	CIT
Sex ^a	1.07	0.25	--										
Age	30.77	4.37	-.12	--									
Tenure	3.32	1.51	.10	.07	--								
ES	3.60	0.71	-.09	.11	-.07	--							
EX	3.63	0.60	-.07	.11	-.02	.13	--						
A	3.84	0.41	.03	.07	.04	.14	.09	--					

C	3.91	0.44	.10	.07	.14	.21*	.20*	.25**	--				
OP	3.47	0.48	-.14	-.15	-.07	.03	.22*	.15	.22*	--			
ACH	4.66	1.03	-.09	-.04	.04	-.04	.26**	-.11	.16	.14	--		
BEN	5.16	0.82	-.12	.13	.06	.07	.03	.23*	.08	-.07	-.01	--	
CIT	3.60	0.66	.02	-.01	.13	.21*	.22*	.03	.21*	.22*	.23*	.19*	--

Note. $N = 120$. ^aMale = 1, Female = 2. Tenure = Organizational tenure, ES = Emotional stability, EX = Extraversion, C = Conscientiousness, A = Agreeableness, OP = Openness, ACH = Achievement, BEN = Benevolence, CIT = Citizenship performance. * $p < .05$. ** $p < .01$. *** $p < .001$.

Before testing H2, given that our data structure was partially nested (i.e., 66 supervisors rated an average of 1.82 employees, $SD = 0.96$), potential non-independence of the observations was assessed, using the R software multilevel package. The calculation of the intraclass coefficient ($ICC_{(1)}$) revealed that it was almost zero. Furthermore, the comparison of a null model (including no predictors but a random intercept term for each supervisor evaluations) with a model without a random intercept showed no statistical significance between them ($p = .998$), indicating no need for using multi-level analyses (Bliese, 2016).

As such, a hierarchical regression analysis was conducted to test H2, entering the big five in the first step of the equation, to control for their effects. All personality factors were inserted in the analysis since they were positively linked with the criterion or, at least, shared variance with the personal values under study (i.e., agreeableness despite not representing a significant predictor of citizenship performance in this sample was positively related with benevolence). As shown in Table 2, the correspondent model accounted for 14% of this criterion variance [$R^2 = .176$, $F(5, 114) = 4.86$, $p < .001$, adjusted $R^2 = .139$]. Achievement and benevolence entered the analysis in the second step to assess whether and to what extent these constructs yield a significant contribution in explaining variance of citizenship performance once the big five effects are controlled. As depicted, the respective model [$R^2 = .231$, $F(7, 112) = 4.81$, $p < .001$, adjusted $R^2 = .183$] yielded a significant increment of approximately 6% in R^2 , being of 4.4% in terms of adjusted R^2 variation (i.e., from .139 to .183). Notwithstanding, in this last prediction model, only benevolence showed a significant contribution in explaining citizenship performance variance when the big five effects are also accounted. Thus, obtained results provided only partial support for H2.

Table 2. *Incremental validity of achievement and benevolence over the big five for predicting citizenship performance*

Independent variables	β	R	R^2	R^2_{adj}	ΔR^2
<i>Step 1</i>		.419***	.176	.139	---
Emotional Stability	.283**				
Extraversion	.184*				
Agreeableness	-.018				
Conscientiousness	.210*				
Openness	.142*				
<i>Step 2</i>		.481***	.231	.183	.056*
Achievement	.121				
Benevolence	.211*				

Note. $N = 120$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Discussion

Despite the claims of many organizations about the relevance of attracting and developing employees with values that are important for high performance and favourable job attitudes, research scrutinizing the relevancy of personal values for predicting such key work outcomes remains scarce (Anglim et al., 2021; Arieli et al., 2020). The current study shares the growing emphasis placed upon values as valid predictors of valuable work outcomes in the organizational literature, particularly in personnel selection research (Anglim et al., 2021; Gatlin, 2016), by examining whether and to what degree the personal values of achievement and benevolence contribute to predicting citizenship performance when personality effects are also accounted. Results obtained from a predictive design with multisource data, collected from job incumbents on a software engineering project and their supervisors, revealed, as hypothesized, that both achievement and benevolence represent valid and relevant predictors of citizenship performance. However, unlike achievement, benevolence showed incremental validity regarding this criterion when the big five effects were controlled for. These findings drawn relevant theoretical and applied implications.

From a conceptual perspective, they are aligned with previous research supporting the adequacy of the Schwartz (1992) comprehensive taxonomy of personal values as a valuable framework to advance knowledge about the impact

of these constructs on job performance and its encompassed core dimensions, such citizenship performance (Anglim et al., 2021; Arieli et al., 2020; Harari et al., 2016). Furthermore, they complement previous research regarding the validity of benevolence towards this criterion (i.e., Arthaud-Day et al., 2012; Cohen & Liu, 2011; Gatlin, 2016), by indicating that even when considering the impact of personality, benevolence plays a meaningful role in enacting citizenship behaviours and thereby in building a positive social and psychological environment in the workplace. Conversely, achievement and its potential to motivate such prosocial behaviours, most likely as a route to attain success and recognition (Arthaud-Day et al., 2012; Schwartz et al., 1992), seems to be fully captured by the personality factors. Hence, these findings suggest that benevolence should be considered in the scope of theoretical and predictive models of citizenship performance. From an applied perspective, the current findings support the inclusion of benevolence screening along with personality assessment for personnel selection purposes, especially for organizations which consider citizenship performance as an important driver of accomplishing efficacy in organizational goals and internal work processes (e.g., those which develop their core work dynamics through teams-based structures).

Furthermore, in addition to adopting such a personnel selection approach to promote higher levels of citizenship performance, organizations should not neglect the need to nurture the emergence and maintenance of these behaviours in the post-hiring phase. This can be done by targeting their human resource management policies and practices to the promotion of a satisfying work context and enriched jobs, in which employees perceive a fair and supportive treatment from their leaders and the whole organization. Such factors explain a meaningful portion of this criterion variance and represent key conditions to enable positive social exchange processes, through which employees reciprocate the organization for such beneficial treatment, particularly by exhibiting citizenship behaviours (Organ, 2018; Organ et al., 2006).

In spite of these contributions, this study has some limitations. One of these limitations stems from the reliance upon a relatively small sample from a single job and organization, which precludes the generalization of these findings to other work settings. Another limitation concerns the inclusion of benevolence and achievement only, which despite its theoretical pertinence for the criterion under examination, renders our results uninformative about the potential influence of other personal values. Future research with samples from other jobs and organizations is needed to assess the generalizability of these results, as well as to expand them to the study of criterion-related validity of personal values regarding other key individual performance dimensions, such as task, creative and innovative performance, and counterproductivity behaviours (Borman et al., 2004; Harari et al., 2016).

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Appendix A

Factor loadings from exploratory factor analysis of variables under study, using oblimin rotation

Scale and items	C1	C2	C3	C4	C5	C6	C7	C8
<i>Openness to experience</i>								
Imaginative	.85	-.04	.05	-.27	-.04	.13	-.03	-.07
Creative	.79	-.19	.05	.03	.07	.03	-.02	.00
Uncreative	-.77	-.02	-.03	.00	.01	-.05	-.10	-.14
Unintellectual	-.52	.04	.19	.00	-.06	-.07	-.03	-.05
Intellectual	.47	.08	-.20	.21	-.03	-.21	.10	.14
Complex rationally.	.47	.30	-.12	.14	.19	-.02	-.10	-.00
Philosophical	.44	-.08	-.06	.00	-.02	-.32	-.04	-.07
<i>Emotional stability</i>								
Moody	.07	-.78	-.25	.01	-.08	.07	-.01	.05
Temperamental	-.10	-.76	.22	.05	.02	-.26	.03	.09
Relaxed	-.14	.76	-.13	-.05	.08	.19	.07	.05
Touchy	.11	-.73	-.24	-.14	-.21	.04	.08	-.11
Fretful	.09	-.71	.01	.08	.11	.10	.00	.08
Envious	-.12	-.66	-.07	-.08	-.20	.09	.03	-.06
Unenvious	-.05	.66	-.14	-.03	.06	.24	-.08	-.06
<i>Extraversion</i>								
Extroverted	.10	.11	.84	-.11	-.04	.07	-.04	-.18
Shy	.14	-.14	-.82	.09	-.10	-.02	-.09	.13
Talkative	-.02	-.14	.80	-.08	-.05	-.01	.05	-.08
Quiet	.11	.23	-.64	-.14	.07	.04	.05	.05
Bashful	.12	-.06	-.57	.01	.06	-.37	.05	-.03
Withdrawn	-.08	-.21	-.52	-.18	.15	.28	.05	-.23
Bold	-.03	.27	.42	.30	-.11	-.18	-.10	.18
<i>Benevolence</i>								
Honest (genuine, sincere)	.01	-.01	.10	.73	-.09	-.04	-.06	.07
Loyal (faithful to friends, group)	.06	.04	.02	.67	-.09	.01	-.05	-.29
Helpful (working for the welfare of others)	-.02	-.11	-.02	.63	.04	.26	.14	-.10
Responsible (dependable, reliable)	-.01	-.07	-.12	.59	.08	-.11	-.32	-.20
Forgiving (willing to pardon others)	-.16	.09	-.10	.50	-.08	.18	.36	-.01
<i>Citizenship performance</i>								

Cooperates fully with others by willingly sacrificing own personal interests for the good of the team.	.04	.06	.06	-.02	.76	.09	-.03	-.02
Looks for opportunities to learn new knowledge and skills from others at work and from new and challenging job assignments.	.11	.03	.14	-.08	.74	.05	.11	-.23
Goes out of his or her way to congratulate others for their achievements.	.04	.07	-.03	.00	.72	-.14	-.13	.10
Knows and follows both the letter and the spirit of organizational rules and procedures, even when the rules seem personally inconvenient.	.02	-.03	-.13	.05	.72	.09	.07	.05
Consistently takes the initiative to pitch in and do anything that might be necessary to help accomplish team or organizational objectives, even if such actions are not normally part of own duties.	-.12	.05	-.21	-.09	.65	-.04	.10	-.01
Avoids performing any tasks that are not normally a part of own duties by arguing that they are somebody else's responsibility	.00	-.16	-.02	-.03	-.58	.26	-.07	-.12
<i>Agreeableness</i>								
Sympathetic	.14	.09	.01	-.05	-.04	.72	.13	-.08
Warm	.07	.20	-.10	-.09	-.18	.69	.03	.08
Unsympathetic	-.21	-.02	-.04	-.23	-.05	-.60	.02	.01
Cold	-.07	-.28	.01	-.00	-.14	-.59	.25	-.05
Kind	-.04	-.07	.28	.08	.01	.49	-.34	.14
Harsh	.25	.26	-.05	-.01	-.23	-.43	.14	-.02
<i>Conscientiousness</i>								
Organized	-.10	-.04	.00	.03	.15	.02	.77	-.14
Systematic	.24	-.16	.05	.20	.12	.01	.65	-.12
Disorganized	-.38	.08	-.12	-.16	-.12	-.02	-.53	-.10
Sloppy	-.25	.12	-.06	.03	-.16	-.18	-.53	.20
Careless	.06	-.06	-.12	.07	.05	.21	-.52	.26
Efficient	-.04	.10	-.10	-.15	-.10	.02	.48	.13
Inefficient	.15	.14	-.10	.25	-.04	.24	-.44	-.15
<i>Achievement</i>								
Ambitious (hard working, aspiring)	-.11	-.06	-.23	-.12	.05	-.01	.07	.76
Influential (having an impact on people and events)	.09	-.06	-.13	.01	-.03	.04	-.05	.72
Successful (achieving goals)	.07	.03	.11	-.27	.01	.03	.04	.63

<i>Eigen value</i>	6.02	5.14	3.47	3.06	2.56	2.54	2.21	1.53
<i>Explained variance</i>	12.92	10.70	7.23	6.36	5.34	5.29	4.62	3.18

Notes. $N = 120$. *Pattern matrix* values are displayed.

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HEALTH-RELATED NUTRITIONAL BEHAVIOR, EMPLOYEE EFFICIENCY, AND GENERAL LIFE SATISFACTION

Abstract

An individual's daily diet can have substantial effects on different aspects of his/her life. Research has shown a significant linkage of nutrition with health, and health with work-related outcomes, while research linking nutrition and work-related outcomes is scarce. The first aim of our study was therefore to investigate the relationship between health-related nutritional behavior and work-related outcomes, along with general life satisfaction. Lacking sufficient knowledge about how eating behavior affects those outcomes, we focused the second aim of our study on determining its role in predicting employee efficiency, employee engagement and absenteeism. 230 employees (175 women, 55 men; M of age = 30.92, $SD = 8.75$) participated in the study. We used the following instruments: A screening questionnaire of nutritional habits (Public Health Institute of the Republic of Slovenia, 2011), General life satisfaction scale SWLS (Diener et al., 1985), the Slovenian short version of the WHO Health and Work performance questionnaire (Sedlar, 2015; Kessler et al., 2003), and The Utrecht work engagement scale (Schaufeli et al., 2006). In the first step, the descriptive statistics were calculated, normal distribution was tested, and the reliability of each scale was verified. We then calculated the correlations between the measured variables. In the last step, a regression analysis was used for statistically significant correlations to calculate whether nutritional behavior can predict work-related results and overall life satisfaction. We found significant correlation of nutritional behavior with employee engagement ($r = .22$), employee efficiency ($r = .29$) and general life satisfaction ($r = .26$). As hypothesized, health-related nutritional behavior serves as a strong predictor of general life satisfaction ($\beta = .26$) and has a significant predictive power of employees' efficiency ($\beta = .20$) and engagement as well ($\beta = .22$). The results are of primary importance for employees, as they confirm that nutrition is an important factor in achieving good work results, and that healthy eating leads to greater work-related outcomes, as well as greater life satisfaction. These findings are also of considerable importance for employers in confirming the positive effects of workplace health promotion, which has beneficial consequences for both employees and employers.

Keywords: health-related nutritional behavior, employee engagement, employee efficiency, life satisfaction, employee absenteeism

Introduction

In today's developed economy, adding capital or increasing the number of employees is not the best way to achieve development and growth of an enterprise. Another way to do so is rather to encourage the innovative capacity of employees and efficiently manage them (Jyoti et al., 2011). Employees' well-being represents a significant contribution to achieving the success of a company, while healthy behaviors represent an important part in achieving the well-being of employees (Hakkarainen et al., 2004). Since organizational research has largely ignored the impact of employees' health-related nutritional behavior as one of the health behavior factors, we have focused our study particularly on this aspect. Research has shown that health-related nutritional behavior is associated with better academic efficacy in school and university (Correa-Burrows et al., 2016). It has also been found to be linked to general life satisfaction (Pettay, 2008), but little is known about the role health-related nutritional habits have in working environments. Does a healthy diet increase employee efficiency and engagement? Some studies (Boles et al., 2004; Pelletier et al., 2004; Shi et al., 2013) investigated the relationship between health risk behaviors and work productivity. The results showed poor dieting to be one of the health risk factors leading to lower efficiency and higher absenteeism, whereas the reduction of health risk behaviors was significantly associated with higher efficiency and lower absenteeism. Nonetheless, empirical evidence linking health-related nutritional behavior with employee efficiency and employee engagement is still limited (Shi et al., 2013).

Theoretical Introduction

Health-Related Nutritional Behavior

Nutritional behavior encompasses many aspects across different disciplines and research traditions. It covers various aspects related to dietary behaviors, from food purchasing to ingestion, and ranges from the intake of single nutrients to entire diets patterns, from eating disorders to eating habits, from food preferences to food preparation (Stok et al., 2018). Nutritional behavior is framed by biological, anthropological, economical, psychological, socio-cultural, and home economics related determinants, and it is shaped by individual situations (Gedrich, 2003). For the purpose of our study, we selected an aspect by which nutritional behavior is narrowed into a concept representing the manner of eating of an individual or a group. It focuses on the selection and amount of food eaten, food that people enjoy, the proportion of individual nutrients in a diet, the mode of food preparation, and the frequency and distribution of individual meals throughout the day. As stated by WHO (WHO, 2018), proper nutrition is one of the essential factors of good health and well-being. Healthy eating protects individuals against certain diseases, such as obesity, diabetes, cardiovascular

diseases, some types of cancer, and bone disorders. WHO recommends a nutritious and varied diet, the inclusion of mainly whole-grain foods, vegetables and fruits, a limited intake of fats (up to a maximum 30% of the daily energy intake), and the replacement of saturated fatty acids with unsaturated fats. They recommend replacing greasy meat and meat products with lean meat, poultry, legumes, and fish. Low sugar foods are recommended next to a limited amount of sweet drinks and daily salt intake (up to 5 grams per day) (WHO, 2018). Optimally, meals are evenly distributed throughout the day. Individuals should eat three to five meals a day. This will ensure that the body receives energy and nutrients evenly throughout the day. Consequently, fat does not accumulate in the body, metabolism and digestion are improved, fatigue and eating disorders are avoided, and well-being is heightened (WHO, 2018).

Work-Related Outcomes

The work-related outcomes researched in our study are employee efficiency, employee engagement, and absenteeism. Employee efficiency refers to the results or productive effects of an employee and an organization. It is directly related to the work performance of both (Kim et al., 2018), and refers to faster work with less effort. An employee who is working efficiently will do more with less effort compared to a less efficient employee (Yuetal., 2018).

Employee engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption. It refers to a relatively persistent state that is not focused on any particular object, event, individual, or behavior. An engaged employee experiences a sense of efficiency, energy and connection with his/her work, while simultaneously experiencing a sense of ability to successfully fulfil his/her work requirements. (Schaufeliet al., 2002). Engaged employees perform better at the workplace because they often experience positive emotions (happiness, satisfaction, joy), because they are in better health for creating their own resources, and because they pass on their engagement to other employees (Bakker & Demerouti, 2008). Employee health status is closely linked to absenteeism (Merrill et al., 2013), which has been linked to significant productivity losses at the workplace (Gosselin et al., 2013). This is due to lower employee performance, lower employee engagement and lower employee productivity (Merrill et al., 2013).

Unhealthy eating is therefore closely associated with reduced productivity at the workplace, whereas healthier eating leads to the higher productivity of employees (Shi et al., 2013). Pelletier et al. (2004) confirmed these findings in a longitudinal study in which researchers examined the impact of employees' changes in health risk behaviors (improving poor diet) on their efficiency and absenteeism. The findings showed a reduction of employee efficiency ranging from 1.3% to 25.9% in relation to the number of health risk behaviors that were typical for each employee (Pelletier et al., 2004). Poor diet (regular consumption

of fatty foods, lack of fruits and vegetables) represented a statistically significant variable and was among the health risk behaviors, next to BMI, high cholesterol, high blood pressure, diabetes or high blood sugar, smoking, alcohol consumption, low physical activity, and high stress, many of which are linked to health-related nutritional behavior. It was assessed that by removing one type of health risk behavior, employees reduce absenteeism by 2% and improve their efficiency by 9%. In addition to these results, Population Health Management (Poor employee health habits drive lost productivity according to a major new study of nearly 20,000 American workers, 2012) published a survey in October 2012 including 19,803 employees, in which the correlation of unhealthy lifestyle with work productivity loss was examined. According to their findings, 66% of employees with unhealthy eating habits are more likely to report poorer work quality compared to those who regularly consume whole-grain carbohydrates, fruits, and vegetables, thus eating healthy (Kowlessar et al., 2011). Reduced employee efficiency was associated with high blood pressure and high glucose levels, which are directly related to health-related nutritional behavior (Kowlessar et al., 2011). Moreover, consuming sweet snacks led them to feel more fatigued and tense, and less energetic (Thayer, 1987). These findings indicate the importance of healthy nutrition for the quality of work done at the workplace and stipulate the need for choosing healthy instead of unhealthy nutrition.

General Life Satisfaction

General life satisfaction is a general assessment of well-being, satisfaction, and happiness. It represents the individual's cognitive component of subjective well-being, and assessment of one's well-being, health, friendship and partnership, and satisfaction with oneself (Diener et al., 1985). The role of an employee significantly contributes to his/her overall assessment of life (Veenhoven, 1996), whereas nutrition has an effect on an individual's well-being, as well as cognitive function. After ingesting large amounts of omega-6 fatty acids, individuals reported greater anxiety (Veenhoven, 1996). A positive trend also occurred with depression (Hakkarainen et al., 2004), which was negatively linked to employee efficiency (Wright & Bonett, 1997). Poor diet was associated with sadness, stress, worry, anger, shame, impaired concentration, and fatigue of an individual (Lachance et al., 2014). Dissatisfied individuals are shown to be less effective at a workplace that requires good communication, high cognitive and interpersonal skills (Burton et al., 2005). It was estimated that these individuals are on average 4.5% less effective compared to satisfied individuals. Dissatisfaction with life was concurrently associated with lower employee engagement (Burton et al., 2017). On the other hand, a healthy diet was associated with better health and, consequently, greater well-being, higher employee engagement (Robertson & Cooper, 2009), higher life satisfaction (Robertson & Cooper, 2009) and higher employee efficiency (Donald et al., 2005; Mills, 2005; Robertson &

Cooper, 2009; Wright & Bonett, 1997; Wright & Cropanzano, 2000). Satisfied individuals anticipate more opportunities at the workplace, are more willing to help others, and are more confident and optimistic (Cropanzano & Wright, 2001). Lyubomirsky et al. (2005) argue that more satisfied individuals are more work-efficient compared to dissatisfied individuals, along with life satisfaction being a more important predictor of employee efficiency than work satisfaction. The problem of the research is to find out the relationship between health-related nutritional behavior, employee efficiency, employee engagement, and general life satisfaction of employees.

We suggested the following hypothesis.

Hypothesis 1. Health-related nutritional behavior is correlated with the following work-related outcomes: employee efficiency, employee engagement, and absenteeism. We assume this hypothesis on the base of several studies (Kowlessar et al., 2011; Pelletier et al., 2004; Shi et al., 2013) that indicate the importance of healthy nutrition for the quality of work done at the workplace and stipulate the need for choosing healthy instead of unhealthy nutrition.

Based on the findings of various studies mentioned above (e.g., Donald et al., 2005; Mills, 2005; Robertson & Cooper, 2009; Wright & Bonett, 1997; Wright & Cropanzano, 2000), we developed our second hypothesis:

Hypothesis 2. Health-related nutritional behavior is correlated with general life satisfaction. Lastly, the aim of our study was to find out whether health-related nutritional behavior can predict an individual's work results. Our goal was to contribute to a higher motivation of employers to carry out workplace health promotion and to improve food policies in organizations. Our second goal was to contribute to the improvement of people's eating habits and thus to bettering their health. We then set up our third hypothesis:

Hypothesis 3. Health-related behavior predicts work-related results and general life satisfaction. To find out whether work-related outcomes act as predictors of general life satisfaction, a fourth hypothesis was formulated.

Hypothesis 4. Work-related outcomes, such as employee engagement predicts general life satisfaction more significantly than health related behavior.

Method

Participants

The survey sample included 230 participants working full-time. The sample was comprised of 175 (76.1%) women and 55 (23.9%) men ranging in age from 19 to 60 years ($M = 30.92$; $SD = 8.75$). 27.7% of the participants were employed in the public administration, 19% in clerical and administrative support jobs (e.g., secretaries, billing clerks, office supervisors), 13.9% were professionals (e.g., engineers, accountants, systems analysts), 10% held positions as executives,

administrators or senior managers (e.g., CEOs, sales VPs, plant managers), 9.5% worked as service providers (e.g., security officers, food service workers, janitors), 6.5% worked in sales (e.g., sales representatives, stockbrokers, retail salespersons), 5.6% were employed as operators or laborers (e.g., assembly line workers, truck drivers, construction workers), and 4.3% were employed in technical support positions (e.g., lab technicians, legal assistants, computer programmers). 2.2% of respondents chose not to answer the question about their employment.

Materials and methods

Health-related nutritional habits

A screening questionnaire of nutritional habits, issued by the Public Health Institute of the Republic of Slovenia (2011), was used to determine the health-related nutritional behavior of the participants. The questionnaire consisted of 14 questions asking participants about their eating habits. The rating scales ranged from 2 to 5. Questions such as “Do you eat breakfast?” were answered with “yes” (1) or “no” (2), questions such as “How many meals do you eat on average per day?”, “How many vegetables / fruits do you eat on average per day?”, “How much milk do you drink per day?”, were answered on a 4-point scale (1 = *no vegetables / fruits / milk*, 4 = *2 units or more*). One point was allotted for each component of unhealthy diet, which meant that the lower the total of points was, the better eating habits a participant had. The final points therefore provided the estimated result of a participant’s eating habits, whether the individual was eating unhealthily, adequately, or healthy: 0-3 points indicated a healthy diet, 4-8 points indicated an adequate diet, and 9-14 points indicated an unhealthy diet. The reliability (Cronbach’s alpha) of the original questionnaire is unknown, but in our study, it was 0.65.

Absenteeism and employee efficiency

The Slovenian short version (Sedlar, 2015) of The World Health Organization Health and Work Performance Questionnaire (Kessler et al., 2003) was used to measure employee efficiency and absenteeism. Absenteeism was calculated using two items in which employees were asked to indicate the number of hours they are expected to work in a normal seven-day week, and the total number of hours worked in the last seven days. Absenteeism for the last 7 days was calculated using the formula: $4x$ expected number of hours – $4x$ number of hours completed. The correlation between the items was 0.33. The reliability (Cronbach alpha) in our study was 0.90. Employee efficiency was measured with one item where, on a ten-point scale, employees marked their general efficiency for the last four weeks.

Employee engagement

The Utrecht Work Engagement Scale (Schaufeli et al., 2006) was used to measure employee engagement. The questionnaire measures an individual's well-being at the workplace and comprises 9 items that are evaluated on a seven-point Likert scale ranging from 0 (*never*) to 6 (*always*). The scale was translated into the Slovenian language by Tement (2010). Three dimensions were measured: vigor, dedication, and absorption. Some examples of the items: "During work I feel as if I am bursting with energy.", "I am enthusiastic about my job.", "My job inspires me.". The questionnaire was evaluated by dividing the participant's result by the number of items. The internal reliability of the questionnaire is very high, with Cronbach's alpha being 0.93. Cronbach's alpha in our sample was 0.89.

Satisfaction with life

The Satisfaction with Life Scale SWLS (Diener et al., 1985) was used to measure an individual's life satisfaction. The scale consists of five items evaluated on a seven-point Likert scale ranging from 1 = *not at all* to 7 = *absolutely true*. Some examples of items: "In most respects, my life is close to ideal.", "My living conditions are excellent.", "If I lived again, I would not want to change anything.", "I am satisfied with my life." The sum of the results of all items represents an individual's satisfaction with life, where he or she may achieve between 5 and 35 points. The higher the number of points, the more satisfied an individual is with his/her life. 20 points represents a neutral position where an individual is just as satisfied as he is dissatisfied with life. A score between 21 and 25 indicates an individual's slight satisfaction with life, a score between 15 and 19 means a slight dissatisfaction with life, a score between 26 and 30 indicates an individual's satisfaction with life, while a score between 5 and 9 means a high dissatisfaction with life (Pavot&Diener, 1993). The author reports a high internal reliability (Cronbach's alpha 0.87) and a high retest reliability (0.82) (Diener et al., 1985). The coefficient of internal reliability in our sample was 0.94.

Procedure and Data Analysis

The data was collected electronically. The questionnaire was shared on Facebook and LinkedIn, as well as on various Slovenian forums. The data was collected following the rule of the snowball method. Completing a questionnaire took, on average, 10 minutes. The participants were ensured anonymity and the possibility of receiving feedback. The data was analyzed using Microsoft Office Excel and SPSS. In the first step, the descriptive statistics were calculated, normal distribution was tested, and the reliability of each scale was verified. We then calculated the correlations between the measured variables. In the last step, two regression analyses were used- in one work-related results was criterion

variable and in another overall life satisfaction. There were no missing values in the sample.

Results

The means, standard deviations, skewness, and kurtosis are shown in Table 1.

Table 1. Means, Standard Deviations, Skewness, and Kurtosis.

	<i>M</i>	<i>SD</i>	<i>Skewness</i>	<i>SE of skewness</i>	<i>Kurtosis</i>	<i>SE of kurtosis</i>
Nutrition	3.326	1.994	0.746	0.16	0.269	0.32
SWLS	23.639	6.289	-0.644	0.16	-0.033	0.32
UWES	5.112	1.198	-0.979	0.16	0.757	0.32
Absenteeism	-8.487	67.558	0.021	0.16	3.317	0.32
Employee efficiency	85	21.57	-1.57	0.16	2.922	0.32

Note. $N = 230$; SWLS = life satisfaction; UWES = employee efficiency.

The nutrition criterion ranges from 0 to 14 points, where achieving fewer points means healthier eating habits. Considering this criterion, the participants of our research had, on average, healthy eating habits. The Satisfaction with Life Scale criteria ranges from 5 to 35 points, where achieving 5 points means a high dissatisfaction with life, while 35 points means a high satisfaction with life. The Utrecht Work Engagement Scale comprises values up to 9. Considering the norms (Schaufeli & Bakker, 2004), our participants were shown to be feeling engaged in their work either many times a week or every day and were therefore above average. The result regarding absenteeism indicates the amount of lost working hours per employee in the last month, which means that our participants were spending more time at the workplace than was expected of them. It should be emphasized that these results are descriptive in nature, so caution should be exercised in their further interpretation. The normality of variables was checked with skewness and kurtosis. We checked normality with the help of the rule of thumb, we conclude that our variables were normally distributed. Table 2 shows the correlations between factors.

Table 2. Correlations between factors

	Nutrition	SWLS	UWES	Absenteeism	Employee efficiency
Nutrition	1	-.258**	-.217**	.025	-.191**
SWLS		1	.474**	.008	.154*
UWES			1	-.081	.285**
Absenteeism				1	-.312**
Employee efficiency					1

Note. *p < 0,05; **p < 0,01; SWLS = life satisfaction; UWES = employee engagement

Nutrition is significantly correlated with satisfaction with life, employee engagement and employee efficiency, but not with absenteeism. A significant correlation was also found between employee efficiency, employee engagement and satisfaction with life, whereas absenteeism was significantly correlated only with employee efficiency. The results partially confirmed our first and second hypotheses, since nutrition is significantly correlated with general life satisfaction, employee efficiency and employee engagement, but not with absenteeism. As noted, the correlations are negative. This is due to the reverse valuation of nutritional habits – a lower value means a healthier way of eating. A higher value represents a less healthy diet and thus lower life satisfaction, lower employee engagement, and lower employee efficiency.

The results of the linear regression are shown in Table 3. The dependent variables are life satisfaction, employee efficiency, absenteeism, and work engagement, the predictor is nutrition.

Table 3. *Linear regression results for health-related nutritional behavior*

Model 1	B	SE	Beta	F	p	R	R ²
SWLS	-0.813	0.202	-.258	16.213	.000	.258	.066
UWES	-0.130	0.039	-.217	11.262	.001	.217	.047
ABSENTEEISM	0.853	2.243	.025	0.145	.704	.025	.001
EFFICIENCY	-0.207	0.703	-.191	8.668	.004	.191	.037

Note. The predictor variable is NUTRITION

The results show that a healthy diet predicts higher levels of overall life satisfaction, work engagement, and work efficiency. For absenteeism, we did not find our values to be significant. To graphically represent diet as a predictor of life satisfaction, work engagement, and work efficiency, we created three figures. Figure 1 shows that a healthier diet predicts higher overall life satisfaction.

Figure 1. Health-related nutritional behavior a predictor of life satisfaction

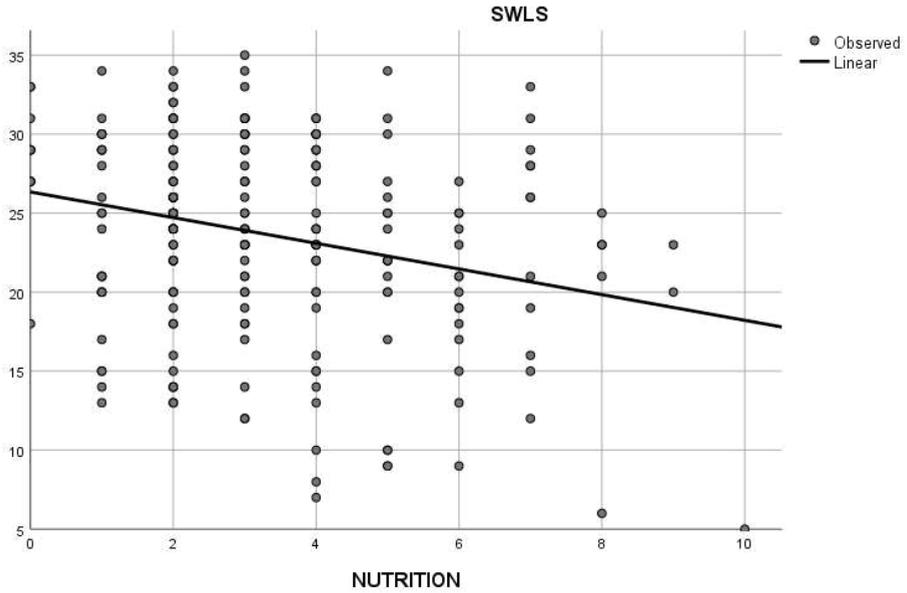


Figure 2 presents that healthier diet predicts work engagement.

Figure 2. Health-related nutritional behavior a predictor of work engagement

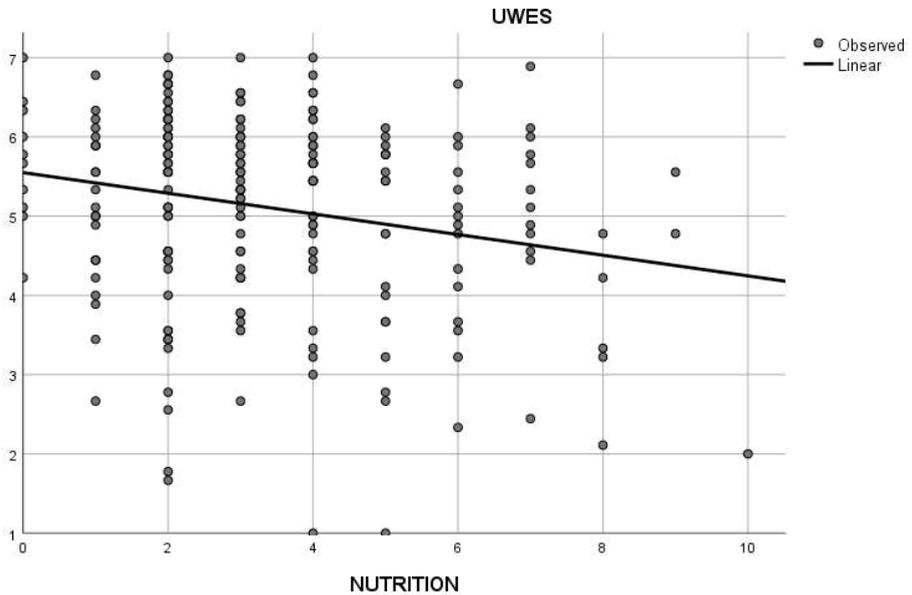
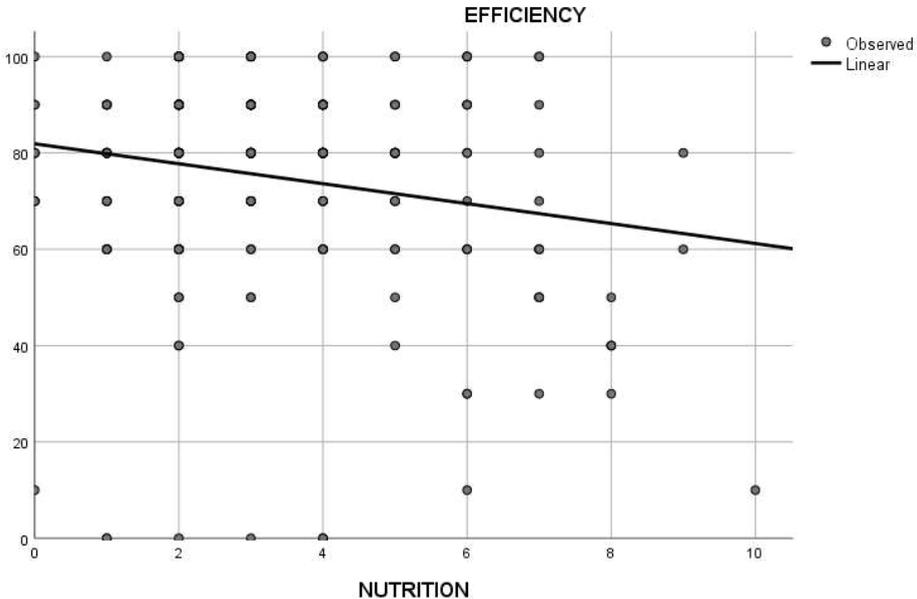


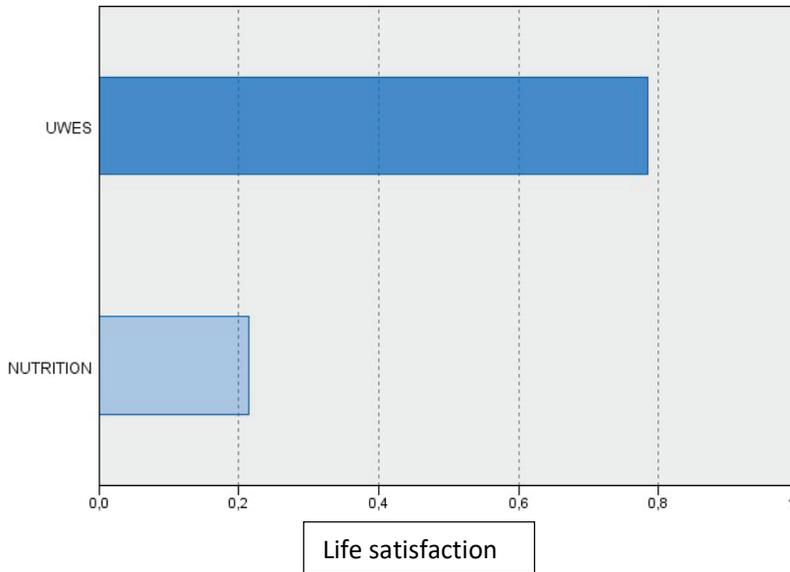
Figure 3 shows the results between nutrition and work efficiency. The figures show that the steepest line is the one representing the relationship between nutrition and general life satisfaction.

Figure 3. *Health-related nutritional behavior a predictor of work efficiency*



To further determine the role of health-related dietary behaviors and employee engagement as predictors, we performed a linear modeling analysis (95% confidence level). The results in Figure 4 show that both variables are significant predictors of overall life satisfaction, with employee engagement being significantly higher. The importance of the predictor for dietary behavior is 0.21, while employee engagement is 0.79. This means that the commitment with which the participants approach their work contributes more to overall life satisfaction than healthy eating behaviors. The relationship between work engagement and life satisfaction has also been highlighted in some studies (e.g., Lizano, 2021; Polo-Vargas et al., 2018). There are significantly fewer studies that directly address the role of eating behavior and life satisfaction, just to mention the study by Morales et al. (2014), in which the authors argue that higher overall subjective well-being is associated with healthy eating behaviors.

Figure 4. *Linear modelling results of predictor importance for work engagement and health related nutrition behavior for life satisfaction*



Discussion

The study examined the relationship between health-related nutritional habits, work-related outcomes, and general life satisfaction. The purpose of the study was to discover whether nutritional habits are correlated with general life satisfaction and work-related outcomes, and if they have the predictive power of the mentioned constructs.

Our results confirmed the findings of studies investigating the direct link between nutrition, work-related outcomes (Boles et al., 2005; Katz et al., 2014; LeCheminant et al., 2015; Merrill et al., 2013; Pelletier et al., 2004; Shi et al., 2013; Van Duijvenbode et al., 2005), and general life satisfaction (LeCheminant et al., 2015). Significant correlations were shown to exist between nutrition, employee engagement, employee efficiency, and life satisfaction. Nutrition was also imposed as a statistically significant predictor of employee engagement, employee efficiency, and life satisfaction. The results showed that employees who eat healthier are more satisfied with their lives, more engaged at their workplace, and work more efficiently as compared to employees with a less healthy diet.

Accordingly, employees with less healthy eating habits are less satisfied with their lives, less engaged at work, and have a lower work efficiency. As confirmed by the above-mentioned research, the correlations between employee efficiency and employee engagement (Burton et al., 2017, Merrill et al., 2013; Robertson

& Cooper, 2009), and between employee efficiency and general life satisfaction (Burton et al., 2005), are statistically significant. They also complete their tasks more quickly and with less effort compared to employees who are not engaged. However, employees who are dissatisfied with their lives are less engaged at their workplace, while life satisfaction is positively correlated with success at work and health (Diener et al., 1997; Myers & Diener, 1995). Healthy eating habits also predict greater satisfaction with life (LeCheminant et al., 2015). Combining the results of previous and our research, the constructs can be interconnected, and we may assert that employees who are eating healthier are more satisfied with their lives. At the same time, nutritional habits directly affect employees' engagement, meaning that employees who eat healthier are more engaged, and consequently, also more efficient. Finally, eating habits are directly linked to employee efficiency, meaning that employees with a healthier diet are more work efficient, and as such, their well-being is also higher (Donald et al., 2005).

Eating habits are therefore of considerable importance for employees' well-being, health, life satisfaction, engagement, and efficiency. All of the mentioned variables are substantial with regard to the quality of work done by employees. Achieving good work-related outcomes is strongly linked to the good health of an employee (Boles et al., 2004; Burton et al., 2017; Merrill et al., 2013) and his/her well-being (Robertson & Cooper, 2009). Satisfied employees see more opportunities at the workplace, are more willing to help others, and are more successful (Cropanzano & Wright, 2001; Diener et al., 1997; Myers & Diener, 1995). Success at the workplace is also positively correlated with employee efficiency (Burton et al., 1999), and negatively with absenteeism (Merrill et al., 2013). The same trend exists with engagement, meaning more engaged employees have lower levels of absenteeism (Hoxsey, 2010). They experience positive emotions more often, create their own resources (Bakker & Demerouti, 2008), are more concentrated and more efficient (Park & Gursoy, 2012).

Interestingly, in the last regression analysis, we found that life satisfaction is a stronger predictor of employee engagement than healthy eating habits. This confirmed our last hypothesis. The association between life satisfaction and employee engagement is also supported by a number of studies (e.g., Liu et al., 2019; Lizano, 2021), and we ourselves find that healthy eating habits are nevertheless not as strong predictors of life satisfaction as work-relevant outcomes, such as work engagement.

Implications for practice

Our findings have practical implications for organizational practices, since they stipulate nutrition as an important factor in achieving good work results. The effectiveness of organizations depends not only on the fulfilment of productivity

goals (productivity, profit, market share, etc.), but rather largely on employees with their abilities, knowledge, skills, and personality traits, which includes motivation, will, self-image, values, and other emotions. In other words, employees with their infinite development potential have become the foundation of organizational development. And for this the good health of employees is essential. Moreover, employers should consider that putting in health is an investment leading to the better health of their employees (Burton et al., 2005), a higher quality of work, greater creativity, and improved intellectual capacity of employees (Riedel et al., 2001), which is returned as increased employee efficiency (Burton et al., 2005) and, consequently, higher profits of an organization (O'Donnell, 2000). Improving employees' productivity is essential for organizational competitiveness, as it has been confirmed that interventions aimed at reducing health-related risk behaviors (unhealthy diet) are potentially the most effective in reducing productivity loss (Shi et al., 2013). We have therefore found that the value of our results lies in raising awareness among employers about the importance of implementing workplace health promotion, which has proven to be one of the most successful incentives by many researchers (Burton, 2005; Hutchinson, & Wilson, 2011; Mitchell et al., 2013; O'Donnell, 2000; Pelletier et al., 2004, Riedel et al., 2001). After implementing workplace health promotion, employees adopt healthier eating habits (Goetzel & Ozminkowski, 2008) and thus reduce health risk factors, which in the aftermath is evident in increased employee efficiency and lower absenteeism. In the long term, this is rewarded with lower healthcare costs, as well as costs associated with reduced employee efficiency (O'Donnell, 2000).

Since good employee health can augment organizational profitability and help achieve other goals, health promotion objectives can be aligned with the mission of an organization (Goetzel & Ozminkowski, 2008). At the same time, workplace health promotion can have a substantial effect on the work climate (O'Donnell, 2000) and can give employees a sense of support from their supervisors, resulting in positive consequences for both the employee and the employer. Employees are more satisfied in a caring and supportive environment, and consequently put more effort into their work as they work more efficiently (Yoon et al., 2001). Workplace health promotion also increases the desire and motivation to work through boosting work morale, while improving communication and increasing employee trust in the employer (O'Donnell, 2000).

Considering the amount of time spent at the workplace (Quintiliani et al., 2010), access to many persons, working networks and possible employer incentives (Green, 1988), the working environment is one of the most important places where individuals can be encouraged to eat healthy. There is growing evidence that worksite programs can yield acceptable financial returns to employers that invest in them (Goetzel & Ozminkowski, 2008), but workplace health promotion is not the only possibility. Employers have many different options through which they can promote healthy eating, such as educating on healthy nutrition and its relevance, and promoting

a healthy lifestyle. Another possibility is providing healthy eating choices at work (Quintiliani et al., 2010). There are obviously many possibilities for changes in the researched field. These may be small, such as offering fresh fruits and unsweetened tea at work. However, employers, as an important tie in the nutrition of employees, can take a further step forward and decide on a planned and systematic attempt to improve employees' eating habits. This can be achieved by educating on healthy eating, motivational posters inside the company, as well as through organizational climate building – a climate in which employees feel support and assistance from both the employer and their colleagues. On the employees' side, the changes do not have to be drastic. Implementing breakfast as a daily habit or consuming more fruits and vegetables is a good start to build on. However, the daily eating habits of employees are far from commendable. Research shows that the current active working population is one of the most endangered groups in Slovenia in terms of eating habits. Employees don't have a regular eating rhythm, their calorie intake is too high, and they consume too much salt and sugar while not eating enough vegetables. On this point, it is essential that organizations promote healthy choices to employees and grant them possibilities to eat healthy. The results of our research represent a starting point that can stimulate improved nutrition in Slovenia and worldwide. The awareness of employers that employees bring great potential for contributing to an organization's performance is crucial to implement potential changes and achieve improvements in this field. Hence, there is an existing need to educate on the importance of healthy nutrition and its effects, and to promote it further.

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SOCIO-DEMOGRAPHIC CHARACTERISTICS, JOB DEMANDS AND WORK-LIFE BALANCE OF HEALTHCARE WORKERS

Abstract

Healthcare has justly earned a reputation for demanding schedules. Healthcare workers often subjugate personal needs for their work. These adjustments make it difficult to maintain a work-life balance. This study aimed to examine whether there are differences in the work-life balance depending on the socio-demographic characteristics and job-related characteristics of healthcare workers. The sample consisted of 257 healthcare workers (74.7% female) from three hospitals in Bosnia and Herzegovina, mean age of 40.75 ($SD = 11.71$). We used the Work-Life Balance Scale, which measure: work interference with personal life, personal life interference with work and work/personal life enhancement, and the Socio-demographic and Job-related Characteristics Questionnaire. The multivariate analysis of variance and the post hoc tests were used for data processing. Results have shown that healthcare workers aged 31 to 40 years, with 6 to 15 years of service, dissatisfied with income, and working in multiple shifts to the highest degree feel that work interferes with their personal lives. Also, results have shown that healthcare workers who are primarily satisfied with income demonstrate the highest degree of work/personal life enhancement. This study's findings indicate that the work-life balance of health workers varies depending on their demographic and job characteristics.

Keywords: work-life balance, healthcare workers, socio-demographic characteristics, job-related characteristics

Introduction

Employees in each working sector have certain obligations at the workplace, in families and in society, which is sometimes hard to harmonize and reach a

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satisfying balance between different expectations and roles. In cases of imbalance, work or private life or both may be affected what cause negative consequences to the individual, family, organizational and social functioning. In the last few decades, work-life balance has become a widely explored area.

Researchers focused on different aspects of work-life balance used various concepts and measures of work-life balance, and still, in theory in practice, it is not a precise model. One of the most cited definitions is that work-family balance is satisfaction and good functioning at work and home, with a minimum of role conflict (Clark, 2000). In the wide range of definitions, Zedeck and Mosier (1990) describe five typical models which define life work relationships. The segmentation model describes work and private life as two separate models that don't include interference. In opposite, the spillover model suggests that these two domains may positively or negatively influence each other, which may consist of attitudes toward ourselves and others, which means that there are no clear boundaries in one's behavior. The third model is the compensation model, which suggests that if the person is found missing in one domain, he tries to compensate in another field. The relationship between the job and private life is reciprocal. The instrumental model implies that success in one domain is instrumental and supportive in another life domain. The last model is the conflict model, which suggests that high demands in different life domains generate conflict for the overloaded individual who has to choose between time and commitment to other fields.

Researchers are consentient in findings that work-life balance is of great importance in employees' organizational and personal functioning. The work-life imbalance may cause employees' physical, mental, behavioral problems and cause problems in working places. Kalliath and Brough (2008) have found that poor work-life balance leads to anxiety, depression, guilt, and problematic drinking and reduces general health and energy levels. Also, insufficient work-life balance cause emotional exhaustion, cynicism and burnout (Anderson et al. 2002; Kinman & Jones, 2003), cognitive difficulties such as staying awake, lack of concentration, and low alertness (Mac Ewen & Barling, 1994). Hobson et al. (2001) state that the absence of work-life balance has been linked to many negative consequences that could be detrimental to employee performance. The work-life balance is related to organizational commitment, turnover intentions, work stress, poor performance, perceived job overload to productivity, and attrition rate (Allen et al., 2000; Rainayee, 2012). Aryee et al. (1999) and Glass and Estes (1997) emphasized that balancing work and family demands affects employees' physical and mental health, and occupational variables such as job satisfaction, performance, absenteeism, and turnover intentions of employees. Diaz Serano and Vieira (2005) identified that job satisfaction significantly predicts overall well-being and employee intentions to quit. On the other hand, persons who perceive their work-life relationship as balanced will experience a sense of harmony in life and optimal psychophysical conditions that enable them

to meet the long-term demands of work and non-work roles (Greenhaus et al., 2002; Thompson et al., 2003).

Regarding factors affecting the work-life balance, different authors are unique and grouped them as an individual, family and organizational factors (i.e. Burke & Greenglass, 1999; Jennings & McDougald, 2007). Ghalawat and Dahiya (2010) identify some critical organizational factors related to work-life balance. These include long working hours, peer pressure, multi roles, and headcount reduction measures. Long working hours, work in shifts, and weekends have a strong influence as an important factor in managing both the work and life dimensions. Employees working longer hours are slightly more likely to report a greater imbalance in the work-life relationship (Macky & Boxall, 2008; Santhana et al., 2013). Job demands (Chiang et al., 2010) are also identified as important form maintenance of work-life balance. Work overload is detrimental to work-life balance (Deery et al., 2002; Vogel, 2012). Work tasks sometimes are a large amount of job to do, time and colleague pressure, which require mental and physical efforts. Although created to benefit employees, technological advancement may disturb work-life balance because it disrupts employees' lives outside their work (Lester, 1999; McGowan et al., 2007). Work roles may result in stressful outcomes; the conflicting roles have proved to harm employee work-life balance (Carlson & Kacmar, 2000). Blunt and Jones (2004) explain that people work best when they know what is expected. They like to reach a goal or exceed a target if it is agreed with the employees. Employees working in organizations with repetitive roles and having little influence over their work can have adverse outcomes on self-esteem, which can result in low morale in their work-life balance. Some factors at the individual level are personality traits (Turliuc & Buliga, 2014). Regarding Greenhaus and Beutell (1985), factors that deteriorate personal work-life conflict are high neuroticism, low level of tolerance and the ability to compromise, low self-perception of own effectiveness, and workaholism. The family roles are also the factor of work-life balance. Southworth (2014) states that gender is related to establishing work-life balance, like parenting and the partner's support life (Ferguson et al., 2012). Family responsibilities such as household time demands, family responsibility level, household income, spousal support and life course stage are sources of work-life imbalance (Jennings & McDougald, 2007).

As people have different needs considering gender, age, tenure and marital status, some research focused on the relationship between socio-demographic characteristics and aspects of life balance. For gender, there is conflicting evidence for gender differences in work-life balance. Some studies (i.e., Behson, 2002; Carlson & Lankau, 2001; Morgenroth et al., 2021; Nielson et al., 2008) found that women have more work-life conflict than men. Gutek et al. (1991) attribute this to the fact that women continue to play the primary role of providing care and other household activities even when confronted with increased job demands. On the other hand, some studies (i.e., Goldberg, 1978; Hu & Bentler, 1999; Martin,

Sanderson & Cocker, 2009) found no significant difference between men and women.

Scientific research reports and statistical statements drawn up by international organizations rarely consider the individual's age as a factor that generates conflict between work and family life (Richert-Kazmierska & Stankiewicz, 2016). However, Crompton and Lyonette (2005) found that younger people (due to parental responsibilities, the initial phase of career development, etc.) are more likely than older ones to report a poor work-life balance. Richert-Kazmierska and Stankiewicz (2016) found that older individuals report a higher level of satisfaction with the achieved work-life balance than the younger ones. Also, the results of the Quality-of-Life Survey (2008) conducted among New Zealanders in 2008, it appears that the working people aged 55–64 years and 65 years or more report that they are most satisfied with the achieved work-life balance among all age groups. Penner et al. (2003) associate the possibility of work-life balance growth among seniors with activities aimed at increasing labour market flexibility and better adapting to the needs of this population. Similarly, Branch (2008) found that younger employees were significantly more likely to use work-life balance initiatives than their older co-workers. Furthermore, Allen (2001) found that younger employees are more likely than older employees to participate in work-life balance initiatives such as flextime, telecommuting, and working from home. Regarding tenure, Smith and Gardner (2007) claim that employees with longer tenure are more able to adjust their work commitments with their non-work obligations, and more satisfied with their work-life balance.

Work-life balance differences concerning employee income have rarely been investigated. However, Kundnani and Mehta (2014) found a positive correlation between income and work-life balance on a sample of employees from India; as income increases, work-life balance also increases. Also, Liu et al. (2021) found lower-income healthcare workers from China report lower work-life balance. On the other hand, Warriar (2013) found that salary as a variable had no significant impact on employees' work-life balance in the IT sector, while Padmasiri and Mahalekamge (2016) found that salary as a variable had no significant effect on employees' work-life balance in the academic sector.

Numerous studies have found that shift work hurts work-life balance (Albertsen et al., 2007; Nijp et al., 2012). For workers who do not work in shifts, the work-family interface is improved. Employees who work in shifts have less time and energy to devote to other aspects of their lives, such as family life. Furthermore, shift employment means that less time is available during the hours dedicated traditionally to personal life (Kelly et al., 2011). According to role theory (Kahn et al., 1964; Pleck, 1977), employees who work in shifts possess limited resources for role fulfilment such as time or energy. It may result in difficulties organizing one's daily life (Martens et al., 1999), but it may also result in biological and social desynchronization (Tucker & Folkard, 2012). In her study,

Williams (2008) found that shift workers were significantly more dissatisfied with their work-life balance than regular day workers. Also, they were more suffer from role overload (Williams, 2008).

Marital status and work-life balance relationship are not unique in findings. Namely, Caligiuri and Tung (1999) found that unmarried employees generally experience less work-family conflict. Panisoara and Serban (2013) compared four categories of employees; unmarried, married without children, married with children under 18, married with children over 18, and didn't find a significantly different level of work-life balance.

Healthcare has justly earned a reputation for demanding schedules. Healthcare workers often subjugate personal needs for their work. These adjustments make it difficult to maintain a work-life balance (Fanny, 2013). Therefore, this study aimed to examine whether there are differences in the work-life balance depending on the healthcare workers' socio-demographic and job-related characteristics: gender, age, duration of service, marital status, income and work in shifts. Keeping in mind the findings of the studies above, we expect that female, younger, health care workers with fewer years of service, married, with lower incomes, and working in shifts are showing a lower level of work-life balance.

Method

Participants and Procedure

The sample consisted of 257 healthcare workers (74.7% female) from three hospitals in Bosnia and Herzegovina. Participants' level of education ranged from a high school degree (37%), a college degree (10%), a university degree (44.4%), to a postgraduate study degree (8.6%). In terms of age, the sample was divided into four age cohorts: up to 30 years of age (25.7%), 31-40 years (27.6%), 41-50 years (20.2%), and over 51 years (26.5%). In terms of the duration of service, the sample was divided into four cohorts: up to 5 years of service (23.3%), 6-15 years (31.1%), 16-25 years (22.2%) and more than 26 years (23.4%). Less than half of the participants (45.5%) work in multiple shifts. In terms of the income, there were 12.8% extremely dissatisfied, 19.5% mostly dissatisfied, 32.3% neither satisfied nor dissatisfied, 33.5% mostly satisfied, and 1.9% completely satisfied. In terms of marital status, 61.9% are married, while 38.1% are not.

The study was conducted in January and February 2020. Data were collected in hospitals 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

Work-Life Balance Scale (WLBS; Hayman, 2005). The scale consists of 15 items designed to assess three dimensions of work-life balance: work interference with personal life (WIPL), personal life interference with work (PLIW), work/personal life enhancement (WPLE). Respondents were asked to use a 7-point Likert-type scale ranging from 1 = *Never* to 7 = *Always* to indicate how frequently they felt in each of the following ways in the previous three months. For the WPLE subscale, higher means indicate higher levels of perceived work-life balance. Higher means for the WIPL and PLIW subscales indicate lower work/life balance levels. For this study, the Cronbach's alpha was .91 for WIPL, .79 for PLIW, and .70 for WPLE.

Socio-demographic and Job-related Characteristics Questionnaire. The questionnaire consisted of five questions about the following demographic characteristics: gender, age, level of education, marital status and income, and two questions about the following job-related characteristics: duration of service and work in shifts.

Data analysis

In data analysis, we used the following statistical procedures: descriptive statistics, correlation analysis, Multivariate Analysis of Variance (MANOVA) and 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 and correlations for the subscales of the Work-Life Balance Scale. Measures of means and variability, skewness and kurtosis indicate that results of the respondents on the WPLE subscale were pushed towards higher values, while that results of the respondents on WIPL and PLIW subscales were pushed towards lower values (Tabachnick & Fidell, 2001). The obtained correlations between the subscales of the Work-Life Balance Scale are expected (Hayman, 2005). The correlation between WIPL and PLIW subscales is positive and of strong intensity (Cohen, 1988), while the correlation between WIPL and WPLE subscales is negative and of moderate intensity, and the correlation between PLIW and WPLE is negative and of weak intensity.

Table 1. Descriptive statistical measures and correlations for subscales of the Work-Life BalanceScale

	Min	Max	M	SD	Sk	Ku	Correlations	
							WIPL	PLIW
WIPL	1.00	7.00	2.53	1.16	1.24	2.20	1.00	
PLIW	1.00	5.25	1.75	0.77	1.63	3.80	.61***	1.00
WPLE	1.00	7.00	1.17	1.17	0.21	-0.11	-.37***	-.25***

Note. WIPL = work interference with personal life, PLIW = personal life interference with work, WPLE = work/personal life enhancement, *** $p < .001$

The MANOVA was used to examine differences in work-life balance considering the socio-demographic and job-related characteristics of healthcare workers: gender, age, education, duration of service, marital status, income and work in shifts. The obtained results (Table 2) showed a significant difference in the work-life balance depending on healthcare workers' socio-demographic and job-related characteristics: age, duration of service, income and work in shifts. However, the effect size is small when age, length of service, and shift work are considered. Age explains only 2.9 % of the variance in work-life balance, duration of service explains only 2.5% of the variance, and working in shifts explains only 5.2% of the variance in work-life balance. When it comes to income, the effect size is medium. Income explains 7.6% of the variation in work-life balance.

Table 2. Multivariate differences in the work-life balance considering gender, age, duration of service, marital status, income and work in shifts

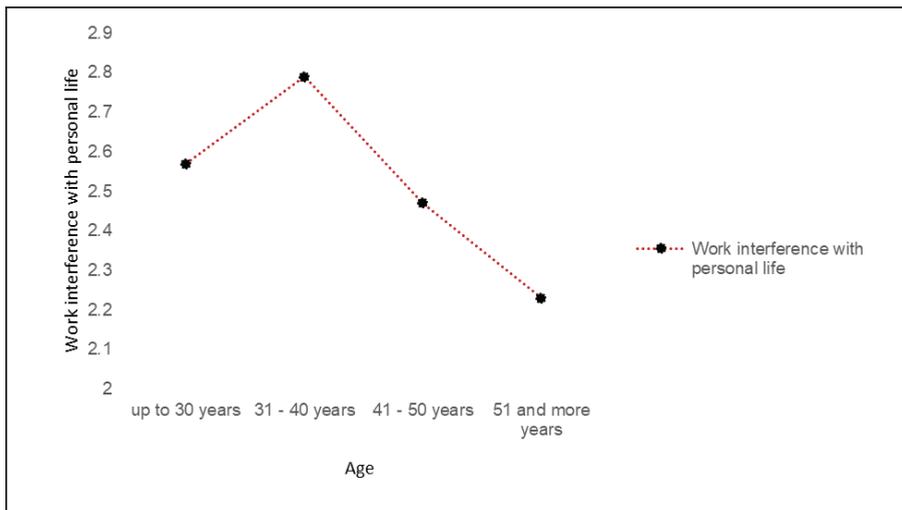
Socio-demographic and job-related characteristics	Wilks' Lambda	F	df	Error df	p	η^2
Gender	.981	1.332	3	245.000	.250	.019
Age	.916	2.399	9	589.115	.011	.029
Duration of service	.925	2.055	9	572.079	.032	.025
Marital status	.939	1.711	9	591.549	.083	.021
Income	.790	4.980	12	640.563	.000	.076
Work in shifts	.948	4.449	3	245.000	.005	.052

The results of the univariate effects indicate that there are no significant differences in WPLE ($F(1,255) = 1.699, p = .194, \eta_p^2 = .007$), WIPL ($F(1, 255) = 712, p = .400, \eta_p^2 = .003$) and PLIW ($F(1, 255) = 1.169, p = .281, \eta_p^2 = .005$) considering the gender of healthcare workers.

The results of the univariate effects have shown a significant difference in WIPL ($F(3,254) = 2.681, p = .004$), considering the age of healthcare workers. Applying the Bonferroni correction ($p = .012$) did not change the previously obtained results. However, the effect size is small. The age explains only 3.2% of

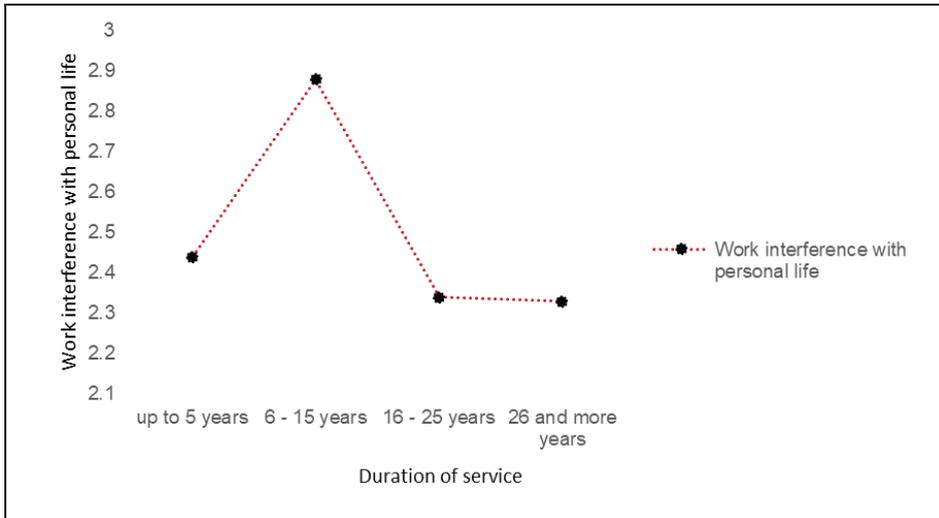
the variance in WIPL ($\eta_p^2 = .032$). Since we have an unequal number of subjects in cells of different ages, and the Levene test showed that the variances are not equal ($F(3,254) = 3.47, p = .017$) we used Dunnett's C post hoc test. Results reveal that healthcare workers aged 31-40 years show the highest level of WIPL ($M = 2.79, SD = 1.42$), while healthcare workers 51 and more years show the lowest level of WIPL ($M = 2.23, SD = .93$). Healthcare workers age up to 30 years and 41-50 years do not significantly differ in WIPL, nor do they differ significantly in WIPL from healthcare workers aged 31-40 years and 51 and more years (Figure 1).

Figure 1. *The work interference with personal life and age*



The results of the univariate effects have shown a significant difference in WIPL ($F(3,254) = 3.543, p = .015$), considering the duration of service of healthcare workers. Calculating the Bonferroni correction ($p < .025$) did not change the previously obtained results. However, the effect size is small. The age explains only 4.3% of the variance in WIPL ($\eta_p^2 = .043$). Since we have an unequal number of subjects in cells of different duration of service, and the Levene test showed that the variances are not equal ($F(3,254) = 4.03, p = .008$) we used Dunnett's C post hoc test. Results reveal that healthcare workers with 6-15 years of service show the highest level of WIPL ($M = 2.88, SD = 1.42$), while healthcare workers with 26 and more years of service show the lowest level of WIPL ($M = 2.33, SD = .82$). Healthcare workers with up to 5 years of service and those with 15-25 years of service do not significantly differ in WIPL, nor do they differ significantly in WIPL from healthcare workers with 6-15 years and 26 and more years of service (Figure 2).

Figure 2. *The work interference with personal life and duration of service*

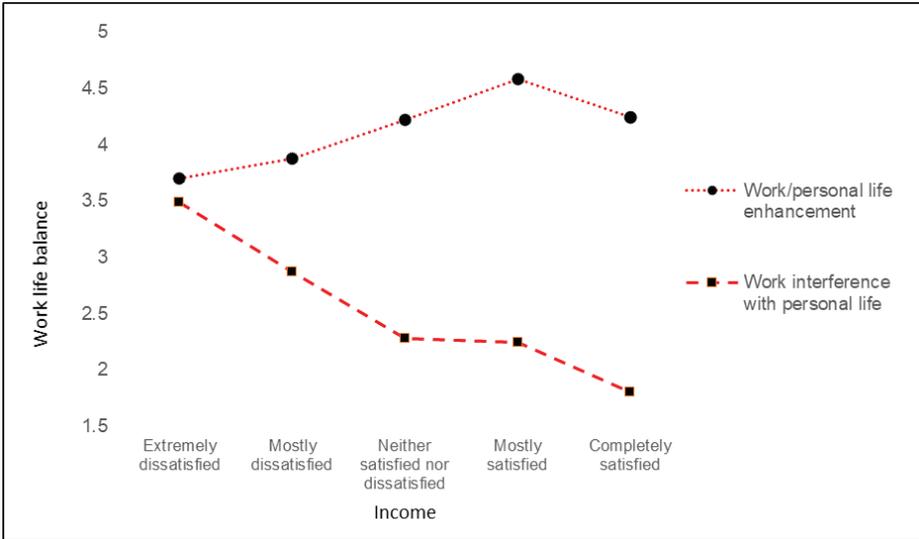


The results of the univariate effects indicate that there are no significant differences in WIPL ($F(3,254) = .868, p = .462, \eta_p^2 = .010$), PLIW ($F(3,254) = 1.01, p = .390, \eta_p^2 = .012$) and WPLE ($F(3,254) = 2.182, p = .091, \eta_p^2 = .026$) considering the marital status of healthcare workers.

The results of the univariate effects have shown a significant difference in WIPL ($F(4,253) = 10.822, p = .000$) and WPLE ($F(4,253) = 4.890, p = .001$) considering the income of healthcare workers. Calculating the Bonferroni correction ($p < .01$) did not change the previously obtained results. For WIPL, the effect size is large. The income explains 15.1% of the variance in WIPL ($\eta_p^2 = .151$). For WPLE, the effect size is medium. The income explains 7.4% of the variance in WPLE ($\eta_p^2 = .074$). Since we have an unequal number of subjects in cells of different income, and the Levene test showed that the variances are not equal ($F(3,907) = 8.017, p = .000$ for WIPL and $F(3,907) = .296, p = .000$ for WPLE), we used Dunnett's C post hoc test. Results reveal that healthcare workers who are extremely dissatisfied with income show the highest level of WIPL ($M = 3.50, SD = .19$), while healthcare workers who are completely satisfied with income show the lowest level of WIPL ($M = 1.80, SD = .48$). Healthcare workers who are extremely dissatisfied and mostly dissatisfied with income do not significantly differ in WIPL. Also, healthcare workers who are neither satisfied nor dissatisfied, mostly dissatisfied and completely satisfied with income, do not significantly differ in WIPL. Regarding WPLE, results reveal that healthcare workers who are extremely dissatisfied with income show the lowest level of WPLE ($M = 3.70, SD = .20$), while healthcare workers who are mostly satisfied with income show the highest level of WPLE ($M = 4.25, SD = .51$). Healthcare workers who are completely satisfied and neither satisfied nor

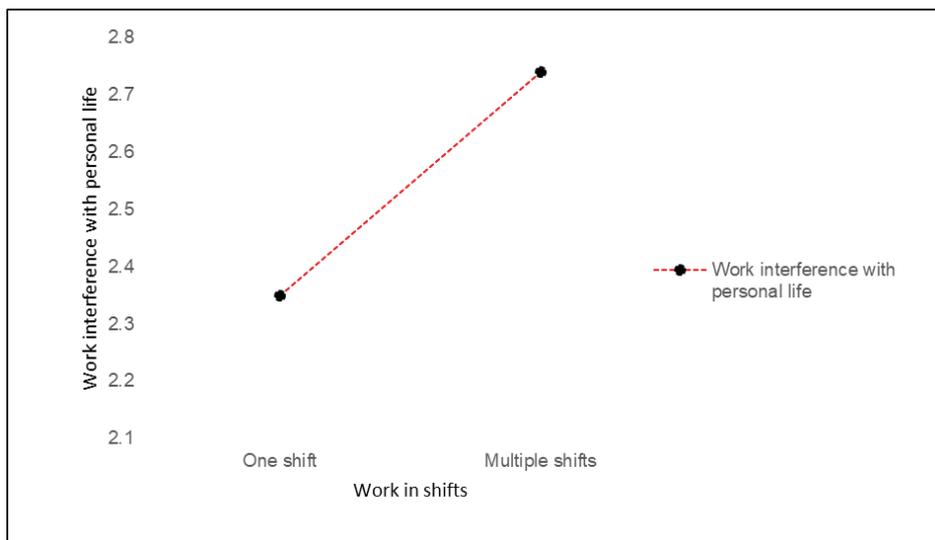
dissatisfied with income do not significantly differ in WPLE, nor do they differ significantly in WPLE from healthcare workers who are extremely and mostly dissatisfied and mostly satisfied with income (Figure 3).

Figure 3. *The work interference with personal life, work/personal life enhancement and income*



The results of the univariate effects have shown a significant difference in WIPL ($F(1,246) = 7.128, p = .008, \eta_p^2 = .028$) considering working in shifts of healthcare workers. Calculating the Bonferroni correction ($p < .025$) did not change the previously obtained results. Given the inequality of variance for variable WIPL, a t-test for independent samples was also conducted, and obtained results show the differences between healthcare workers who work in one shift and multiple shifts in WIPL ($t(908) = -2.611, p = .010$) are statistically significant. However, the effect size is small. The work in shift difference explains only 1.7% of the variance in WIPL ($\eta_p^2 = .017$). Healthcare workers who work in multiple shifts show a higher level of WIPL ($M = 2.74, SD = 1.33$) than healthcare workers who work in one shift ($M = 2.35, SD = .97$) (Figure 4).

Figure 4. *The work interference with personal life and work in shifts*



Discussion and conclusion

This study aimed to investigate whether there are differences in the work-life balance depending on the socio-demographic and job-related characteristics of healthcare workers. The obtained results have shown the significant differences in healthcare workers work-life balance depending on their socio-demographic and job-related characteristics: age, duration of service, income, and shifts work.

When it comes to age and tenure, healthcare workers aged 31-40 years and employees with service duration of 6-15 years show a higher level of WIPL compared to other groups of employees. Most healthcare workers' aged 31-40 overlap with a mentioned length of service. Work-life balance requirements vary at different stages in the life of an employee. Age 31-40 years is for most employees in our community, a period when they have children of younger age that involves additional requirements and obligations. Crompton and Lyonette (2005) also found that younger employees with parental responsibilities, in the initial phase of career development, etc., are more likely than the older ones to report the occurrence of work-life balance disruptions. Allen (2000) also claim that younger employees are likely to have fewer external demands on their time as they have not established their families. Employees with adult children can more easily balance work and family demands than those with younger kids. Similarly, Padma (2013) and Williams and Alliger (1994) found a negative correlation between age and work-life conflicts, and Richert-Kazmierska and Stankiewicz (2016) confirmed that employees in their forties and fifties are more often to report that

they maintain a work-life balance. Also, Eurofound (2017) survey confirms that work's negative impact on work-life balance is usually concentrated in the early stages of parenting when employees in the household have pre-school children. Finally, Smith and Gardner (2007) claim that employees with longer tenure are more able to adjust their work commitments with their non-work obligations and more satisfied with their work-life balance. So, our obtained results are expected.

Considering the income, healthcare workers who are extremely dissatisfied with income show the highest level of WIPL, while healthcare workers who are completely satisfied with income show the lowest level of WIPL. Besides, the highest degree of work/personal life enhancement is shown by healthcare workers who are mostly satisfied with income, while healthcare workers who are mostly dissatisfied with income show the highest level of work/personal life enhancement. These results are also expected. Namely, Crouter and Booth (2004) and Warren (2015) have also found that financial pressure destabilizes working-class workers' work-life balance. Warren (2015) describes that lack of money may disturb the quality of life through poor housing, inadequate feeding, and deficient leisure. Fagan et al. (2008) also state that financial insecurity is essential for work-life balance, especially in working-class members, who cope with fundamental problems such as housing costs or afford an annual holiday. Further, Kundnani and Mehta (2014) found a positive correlation between income and work-life balance; as income increases, work-life balance also increases. Finally, Liu et al. (2021) found that healthcare workers from China, with lower revenue, also report insufficient work-life balance. So, our findings are consistent with those of previous studies.

When it comes to working in shifts, healthcare workers who work in multiple shifts show a higher level of WIPL than healthcare workers who work in one shift. This finding is also in line with the results obtained in previous studies (i.e., Kelly et al., 2011; Williams, 2008). Kelly et al. (2014) found that working in shifts results in work-life conflict in their study. Working in shifts may result in difficulties organizing one's daily life (Martens et al., 1999). Lesnard (2008) claims that shift work aggravates the synchronization of the time schedules of workers with those of their family and friends. Employees who work in shifts have less time and energy to devote to other aspects of their lives (Kelly et al., 2011). Besides, Sveinsdóttir (2006) have found that nurses working rotating days/evenings shifts experienced more severe gastrointestinal and musculoskeletal symptoms when compared with others. Gastrointestinal disorders are confirmed in another research (i.e., Nojkov et al., 2010). Admi et al. (2008) have found that female shift workers report significantly more sleep disorders. Those findings are significant in light of Gragnano et al. (2019) findings, who discovered that workers regarded health as equally important as a family in terms of work-life balance.

Considering the gender and marital status of healthcare workers, there were no significant differences in healthcare workers work-life balance. Findings of

studies from different countries and working sectors (i.e., Chaudhry et al., 2011; Eagle et al., 1997; Malik, et al., 2010; Milkie & Peltola, 1999; Warriar, 2013; Wesley & Muthuswamy, 2005) also have shown that there is no gender difference in work-life balance. Regarding marital status, Panisoara and Serban (2013) four categories of employees' marital status: unmarried, married without children, married with children under 18, married with children over 18 and also, didn't find a significant difference in work-life balance of these categories of employees. It seems that work-life balance is not a universal issue. It is not confined to a specific gender or marital status. Both men and women, married and unmarried at different stages of their careers, are challenged to achieve work-life balance (Darcy et al., 2012).

Finally, the present study has several limitations. First, the study used a convenience sampling method, so our sample is probably not representative. Second, this research did not include individual factors, such as neuroticism, level of tolerance and the ability to compromise, self-perception of own effectiveness, workaholism, partner's support and family responsibility level, and organizational factors, such as job demands, work roles, working hours, work rules, workload, time pressure, organizational support, are important factors of work-life balance (e.g., Carlson & Kacmar, 2000; Chiang et al., 2010; Deery et al., 2002; Ferguson et al., 2012; Greenhaus & Beutell, 1985; Jennings & McDougald, 2007; Macky & Boxall, 2008; Santhana et al., 2013; Vogel, 2012). Therefore, future research should examine their contribution to healthcare workers work-life balance. Third, the study did not register variables such as type of job (nurses vs. doctors) and job position (executor vs. manager), which also could be a relevant factor for work-life balance. For example, doctors, in comparison to nurses, have higher responsibilities. Also, aside from working in hospitals, many of them take part in academic activities (teaching). Therefore, future research should include these variables and examine differences in the work-life balance of health professionals concerning these variables.

In conclusion, this study's results have shown that age, duration of service, income and work in shifts are significant determinants of healthcare workers work-life balance. The results suggest that intervention programs aimed to increase healthcare workers work-life balance should primarily target healthcare workers aged 31-40 years, with 6-15 years of service, who are highly dissatisfied with income and working in multiple shifts because they show the highest level of WIPL. However, to make the interventions as effective as possible, it is necessary to examine which organizational/job factors interfere with the personal life of healthcare workers and work on improving them. Healthcare workers play a significant role in the health care system. Thus, it is necessary to take care of their needs and enhancement their work-life balance. The result of which could be more quality care for clients.

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SOCIO-DEMOGRAFSKE KARAKTERISTIKE, KARAKTERISTIKE POSLA I RAVNOTEŽA IZMEĐU POSLOVNOG I PRIVATNOG ŽIVOTA ZDRAVSTVENIH RADNIKA

Rezime

Zdravstvo opravdano ima reputaciju profesije sa zahtevnim rasporedom posla. Zdravstveni radnici često potčinjavaju lične potrebe potrebama posla. Ova prilagođavanja otežavaju održavanje ravnoteže između posla i privatnog života. Ova studija je imala za cilj da ispita da li postoje razlike u ravnoteži između poslovnog i privatnog života u zavisnosti od socio-demografskih karakteristika zdravstvenih radnika i karakteristika njihovog posla. Uzorak je činilo 257 zdravstvenih radnika (74,7% žena) iz tri bolnice u Bosni i Hercegovini, prosječne starosti 40,75 godina ($SD = 11,71$). Korištena je Skala ravnoteže između posla i privatnog života (Hayman, 2005), koja meri: ometanje ličnog život od strane posla, ometanje posla od strane ličnog života i ravnotežu radnog i ličnog života, i Upitnik socio-demografskih karakteristika i karakteristika posla. Za obradu podataka korišćena je Multivarijantna analiza varijanse i post-hoc testovi. Rezultati su pokazali da zdravstveni radnici starosti od 31 do 40 godina, sa 6 do 15 godina radnog staža, nezadovoljni primanjima i oni koji rade u više smena, u najvećoj mjeri osećaju da im posao remeti lični život. Takođe, rezultati su pokazali da zdravstveni radnici koji su uglavnom zadovoljni primanjima pokazuju najveći stepen ravnoteže radnog i ličnog života. Nalazi ove studije pokazuju da je ravnoteža između posla i privatnog života kod zdravstvenih radnika prisutna u različitom stepenu s obzirom na njihove demografske karakteristike i karakteristike njihovog posla.

Ključne reči: ravnoteža između poslovnog i privatnog života, zdravstveni radnici, socio-demografske karakteristike, karakteristike posla

**COGNITIVE
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EFFECT OF STIMULUS CONGRUENCE ON DIVIDED ATTENTION

Abstract

Divided attention refers to the ability to simultaneously process multiple information, or to perform two tasks. Color of stimulus is a characteristic that allows spatial attention to be quickly directed to a particular position in the visual scene. The aim of this study is to examine the effect of stimuli congruence on the efficiency of divided attention. The research was conducted on a sample of 54 participants, students of the Faculty of Philosophy in Banja Luka. A modified task of Mack and Rock (1998) was used to examine implicitly divided attention. The experiment was created in a software package SuperLab for Windows. The color of the new stimulus was varied (congruent/non-congruent with the color of the second stimulus). The obtained results show that there is an effect of color congruence of stimuli on success in performing double tasks. Success in the primary task did not change achievement in the secondary task, while the color of the stimulus did. Color incongruency has increased the efficiency of divided attention.

Keywords: congruence; color; divided attention

Introduction

Attention is the process of selecting the information we will focus on and which is of primary importance to us, with the aim of accelerating the integration and processing of data. Attention is usually considered through three aspects: orientation, filtering, and search. The simplest way to select between several stimuli is to orient our sensory receptors towards one set of stimuli, while distracting attention from others (Laberge & Brown, 1989). Our vision is mostly not just passive observation of the world around us, but active viewing with the intention of seeing. When attention is directed to a certain place in space, then

it is spatial or focal attention, and when attention is focused on a certain object, regardless of whether it is visual, auditory or olfactory, it is the object directed attention. Whether it is a spatial or object directed attention, the range of attention can be controlled with a goal or stimulus that is in the focus of our attention. The greater the range of focus of attention, the less efficient the processing of information in this area (Laberge & Brown, 1989). Then, the farther the stimulus is from the center of the region to which attention is paid, the less efficient is the processing (Eriksen & St. James, 1986). Such an effect is called an attention gradient, where attention acts as a filter by extracting more information from the stimulus to which attention is paid and suppressing information that is extracted from the stimulus to which attention is not paid.

Dividing attention between two or more sources is very difficult. People generally cannot listen to two simultaneous sound streams or watch two sources overlap during the detection of target stimuli in each, especially when the two sources are spatially separated or when they are within the same sensory modality. In the case of observing one object, divided attention will be more successful than when we divide attention on different features of objects that are spatially separated (Bonnell & Prinzmetal, 1998).

When it comes to perceptual processes, the effects of divided attention are usually considered in terms of capacity, which refers to the amount of information that can pass through the system during a certain time interval (Broadbent, 1958; Kahneman, 1973). There are two different groups of models that explain the capacities of divided attention, and these are unlimited-capacity models and fixed-capacity models. Unlimited-capacity models emphasize that the distribution of attention into multiple objects does not limit perception. This does not mean that object recognition will necessarily be fast and accurate, but it does indicate that there is the possibility of parallel processing of multiple stimuli. In contrast, fixed-capacity models assume a limit on the overall rate of information collection. According to this model, processing is serial, one object after another, not at the same time. One of the more prominent theories of perception that has considered both models is a Feature integration theory (Treisman & Gelade, 1980). This theory suggests that when perceiving a stimulus, features are registered early, automatically, and in parallel, while objects are identified at a later stage in processing. The perception of basic characteristics is explained by the unlimited-capacity model, while the perception of characteristics junctions and object identification is explained by the fixed capacity model.

Color is considered a basic characteristic of visual information that can be discriminated against at an early level of processing, when the subject can give a verbal report on the color of the presented content without even being aware that he has noticed it. This was confirmed by research by Treisman and Gelade (1980), which showed that color (in addition to location and movement) is an attribute of a stimulus that pops up in the visual field and is observed without

active engagement of attention. This is in accordance with unlimited-capacity models.

An important aspect of perceptual processing is also the type of information that is processed. Many tasks are based on the use of conflicting information. Research shows that processing is most effective when the stimuli are congruent in some aspects. The Stroop effect is one of the most well-known indicators of difficulty in focusing attention when the word and the color in which the word is written are incongruous (Stroop, 1935). Navon (1977) examined the ability to pay attention to relevant stimuli while ignoring irrelevant ones. Respondents were perceived large (global) letters composed of several small letters (local), and the instruction directed them to the global or local level. Letters on the global and the local level were either congruent or incongruent and results were better in congruent condition. Hommel (1997) found that congruence in interaction with stimulus compatibility leads to the most efficient processing. One study investigated interaction between attention and multisensory processing (Mishra & Gazzaley, 2012). When visual and auditory stimuli were semantically congruent, performance in distributed-attention tasks was improved over non-congruent ones, and even over stimuli presented in only one modality.

The findings of previous studies indicate that color plays a significant role in the distribution of spatial attention. Also, as a basic characteristic, it can be processed automatically, predicted by unlimited capacity models. Although numerous studies have found that the congruence of stimuli is an important factor in their processing, the aim of this study was to examine the effect of this factor on the divided attention. We wanted to examine how the color congruence of the presented stimuli affects the performance of dual tasks involving these stimuli.

Method

Sample

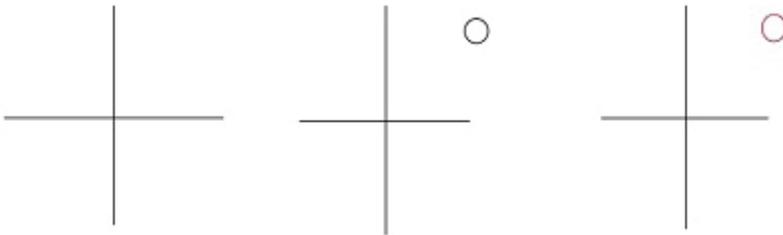
A total of 54 subjects participated in the study. All subjects were undergraduate students of the Faculty of Philosophy in Banja Luka (90% female). The students were aged between 20 and 25 ($M = 21.75$, $SD = 1.4$). Subjects were randomly divided into two equal experimental groups, corresponding to varying experimental factors. Participation in the experiment was individual, and the total duration was five minutes.

Instruments and Procedure

Research based on already mentioned Feature integration theory has mostly used the visual search task. In this task, the participant should find the target in the set of distractors, but attention is actively focused only on the target. To determine how attention can be distributed to multiple stimuli we used a modified Mack &

Rock task (Mack & Rock, 1998) to examine implicitly divided attention. In this task, the participants had to estimate the length of the lines of the cross shown on the screen and to detect the appearance of a new stimulus, localize its position and identify it in a number of offered shapes. The color of the new stimulus was varied (congruent/non-congruent with the color of the second stimulus), so that black and red stimuli were presented. Examples of stimuli are shown on Figure 1.

Figure 1. *Examples of stimuli in experiment*



Each subject participated in the experiment individually. The experimental task began with exposing a fixation point in the center of the computer screen, for 500 milliseconds. After that, a cross appears for 250 ms, and the participants had to make assessment which line is longer, vertical or horizontal. This was the „primary“ task that was repeated through four trials. In fourth trial a new, critical stimulus was presented in one of the cross’s quadrants. Before this trial subjects were instructed to “divide” attention and try to perform two tasks – assessment task and perceiving a new stimulus. A new stimulus was geometric shape (circle) and was presented on an imaginary line intersecting the quadrant at an angle of 45°. In addition to recording the correct answer in the primary task, the accuracy in the secondary task was also monitored. The correct answers were considered if the participant reported that he noticed a new stimulus, if he correctly determined the quadrant in which it was presented, and if he correctly identified it. All participants were given a recognition test, in which they should recognize the critical stimulus in a series of multiple choice forms. Correct identification was considered only when the exact shape was selected. There were two experimental conditions. In one condition circle was black (congruent with cross) and in another circle was red (non-congruent with cross). Experiment was created in SuperLab for Windows.

Data Analysis

We performed two analyzes on the obtained data. We first applied the chi-square test to determine if there was a difference in the detection, localization, and identification of a new stimulus (secondary task) relative to color congruence in the primary and secondary task. Separate analyzes were applied for detection, localization and identification of the new stimulus. All three dependent variables were dichotomous. Although research has shown that stimuli congruence facilitates processing, we expected that color congruence would not have such an effect because color as a basic characteristic is processed quickly, automatically. Our hypothesis was that color inconsistency, especially if the other color is red, would lead to a pop-up in the visual scene, allow faster processing, or have a stronger effect on shifting attention.

In second analysis we performed binary logistic regression. This analysis was applied to determine the predictability of achievement in the primary task and the color congruence of stimuli on performance in the “secondary” task. We included achievement in the primary task as predictor to determine whether it is possible to efficiently divide attention into two tasks so that there will be no increase in performance in one with a simultaneous decrease in efficiency in the other task. Here, too, separate analyzes were done for detection, localization and identification of the new stimulus.

Results

Table 1 shows the measures of descriptive statistics for the primary task in all four trials.

Table 1. *Descriptive statistics for primary task*

	<i>N</i>	Correct Answer	Incorrect Answer	<i>Min</i>	<i>Max</i>	<i>M</i>	<i>SD</i>
First trial	54	38.9%	61.1%	0	1	.39	.492
Second trial	54	53.7%	46.3%	0	1	.54	.503
Third trial	54	70.4%	29.6%	0	1	.70	.461
Fourth trial	54	59.3%	40.7%	0	1	.59	.496

The results show that the smallest number of correct answers was in the first trial, while the largest number was in the third trial. In the second and fourth trials, the efficiency in the primary task was approximately equal, despite the fact that in the fourth trial, the subjects had another additional task and had to pay attention to them.

Table 2 shows the descriptive statistics for the secondary task in relation to the color congruence of the stimuli in two tasks (primary and secondary).

Table 2. *Descriptive statistics for secondary task in relation to the color congruence of stimuli*

		Correct Answer	Min	Max	M	SD
Detection	Congruent	51.6 %	0	1	.52	.508
	Incongruent	91.3 %	0	1	.91	.288
Localisation	Congruent	39.4 %	0	1	.42	.502
	Incongruent	60.6 %	0	1	.87	.344
Identification	Congruent	25.0 %	0	1	.19	.402
	Incongruent	75.0 %	0	1	.78	.422

Based on the presented results, it can be seen that the percentage of accurate detections of a new stimulus is higher if its color is incongruent with the color of the „primary“ stimulus. The obtained difference is statistically significant ($\chi^2(1, 54) = 9.643, p < .02$). When it comes to determining the position of a new stimulus, the percentage of accurate localizations is also higher for incongruent stimuli ($\chi^2(1, 54) = 11.261, p < .01$), and the same effect was obtained in the identification of the stimulus in the secondary task ($\chi^2(1, 54) = 18.555, p < .00$).

To determine whether the effectiveness of divided attention depends on the congruence of stimuli, we applied binary logistic regression, which included two predictors - the color congruence and the success of the primary task in the fourth trial. Second predictor was included because attention is actually distributed to two tasks in that trial. The first predictor variable was coded in such a way that a lower number indicated the correct answer in the task, and a larger number indicated the incorrect answer. Second predictor variable was coded with 0 and 1, where a lower number denoted incongruent stimuli and larger number denoted congruent stimuli. Separate analyzes were performed for all three dependent variables (detection, localization, and stimulus identification). The results are shown in Table 3.

Table 3. Binary logistic regression results for predicting the accuracy of new stimulus detection based on success in the primary task and color congruence as a predictor

	B	S. E.	Wald	df	Sig.	Exp (B)
Success in primary task (fourth trial)	1.332	.722	3.406	1	.065	3.788
Color congruency	-2.652	.874	9.199	1	.002	0.071

Note. B = logistic regression coefficient; SE = standard error; Wald = statistics; Exp (B) = exponential regression coefficient.

When both predictors are included in the analysis, the results show that the model is statistically significant ($-2LL = 52.835, \chi^2(2.54) = 14.438, p < .01$)

and explains 3.2% of the variance. But, analysis of the individual predictors contribution shows that only color congruence is statistically significant. The logistic regression coefficient has a negative sign. Inconsistency significantly contributes to predicting success in the task of detecting a new stimulus.

When the same analysis is performed for the second dependent variable, stimulus localization, the obtained results presented in Table 4.

Table 4. Binary logistic regression results for predicting the accuracy of new stimulus localization based on success in the primary task and color congruence as a predictors

	<i>B</i>	<i>S. E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>	<i>Exp (B)</i>
Success in primary task (fourth trial)	0.688	0.666	1.067	1	.302	1.990
Color congruency	-2.391	0.752	10.120	1	.001	0.092

Note. *B* = logistic regression coefficient; *SE* = standard error; *Wald* = statistics; *Exp (B)* = exponential regression coefficient.

The results show that the model is statistically significant ($-2LL = 58.875$, $\chi^2 (2.54) = 13.296$, $p < .01$) and explains 2.9% of the variance. As in the previous analysis, only the color congruence is a significant predictor of the correct localization of the new stimulus. The value of the exponential regression coefficient is slightly higher than for detection, but its value is still less than 1.

Similar results were obtained for stimulus identification (Table 5). The statistical significance of the model ($-2LL = 53.618$, $\chi^2 (2.54) = 20.574$, $p < .001$) indicates that it can be used to predict the correct recognition of a new stimulus. The percentage of explained variance is 4.2. However, in this case as well, the partial contribution is statistically significant for only one predictor - color congruence.

Table 5. Results of binary logistic regression to predict the accuracy of new stimulus identification based on success in the primary task and color congruence as a predictor.

	<i>B</i>	<i>S. E.</i>	<i>Wald</i>	<i>df</i>	<i>Sig.</i>	<i>Exp (B)</i>
Success in primary task (fourth trial)	-0.673	0.702	0.920	1	.337	.510
Color congruency	-2.649	0.686	14.911	1	.000	.071

Note. *B* = logistic regression coefficient; *SE* = standard error; *Wald* = statistics; *Exp (B)* = exponential regression coefficient.

Discussion and Conclusion

The specific aim of this study is to examine how the color congruence of the presented stimuli affects the performance of dual tasks involving these stimuli. Although the stimuli congruence can increase efficiency of processing, in the case of color, the effect can be opposite. Stimulus color is a characteristic that, due to its visual prominence, is processed almost automatically and attracts attention in the visual scene (Moore & Egeth, 1998; Pöder, 2001; Tsal & Lavie, 1993), so the color incongruency has more positive effect.

In the first part of the analysis, we determined whether the congruence of the color affects the performance in the Mack and Rock task. The color of the new stimulus could be identical (black) or different (black and red). We analyzed the accuracy of stimulus detection, localization and identification, as there are some differences in these processes. Detection is the basic level of perception that refers to the perception of the presence of a stimulus without including information about its characteristics. Localization refers to determining the position and arrangement of stimuli, and implies relational to other parts of the visual scene. The most precise level of perception is the identification which determines the different properties of stimulation in order to fully perceive the stimulus. Our results show that color incongruency improves all three aspects of perception in such a way that a greater number of correct responses for stimuli presented in different (red) color.

Since in our study subjects had double tasks, we also examined whether varying colors of stimuli used in those tasks would affect performance in these tasks, that is, whether it will affect divided attention. The obtained results show that there is an effect of color congruence of stimuli. Success in the primary task did not change achievement in the secondary task, while the color of the stimulus did. As success in the primary task did not stand out as a statistically significant predictor of accuracy in the secondary task, this means that it is possible to actively divide attention into two tasks. Performing one task did not lead to a decrease in accuracy in another task.

Color incongruency has increased the efficiency of divided attention. Red stimuli were more likely to be detected, accurately localized, and identified in a secondary task. This is consistent with previous research which showed that color is an effective sign for locating relevant stimuli in the visual scene (Andersen et al., 2009). Earlier, it was found that attention can, based on color prominence, be selectively focused on certain objects, and lead to their faster and more accurate identification (Brawn & Snowden, 1999; Moore & Egeth, 1998). This study confirmed that. This means that color is a significant determinant of spatial attention and can increase its efficiency in multiple tasks. Certain authors (Hogendoorn et al., 2010) emphasize two mechanisms of divided attention - optimization versus selection. The first speeds up the processing of input information and its role is in reducing the reaction time. The effects of this mechanism are very modest and are reflected only in the reduction of response time to stimuli to which attention is

directed compared to those that are not in focus. The second mechanism involves keeping attention at certain points in the visual field, missing information from selected locations and discarding information from other locations. The color of the stimulus obviously facilitates both mechanisms.

Research conducted by Koivisto and colleagues (Koivisto et al., 2004) has also shown that color is a basic property of stimuli that can be processed automatically. They examined, in fact, two problems through the same experimental procedure. The first problem related to the possibility of visual discrimination without the participation of attention, and the second to the importance of congruence in terms of the observed attribute between the primary and the unexpected, critical stimulus. Their results showed that a higher percentage of blue and red circles were detected than the critical stimulus shown in black. This implies that the primary processing processes are based on the visual prominence of the stimuli, which makes them noticeable and without focusing attention on them.

The theoretical significance of this research is reflected in the fact that it provides additional empirical knowledge about the mechanisms of attention in dual tasks. In addition to useful knowledge about the functioning of attention, these findings can certainly have practical benefits, especially in situations where it is necessary to focus attention on multiple sources of information (traffic, for example).

One specificity and also a limitation of this research is that the only one color (red) was used as non-congruent. Early studies of the color-attention relationship found that full and saturated colors attract more attention than black, and also that warm colors such as red generate more arousal and attention than cool colors (Birren, 1978; Schaie & Heiss, 1964). Although such a positive effect of color and the efficiency of the divided attention has been confirmed in this study, it would certainly be necessary to examine the effects of other colors as well.

The main conclusion of this study is that the color of stimuli can significantly facilitate the distribution of attention to different stimuli and affect the performance of double tasks. It means that our visual perception will be more successful when two stimuli differ in this specific property.

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EFEKAT KONGRUENTNOSTI STIMULUSA NA PODIJELJENU PAŽNJU

Apstrakt

Podijeljena pažnja se odnosi na sposobnost simultane obrade više informacija ili obavljanja dva zadatka. Boja stimulusa je karakteristika koja omogućava da se prostorna pažnja brzo usmjerina određenu poziciju u vizuelnoj sceni. Cilj ovog istraživanja je da se ispita efekat podudarnosti boje stimulusa na efikasnost podijeljene pažnje. Istraživanje je sprovedeno na uzorku od 54 učesnika, studenata Filozofskog fakulteta u Banjoj Luci. Modifikovani zadatak Mekove i Roka (1998) korišćen je za ispitivanje implicitno podijeljene pažnje. Eksperiment je kreiran u softverskom paketu SuperLab for Windows. Varirana je boja novog stimulusa (kongruentna/nekongruentna sa bojom drugog stimulusa). Dobijeni rezultati pokazuju da postoji efekat kongruentnosti boje na uspješnost u obavljanju dvostrukih zadataka. Uspjeh u primarnom zadatku nije promijenio postignuće u sekundarnom zadatku, dok je boja stimulusa promijenila. Nepodudarnost boje je povećala efikasnost podijeljene pažnje.

Ključne riječi: kongruentnost, boja, podijeljena pažnja

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