PRIMENJENA PSIHOLOGIJA

Sadržaj

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FACIAL EXPRESSIONS RECOGNITION IN PHOTOGRAPHS, DRAWINGS, AND EMOTICONS

Results of previous studies point to the importance of different face parts for certain emotion recognition, and also show that emotions are better recognized in photographs than in caricatures of faces. Therefore, the aim of the study was to examine the accuracy of recognizing facial expression of emotions in relation to the type of emotion and the type of visual presentations. Stimuli contained facial expressions, shown as a photograph, face drawing, or as an emoticon. The task for the participant was to click on the emotion he thought was shown on the stimulus. As factors, the type of displayed emotion varied (happiness, sorrow, surprise, anger, disgust, fear), as well as the type of visual presentation (photo of a human face, a drawing of a human face and an emoticon). As the dependent variable, we used the number of accurately recognized facial expressions in all 18 situations. The results showed that there is an interaction of the type of emotion being evaluated and the type of visual presentation, $F(10; 290) = 10.55$, $p < .01$, $\eta^2 = .27$. The facial expression of fear was most accurately assessed in the drawing of the human face. Emotion of sorrow was most accurately recognized in the assessment of emoticon, and the expression of disgust was recognized worst on the emoticon. Other expressions of emotions were equally well assessed independently of the type of visual presentation. The type of visual presentation has proven to be important for recognizing some emoticons, but not for all of them.

Key words: drawing of a human face, emoticon, emotions, photo of a human face

Introduction

Dealing with universal facial expression, Ekman (1992) have summarized 6 basic expressions, as follows: fear, anger, sadness, disgust, happiness, and surprise. Each of these emotions has its own characteristic facial expression. Emotion of happiness is recognized by the specific position of lip ends raised at the same level of each side of the face, which are parted into a smile, with wrinkles in the outer parts of eye corners. When we experience a feeling of disgust, our cheeks are pushed up, the nose is wrinkled at its root, eyebrows are lowered, and the lower lip pushes the upper one, while a specific configuration is formed on our chin. Fear is recognized by raised and brought closer eyebrows, open mouth and clenched teeth, stretched upper eyelid that reveals the white of the eye and strained lower eyelid. For the expression of anger, it is characteristic that the eyebrows are lowered and brought closer, lips are tightened or opened, gaze is fixed and firm. When our eyebrows are raised, and eyes and mouth are wide open, then, we mainly express the facial expression of surprise. When we express sadness, eyebrows are in their inner parts raised while lowered in the outer parts, eyebrows and cheeks are also slightly lowered, the lip ends are turned downwards, the lips tremble (Kostić, 2014).

Besides characteristic look of certain facial areas, perception and processing of the facial expressions of emotions, require the analysis of gaze direction as well. According to the shared signal hypothesis, a congruent combination of specific face expression and direction of the gaze increase the possibility to recognize expressed emotions. Hence, there are examples of congruence between face expression and gaze direction, emotions of joy and anger, which facial expressions are mostly combined with a direct gaze, while facial expressions of fear and sadness are mostly combined with an indirect, i.e., averted gaze (Adams & Kleck, 2005).

Besides specific facial expression and gaze direction, the position of presented stimulus, the intensity of emphasized emotion of facial expression, as well as the age of participants, affected the accuracy of emotion recognition. A study evaluated the intensity of exaggerated expression of emotions of fear and anger on the original faces and morphs by using a 5-point Likert scale type in the pilot study (Groh, 2017). Stimuli evaluated as extremely and typically intensive were introduced in the main part of the research. The results indicated that typical and extremely intensive expressions of emotions of anger, and highly intensive expressive emotion of fear, were recognized with an equal accuracy in both elderly and younger participants.

Taking into account results related to a high accuracy of emotion recognition, a question may be posed whether recognition of emotions is automatic. The analysis of the research results with affective priming suggests that the processing of facial expression of emotion is done without attention, and the information is processed unconsciously. A facial expression of emotion of happiness or fear (prime) with exposition of 200 ms and 1000 ms is shown

to the participant by using a special interocular suppression technique. Then the word (target) is presented to the participant, which may have either positive or negative valence (thus being either congruent or incongruent with the facial expressions presented). The task of the participant is to classify the word according to the valence. It is important to note that the face with emotion expression (prime) is actually not recognized during the presentation due to use of the mentioned technique. The results show that the congruent relationship between prime and target causes facilitation of reaction with regard to the incongruent relation, regardless of the length of presentation of prime (Yang & Yeh, 2019).

On the other hand, results of some studies suggest that emotion recognition is not an automatic process, and that it requires certain cognitive engagement (Mermillod et al., 2009; Todić, 2013). Namely, in the task of visual search in the sets of cartoonized faces, participants should detect whether there is a face within the set which is different from the others. There are evident differences in the participants' achievements, depending on the type of facial expression of emotion (happiness or anger), as well as depending whether the set consists of the same faces (negative sets), or one face differs from the others (positive sets). In negative sets of angry faces, the search lasts longer than it does with the sets consisting of all happy faces. However, in positive sets where the face with an expression of anger is distinctive, it is detected faster than the happy face. Even though the detection of an angry face in the group is faster and more efficient than the detection of a happy face, even with an increasing number of distractors in the set, it cannot be said that the processing of this simplified stimulus is a consequence of pop up effect (Fox et al., 2000). This finding points to the fact that the perception or some of its domains is in a way included into the process of emotion recognition.

With regard to the fact showed by some data that we can differentiate specific facial expressions for each expression of emotion, which characterize them, a question is posed: How many such elements do we really need in order to accurately identify an emotion? The research conducted by Wegrzyn and associates aimed to discover the effect which the information from various face areas had on emotion recognition accuracy (Wegrzyn et al., 2017). Stimuli were covered with white tiles, which were uncovered at random every second. The participants` task was to stop further uncovering of the stimulus as soon as they recognized the facial expression on the photo. After the response, stimulus was shown to the evaluator. A number of accurate responses (recognized emotions) was measured, as well as the number of elements revealed up to the moment of the decision.

The results show that areas around the mouth and eyes are most reliable for recognizing an emotion. These data are in accordance with some earlier studies (Adolphs et al., 2005; Lewkowicz & Hansen-Tift, 2012). When evaluating fear and anger, the information we get on the upper parts of the face is more useful (eyes, eyebrows), while the information from the lower

facial areas around lips is more important for the recognition of the emotion of happiness and disgust. The authors note that during the interpretation of the results, localization of uncovering all the tiles, as well as how many tiles had been uncovered before the participant responded, should be taken into account (Wegrzyn et al., 2017). It is also found that it is difficult to differentiate between emotions of fear and sadness, as well as emotions of fear and surprise, respectively. These findings are also in accordance with some earlier studies (Palermo & Coltheart, 2004; Pochedly et al., 2012). The researchers have observed frequency with regard to the fact that the happiness and surprise are relatively easily recognized as opposed to fear which tends to be recognized poorly (Biehl et al., 1997; Matsumoto et al., 2000; Passarell et al., 2018). According to Matsumoto et al (Matsumoto et al., 2000), disgust is also easily recognized, whilst besides fear, sadness is also poorly recognized, according to his findings.

By using cartoon faces and photographs, researchers have tried to investigate whether reaction time and recognition accuracy of emotions depend on the type of stimuli (a real face in relation to the cartoon face), and valence of emotions (happiness in relation to anger). Data have shown that the reaction time for happy facial expressions is shorter than for angry facial expressions. Also, cartoon faces are processed faster than the real ones in the first phase of processing (recognition of expression). Yet, in later phases of face recognition (detection of sex, age, race, and recognition of expression), the attention is more engaged in processing of real faces. Results lead to the conclusion that there are differences in the way of processing between real faces and cartoon faces (Zhao et al., 2019).

Todić has conducted an experiment (2013) with the aim to find out whether recognition accuracy of different emotions (happiness, sadness, fear, surprise, disgust, and anger) is affected by the type of stimulus (whether the task is to recognize emotion on a human face or on emoticon), and the context in which the stimulus is presented (congruent or incongruent one). Congruent context comprises a certain presentation of facial expression followed by a notion that refers to the emotion presented (if the emotion of happiness is presented in the photograph, happiness is written underneath the photograph). On the other side, incongruent context comprises a presented facial expression with a notion that does not represent the particular emotion (if the emotion of sadness is presented in the photograph, disgust is written underneath the photograph). Results of the research have shown that there is an effect of interaction of the factors examined. The participants have most accurately recognized emotions presented on the real faces in congruent context, than on an emoticon in both contexts, and finally, on real faces in incongruent context.

Taking into account the data which indicate that the recognition of emotion is an automatic process (Yang & Yeh, 2018), that the importance of certain facial areas in recognition of certain emotions is emphasized (Wegrzyn et al., 2017), that recognition of emotions is processed faster on the stimuli such as

cartoon faces with regard to the photograph (Zhao et al., 2019), and research which indicates that some emotions in a incongruent context are better evaluated with emoticon presentation than with the human facial expressions (Todić, 2013), we have been interested whether and to what extent the complexity of stimulus (face) affects emotion recognition, as well as whether such influence is the same for all basic emotions. That is why it would be interesting to vary degree of expression of typical facial areas during expression of 6 basic emotions with the types of visual stimuli (a photograph of a human face, drawing of a human face and an emoticon).

The basic issue of this paper refers to the investigation of the effect of varying the number of evaluation elements and emphasized characteristics (type of visual presentation) and emotion recognition accuracy. Therefore, as opposed to researches where cartoon faces are used as stimulus per se (Zhao et al., 2019), it may be used as stimulus with reduced number of information available for emotion recognition. According to the findings by Todić (2013), further reduction of the number of emphasized characteristics important for emotion recognition can be achieved in emoticons. Accordingly, we are interested whether there are differences in the recognition accuracy of facial expression of emotions in case if they are evaluated by perceiving photographs of a human face (ecologically valid stimulus), drawings of those faces (stimulus with some emphasized parts), or by emoticons (stimulus with less emphasized parts than drawings). With the change of face presentation type, not only that the number of available information decreases, but their mutual interactions change as well. Based on that, the importance of visual complexity of the face stimuli for emotion recognition can be detected. However, complexity does not have to show linear relation to recognition accuracy, since greater number of information might lower the accuracy due to non-congruent interactions of some facial characteristics during certain emotion recognition.

The aim of our research was to examine recognition accuracy of facial expressions of emotions with regard to the type of emotion (happiness, sadness, surprise, anger, disgust, fear) and the type of visual presentations (a photograph of a human face, drawing of a human face, and an emoticon). Another aim was to determine a potential degree of discrimination of the facial expressions in relation to each other, i.e., to determine whether there is some other emotion for each of the emotions, with which the facial expression is replaced mostly, or if it is replaced with all other emotions equally.

Method

Sample

The research was conducted at the Faculty of Philosophy in Kosovska Mi-trovica. The sample consisted of the first-year and the second-year students of psychology, 30 of them altogether (both sexes balanced), aged 19 to 25.

Stimuli

Stimuli material consisted of 72 stimuli in total: 24 photos that show emotions on human faces (4 photographs per each of 6 emotions), 24 drawing presentations of emotions on a human face (4 drawings per each of 6 emotions), and 24 emoticons (4 per each emotion). Photographs (Japanese and Caucasian Facial Expressions of Emotion (JACFEE) by Matsumoto & Ekman, 1988) were coded by Ekmann and Friesen (Ekmann & Friesen, 1975) with help of the Facial Action Coding System (FACS) in order to provide validity of expressions, that is, the ability of photographed individuals to express given emotion and provide possibility of comparing emotions intensity. Drawings of human faces were created by converting the photographs into drawings with the help of application "Prisma (effect: curly hair)". Emoticons were taken from the internet applications for communication, and we used only those emoticons in the research that were adequately associated with the emotion they represent in the pilot study (Figure 1).

Fig

Figure 1. Presentation of different emotional expressions with regard to the type of visual presentation: a) disgust; b) sadness; c) fear

Procedure

To determine the appropriate smiles for each emotion, we conducted a pilot study. We found 10 smiles for each emotion on the Internet, and the task of the respondents was to categorize smiles according to the emotion they represented. For the final research, we singled out 4 smiles (for each individual emotion), which were correctly categorized by the largest percentage of respondents, as representing a given emotion.

The experiment was created in the OpenSesame software. Stimuli presentation to participants was randomized. The exposition of stimulus lasted 1000 ms, after which the participant was presented a set of given answers (a list of terms for each of 6 emotions), and the task of the participant was to press the key of emotion s/he thought was presented on the stimulus. At the end, the number of correct answers for each emotion was calculated on all three types of presentation separately (0 was minimum, 4 was maximum).

The type of emotion presented (six basic emotions: happiness, sadness, surprise, anger, disgust, fear) and the type of visual presentation (a photograph of a human face, drawing of a human face and an emoticon) varied as factors. The number of accurate responses, i.e., the number of accurately recognized facial expressions of the emotions presented was measured as a dependent variable. This measure was determined separately for each of the six emotions and for each way of presenting facial expressions, respectively.

Additionally, we also counted how many times the participants marked a particular emotion instead of another one. For example, how many times they marked the emotion of sadness, surprise, disgust, anger or fear instead of the emotion of happiness. This score was determined separately for each emotion and for each type of visual presentation, respectively.

Results

As the main aim of the research was to examine the accuracy of facial expression recognition with regard to the type of emotion and the complexity of visual presentation, we used the analysis of variance with two repeated factors for data processing. The obtained results showed that there was an interaction between the type of emotion and the type of visual presentation of emotion which were evaluated, $F(10; 290) = 10.55$, $p < .01$, $\eta2 = .27$. The Sidak post hoc test (Figure 2) showed that the facial expression of fear was the most accurately evaluated on the drawing of a human face, and that evaluation did not differ when evaluating the photograph of a human face and an emoticon. The emotion of sadness was the most accurately evaluated on an emoticon, whilst the evaluation of this emotion did not differ during the evaluation of the photograph of a human face or a drawing either. An expression of disgust was the worst recognized on an emoticon, but it was better recognized when observing

photographs or drawings of a human face. The other expressions of emotions (happiness, anger and surprise) were equally well evaluated regardless of the type of visual presentation.
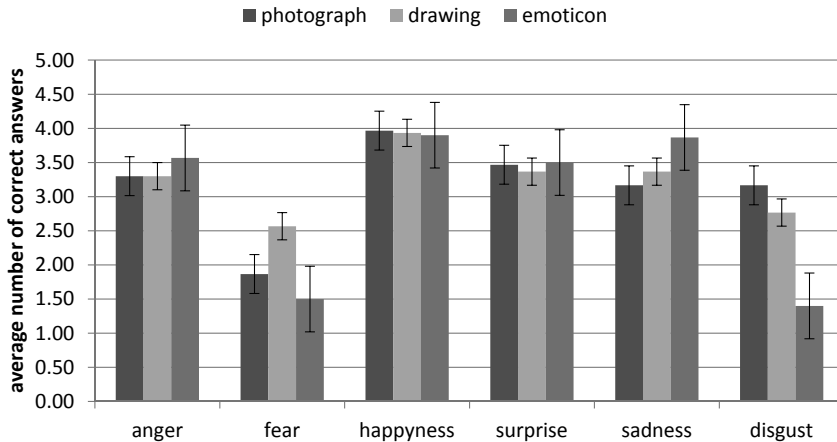

Figure 2. Recognition accuracy of six emotions types on three types of visual presentation

In order to clarify the nature of differences obtained during the evaluation of emotions, we conducted an additional analysis on errors made by the participants, more precisely on so called false alarms (false detection of one emotion on the representation of the other emotion). Namely, we were interested to know what kind of errors participants made, and also whether the participants equally replaced facial expression of certain emotion with any other emotion independently on the stimulation complexity. We conducted two factor analysis of variance with repeated measures with type of emotion as one factor, including 5 levels (all the other emotions apart from the one that was evaluated), and the type of visual presentation with three levels (a photograph of a human face, drawing of a human face, and an emoticon). The range of values on the graphs went from 0 (not even once replaced with that emotion) to 4 (always replaced with this emotion, that is with all 4 stimuli which represent a given emotion, on the given type of visual presentation). The obtained results have been shown for each emotion separately.

Errors Made when Detecting the Emotion of Happiness

The results showed that the emotion of happiness was equally replaced with all the other emotions, $F(4; 116) = 0.46$, $p > .05$, regardless of the type of visual presentation, $F(2; 58) = 0.79$, $p > .05$. Also, an interaction of these factors was not statistically significant, $F(8; 232) = 1.25$, $p > .05$. Number of false alarm

errors, detections of other emotions on the representation of happiness, was very low.

Errors Made when Detecting the Emotion of Sadness

The results showed presence of the effect of the type of visual presentation, $F(2; 58) = 5.77$, $p < .01$, ŋ2 = .17, and the type of emotions, $F(4; 116) = 3.26$, $p < 0,01$, ŋ2 = .10, but there was not an interaction of the factors, $F(8; 232) = 1.89$, $p > .05$. Sidak post hoc test showed that there were no differences between individual kinds of emotions, which were opposed to the presence of the main effect, and were probably a consequence of a small effect size. Differences in terms of the type of presentation showed that sadness was more frequently replaced with surprise and disgust on the photographs than on the other two types of presentation. If we combine these findings, we can conclude that the sadness is more frequently replaced with surprise and disgust, but only on the photographs of human faces. Such conclusion still points to the presence of an interaction between the kinds of emotions and the type of presentation, although omnibus test has not reached the level of significance (Figure 3).

Figure 3. False recognition of other emotions on expression of sadness with regard to the type of visual presentation

Errors Made during Detecting the Emotion of Surprise

The results showed that there was an interaction between the type of visual presentation and the type of emotion, $F(8; 232) = 2.00$, $p < .05$, ŋ2 = .06, during evaluation of this emotion. The results of Sidak post hoc tests showed

that on the emoticon, surprise was equally replaced with all the other emotions, while on the drawing and photograph of a human face, it was more frequently replaced with fear than with other emotions.

Errors Made during Detecting the Emotion of Disgust

Results showed that there was an effect of interaction between the type of visual presentation and the type of emotion, $F(8; 232) = 13.39$, $p < .01$, ŋ2 = .32. Sidak post hoc tests (Figure 8) showed that during the evaluation of photographs and drawings of a human face, participants most often replaced the emotion of disgust with the emotion of anger, and less rarely with other emotions. As opposed to it, on an emoticon, participants more frequently replaced the emotion of disgust with sadness, surprise and fear, and less with happiness and anger.
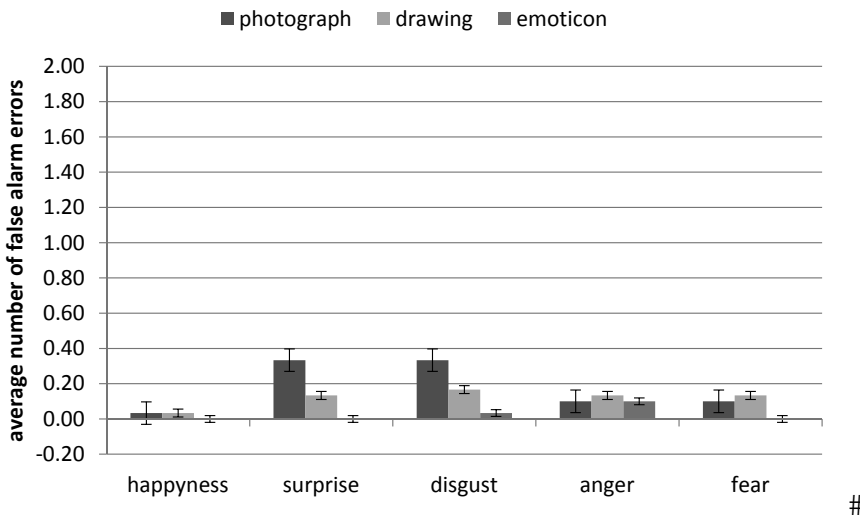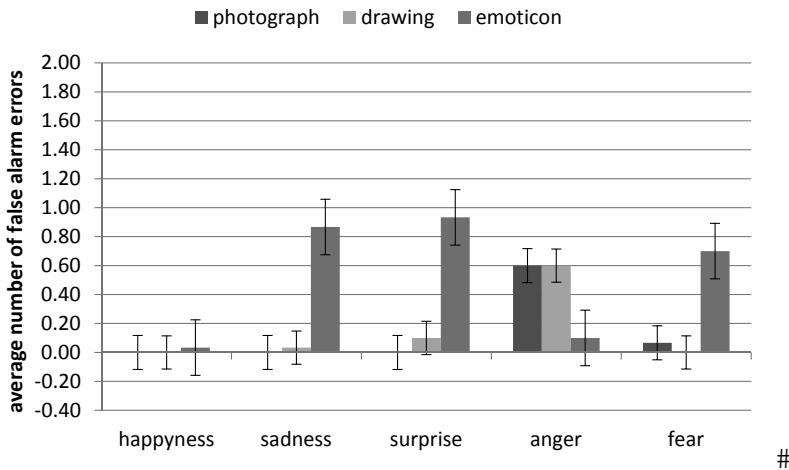

Figure 4. False recognition of other emotions on expression of disgust with regard to the type of visual presentation

Errors Made during Detecting the Emotion of Anger

The results showed a significant effect of the type of emotion, $F(4; 116) = 7.12$, $p < .01$, ŋ2 = .20, which was evaluated. However, it showed neither the type of visual presentation, $F(2; 58) = 1.51$, $p > .05$, nor the interaction between two factors, $F(8; 232) = 0.39$, $p > .05$. Although Sidak`s tests did not detect any significant differences, the main effect showed that some differences probably exist. Thus it could be partly concluded that anger was somewhat more frequently replaced with disgust than with other emotions, in all types of presentations.

Errors Made during Detecting the Emotion of Fear

Results showed that there was an interaction between the type of visual presentation and the type of emotion, $F(8; 232) = 5.20$, $p < .01$, $\eta2 = .15$. Differences were such that the participants replaced the emotion of fear with happiness and anger more rarely than with other emotions (Figure 9). On a drawing of a human face, participants most frequently replaced the emotion of fear with surprise, and very rarely with happiness and anger. During the evaluation of the photograph, fear was most frequently replaced with the emotion of surprise, and rarely with other emotions.
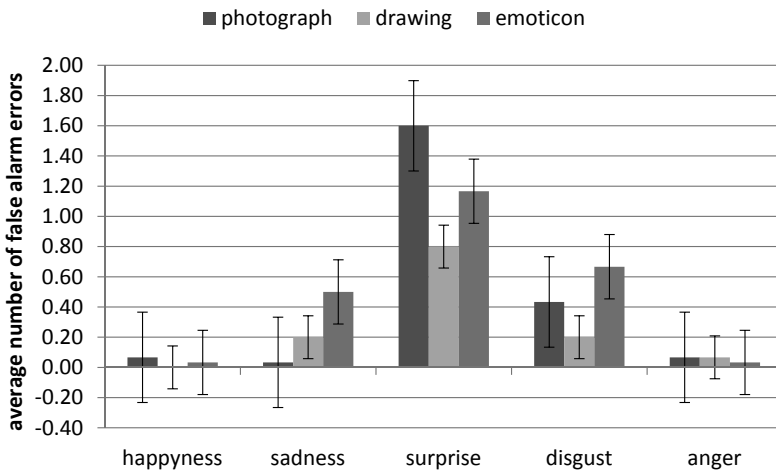
Figure 5. False recognition of other emotions on expression of fear with regard to the type of visual presentation

Discussion

The basic idea of this paper was to examine the recognition accuracy of facial expressions with regard to the type of emotion to be recognized and the type of visual presentation. The specificity of these visual presentations was the quantity of pieces of information offered when identification of primary emotions was in question. Namely, the expression of emotions on the photograph of a human face was a complex presentation as it unified all the characteristics of nonverbal facial expressions of certain emotions. This type of stimulus was important from the ecological point of view as it presented the type of stimulus which the participant was best acquainted with. Drawings presented the version of presentation which had more striking contours of all elements of the face (eyes, mouth, eyebrows, nose and cheeks), but also gaze direction, due to contouring the surround parts of the eyes. We could not say

whether this stimulation was more complex than the photograph or not. The reason for this was due to the fact that contouring of characteristic parts of the face emphasized noticeable parts, which could lead to easier recognition of facial expression. Yet, transformation of the photograph to the drawing level was a sort of simplification, , since one part of information from the photograph was lost (e.g., skin texture, fine lines, micro grimaces). A significant reduction of the number of face elements was presented on emoticons, where presentation of emotions was reduced to only a couple of elements (face contours with a line which marked the mouth, circles for marking the eyes). We were interested to find out whether recognition accuracy of emotions decreased with simplification of the visual presentation of that stimulation, i.e., whether we would better recognize emotions if they were presented to us on the drawings of a human face, somewhat poorer if we observed the photograph, and the poorest if it was presented to us as an emoticon.

Results proved that there was an interaction between the type of emotion and the type of visual presentation. Also, research findings showed that the facial expression of fear was most accurately evaluated on the drawing of a human face, the expression of sadness on the emoticon, and the emotion of disgust on the photograph and drawing of a human face. The other expressions of emotions, such as happiness, anger, and surprise were equally well evaluated regardless of the type of visual presentation.

Emotions of happiness, anger, and surprise were accurately recognized regardless of the type of visual presentation that was stimulus complexity. Such finding indicated that these emotions had some specific, clearly noticeable facial expression characteristics, which did not vary much from the presentation type. For example, the expression of happiness contained characteristically bent upward lips, which was strongly noticeable and clear in all the variations of the presented types of stimuli (a photograph of a human face, drawing of a human face and an emoticon). For anger, the reason perhaps laid in the specific position of the eyebrows in anger, they were lowered and brought closer which revealed a characteristic angry look even in the emoticons. In the emotion of surprise there was a characteristic form of lips which were in the form of a letter "o", which might have been of a help during the evaluation of this emotion on more complex stimuli, as well as on simpler stimuli.

On the other hand, the emotion of sadness was most accurately recognized only on emoticon, although it also contained characteristically lowered lips. The reason for lower accuracy of sadness in the photograph and drawing might be in the fact that this characteristic (lowered lips) interacted with other information. The presence of bent lips on the emoticon with the absence of any other pieces of information, which could affect the decision, gave contribution to the fact that this emotion was the most accurately recognized on this type of stimulus. Error analysis showed that this emotion was mostly replaced with the emotion of surprise and the emotion of disgust, and these errors became more frequent when evaluating photographs of a human face. As for the emo-

tion of disgust, information from the lower parts of the face was more important (Wegrzyn et al., 2017), and the emotion of surprise was well recognized in all variations of visual presentations, perhaps the presence of more pieces of information in the region of lips (wrinkles around lips, nose position, and so on) made recognition of the presented emotion more difficult.

As opposed to the emotion of sadness, the emotion of disgust was better recognized on the photograph and drawing of a human face than on the emoticon. On the photographs and drawings, this emotion was replaced with the emotion of anger, while on the emoticon, this emotion was most frequently replaced with emotions of sadness, surprise, and fear. If we take into account the results which indicated that the lower part of the face was more important for the evaluation of the emotion of disgust (Wegrzyn et al., 2017), as well as that the expression of the emotion of disgust required an engagement of the musculature of cheeks as well (Ekman & Friesen, 1975), then disgust was expectedly better recognized on the photograph and drawing because of the specific position of the muscles, which were not possible to faithfully replicate on the emoticon. The reason why this emotion was replaced with the emotion of anger was perhaps the area of the face based on which participants made their decisions. Namely, the emotion of disgust was characterized by lowered eyes, while for the emotion of anger eyebrows were lowered, hence, this could have led participants to inaccurate evaluation. As far as the errors occurring while evaluating emoticon was concerned, the reason again might be the simplicity of stimulation. For the emotions of sadness, surprise, and fear, the pieces of information on the position of eyebrows, cheeks, and lips were very important, and the simplicity of stimulation of an emoticon probably made bringing an accurate decision more difficult.

Results showed that the facial expression of fear was most accurately evaluated on the drawing of a human face, while its recognition did not differ from the photograph of a human face, and the emoticon during their evaluation. Error analysis showed that the participants more frequently replaced the emotion of fear with the emotion of surprise, especially when presented on a photograph and on a drawing of a human face. On an emoticon, fear was equally replaced with surprise, sadness, and disgust. For the recognition of the emotion of fear, the upper part of the face was characteristic (Wegrzyn et al., 2017), and was more prominent on the drawing than on the photograph (the drawing had sharper lines), while on the emoticon it was presented with a couple of lines which represented slanted eyebrows, eyes were drawn simply, and therefore the recognition was more difficult. On the emoticon, the emotion of fear was mixed with the emotion of sadness (but not on the photograph), and the reason might be in the position of lips which were bent down in both presentations, while emoticon alone did not offer enough specific pieces of information, which would be more relevant for the emotion of fear (forehead lines, tense lips), which made differentiation of these emotions more difficult. Replacement of the emotion of fear with the emotion of disgust on an emoticon

(with regard to the drawing) could be also explained by the simplicity of the stimulation, especially, if taken into account that the participants during evaluation of the emotion of disgust on the emoticon, replaced this emotion with fear. During evaluation of the photograph, the emotion of fear was replaced with the emotion of surprise, which was in accordance with the earlier findings (Palermo & Coltheart, 2004; Pochedly et al., 2012, Wegrzyn et al., 2017). This error was less present when the drawing of a human face was concerned, which might be due to the exaggeration of certain parts of the face important for the recognition of fear in the drawing (sharp features, more visibly drawn forehead lines).

Conclusion

Recognition of facial expressions may depend on the very complexity of the stimulus, that is, on the quantity of information which is at the expense during the evaluation. Researchers often note that happiness and surprise are relatively easily recognized, which is confirmed by our research as well. Differentiation of fear (Biehl et al., 1997; Matsumoto et al., 2000; Passarell et al., 2018), disgust, and sadness, in relation to the other emotions, is shown as somewhat poor, both in our study, and also in some other studies (Mermillod et al., 2009; Wegrzyn et al., 2017).

Based on all presented information, it can be concluded that the type of visual presentation of stimulus may be essential for recognition of some emotions, but not for all of them. The emotion of sadness is more accurately recognized on the basis of a minimum number of information from the face (emoticon), while some other emotions require the integration of more pieces of information (fear, disgust). It is shown that fear is the emotion which is badly recognized on the stimuli which are ecologically valid, i.e., on the photographs of a human face. However, recognition accuracy of fear is the highest on the drawings of human faces. Hence, exaggeration of the contours of all the facial elements gives contribution to the evaluation accuracy. In this way, the number of irrelevant pieces of information on the face is reduced, so that the emotion expression could become noticeable. Also, we can carefully say that drawings, or middle range stimuli by complexity, facilitate recognition of fear.

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PREPOZNAVANJE FACIJALNIH EKSPRESIJA NA FOTOGRAFIJAMA, CRTEŽIMA I EMOTIKONIMA

Istraživanja ukazuju na različitu važnost delova lica u prepoznavanju različitih emocija. Pored toga, pokazano je da se neke emocije bolje prepoznaju na fotografijama nego na karikaturama lica, odnosno da se tačnost prepoznavanja smanjuje sa opadanjem broja dostupnih informacija. Polazeći od toga, postavili smo pitanje da li postoje razlike u tačnosti prepoznavanja facijalnih ekspresija emocija u slučaju da se one procenjuju preko fotografija ljudskog lica (ekološki validan stimulus), crteža tih lica (stimulus sa nekim naglašenim delovima) ili emotikona (podsticaj sa manje naglašenim delovima od crteža). Cilj istraživanja je bio da se ispita tačnost prepoznavanja emocija na licu u odnosu na vrstu emocije i tip vizuelne prezentacije. Uzorak u istraživanju su činili studenti prve i druge godine psihologije na Filozofskom fakultetu u Kosovskoj Mitrovici, ukupno njih 30 (ujednačenih po polu), starosti od 19 do 25 godina. Stimulusni materijal su činili izrazi emocija koji su bili prikazani na fotografijama, crtežima lica i emotikonima. Zadatak ispitanika je bio da osmotre stimulus i pošto se na ekranu pojave ponuđeni odgovori (popis 6 bazičnih emocija) klikom na taster odaberu emociju za koju misle da je prikazana na stimulusu. Kao faktore smo varirali vrstu prikazane emocije (sreća, tuga, iznenađenje, bes, gađenje, strah) i tip vizuelne prezentacije (fotografija ljudskog lica, crtež ljudskog lica i emotikon). Kao zavisnu varijablu koristili smo broj tačno prepoznatih izraza lica u svih 18 situacija. Rezultati su pokazali da postoji interakcija vrste osećanja koja se procenjuje i tipa vizuelne prezentacije, $F(10; 290)$ = 10,55, p <.01, $\eta2$ = .27. Naknadne analize ukazuju da nema razlika u prepoznavanju emocija sreće, ljutnje i iznenađenja u zavisnosti od složenosti prikaza, dok razlike postoje kod emocija tuge, straha i gađenja. Međutim, razlike nisu uvek u istom smeru, pošto kod tuge složenost prikaza ometa tačnost prepoznavanja i ona se najtačnije prepoznaje na emotikonu. Emocija straha se najtačnije prepoznaje na nešto složenijem prikazu (crtežu lica), a najlošije na ekološki najvalidnijem prikazu (fotografija). Najveća tačnost u prepoznavanju gađenja je na fotografiji lica kao najsloženijem prikazu. Možemo da zaključimo da količina

prikazanih informacija na licu nije bitna za prepoznavanje nekih emocija (sreća, ljutnja i iznenađenje), bilo da se podjednako dobro ili loše prepoznaju na sva tri tipa prezentacije. Kod ostalih bazičnih emocija povećanje količine informacija na licu može da ometa prepoznavanje (tuga), da ga poboljša do nekog nivoa a da ga daljim povećanjem ometa (strah), ili da poboljšava prepoznavanje (gađenje).

Ključne reči: crtež ljudskog lica, emotikon, facijalna ekspresija emocija, fotografija ljudskog lica

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MORAL DISSONANCE AT WORK AND EMPLOYEES' PSYCHO-PHYSICAL HEALTH[2]

The main objective of this research was to determine the frequency of the occurrence of moral dissonance in the workplace, and its possible consequences for employees' psycho-physical health. External ethical dissonance at work is defined as a condition stemming from a discrepancy between the employee action and ethical standards in place in the organization, and is primarily caused by the unethical pressure of the management. A sample of 311 employees of both genders, employed both in the private and public sector, with different educational levels and of different ages and seniority, have applied measures of psycho-physical health, measures of frequency of ethical dissonance at work, and the Demographic Characteristics Questionnaire. Results show that out of 311 respondents, 72% of them report that they have been in a state of external ethical dissonance at least once in the past year, so we conducted further analyses on data gathered from these 224 employees. Factor analysis of the SUED2R questionnaire has revealed that measures of external ethical dissonance are classified into three indicators, according to the type of unethical pressure: lying for the benefit of the organization, harassing others, and supporting wrong people in the organization. We have found that the incidence of such ethical dissonance is significantly higher in the private than in the public sector, that the increased incidence of all three forms of work dissonance is associated with an increased incidence of symptoms of health disorders. It is concluded that the pressure to act unethically (corrupt behavior) probably contributes to the deterioration of employees' health. The significance of these findings is that, for the first time, they clearly demonstrate a systematic link between pressuring employees into corrupt behavior, and their psycho-physical health.

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2 This paper is partially based on data collected for Božana Vidaković's master thesis (2020) completed under the supervision of Prof. Nebojša Majstorović.

Introduction

Researches show that unethical judgments about others in the workplace (e.g., discrimination), unjust treatment of managers (e.g., favoritism in remuneration), or threatening behavior toward others (e.g., bullying) have negative consequences on health and well-being (e.g., Hoel et al., 2004; Landrine et al., 2006; Niedl, 1996), as well as the more frequent sick leave of those employees who are the target of such practices (Elovainio et al., 2002). Furthermore, research indicates negative effects on perpetrators of unethical behavior, as well as on those indirectly involved in these events, such as co-workers, family members, or witnesses of such events (Evans et al., 2007). Giacalone and Promislo (2014) cite three mechanisms that can explain the impact of unethical work behavior on well-being and health: experiencing stress, experiencing trauma, and the appearance of unhealthy behavior patterns (e.g., smoking cessation, alcohol, drug use, etc.). In particular, exposure to an unethical event, and especially its evaluation, produce negative emotions that lead to stress and impaired well-being (Suinn, 2001). An unethical act, such as undeserved dismissal, can produce trauma in terms of loosing basic confidence in people, institutions, or the system as a whole (Moore et al., 2004). Such trauma produces impaired well-being and impaired health, and can even lead to an increased mortality in the population (Friedman & Schnurr, 1995; Schnurr et al., 2002). Finally, the exposure to unethical behavior can alter a person's healthy eating, exercise, treatment, and rest habits (Lee et al., 1992), which is directly related to an increased incidence of diseases, such as heart disease, breast cancer, and AIDS (Adler & Matthews, 1994; Hemingway & Marmot, 1999). Such effects can be explained by the theory of self-preservation (the self-maintenance model of dishonesty; Ayal & Gino, 2011; Barkan et al., 2012), whereby a person behaves unethically in a state of ethical dissonance and, if this state does not resolve positively, the person becomes anxious, and seriously impairs his/her integrity. A state of dissonance occurs in such situations, because individuals display a strong tendency to preserve the image of himself or herself as a moral person, avoiding the temptation to act immorally (Aquino & Reed 2002; Bazerman & Tenbrunsel, 2011).

Ethical dissonance is defined as a state of disparity between a person's unethical behavior and his or her need to maintain the self-image of a moral person (Barkan et al.; 2015, Majstorović, 2012a). However, this research focuses on situations where an employee experiences a state of ethical dissonance caused by external pressure to act in a manner that is contrary to organizational ethical standards. If the employee succumbs to this pressure, he/she may violate the image of himself or herself as a person who follows the organizational work ethic. The individual condition resulting from external pressure to violate organizational ethical standards is operationalized as a state of external ethical dissonance at work.

So far, no research has been conducted on the frequency of external ethical dissonance at work or confirmation obtained that the frequency of externally induced unethical behavior at work has repercussions on the psycho-physical health of employees. Kolarski (2019) finds that the perception of organizational work ethics as egoistic is related to the acceptance of various corrupt rationalizations, which, according to Majstorović (2012), indicate a state of ethical dissonance that can be caused by the pressure to corrupt. Furthermore, Kolarski (2019) also finds that the dominance of an egoistic ethical climate in an organization is associated with symptoms of health disorders, such as depressive reactions and social functioning disorders. An empirical basis for investigating the relationship between external ethical dissonance at work and health is indirectly present in research findings that indicate a link between prolonged stress caused by violations of personal ethical standards, on one hand, and diminished experience of personal value, (Janoff-Bulman, 1989) and impoverished self and coping resources (Zapf et al., 1996), on the other. When it comes to the relevance of industrial sector and demographic features for employees' health, the research in India shows that the mental health of private sector employees is higher than the mental health of those in the public sector (Srivastava & Krishna, 1992). Furthermore, it has been found that there is no a significant difference in the level of general stress among employees in Indian industrial sectors, although such differences exist in groups that differ in years of service and educational level (Bano & Jha, 2012).

Based on these studies, it is assumed that a violation of organizational ethical standards, in addition to personal ethical values, leads to a state of ethical dissonance that equally produces negative effects on the psycho-physical health of employees. Namely, equivalent to a state of cognitive dissonance (Festinger, 1957; Festinger & Carlsmith, 1959), a person can resolve the state of ethical dissonance at work by conforming to unethical organizational standards, and suffering negative consequences to his or her professional integrity and self, or by refusing such demands, therefore risking loss of the status and loss of job security. Given that an individual in defense of his or her professional integrity cannot rely on clearly stated and supported ethical standards (because they do not exist or are present, but have not been consistently applied), he / she conforms to the unethical standards of influential individuals and groups (1), he/she chooses isolation (2) or he/she leaves the organization (3). The first and second solutions mean a state of stress and a likely impairment of health, unless the person approaches the resolution of ethical dissonance by giving up his or her professional / personal integrity, thereby accepting antisocial assimilation (Figure 1; Burchard, 2011). The third solution requires a change of a job and organization with many uncertainties that accompany such a change, including dealing with the state of work ethic in the new organization. The research shows that the very condition caused by ethical disparity between the organization and employees is the reason for leaving the organization (Coldwell et al., 2008). The strength of this employee fluctuation factor

can be explained by the properties of ethical dissonance which, according to Barkan et al. (2015), is central to self-perception, a threat to personal integrity, and a violation of social norms.

We can conclude that the previous research indirectly shows that an unresolved state of external ethical dissonance is likely to affect psycho-physical health in employees. However, there is a lack of research to confirm such an association. Also, there is a shortage of research on the occurrence of ethical dissonance at work, as well as the analysis of the impact of industry sectors and demographics on the frequency of ethical dissonance and its relationship to the employees' health. Therefore, the following goals have been set for this research:

1. To examine the frequency of external ethical dissonance at work in public and private sectors;

2. To analyze the relationship between the frequency of external ethical dissonance at work and the state of employees' psycho-physical health, and

3. To determine whether the demographic characteristics of employees affect ethical dissonance at work frequency distribution.
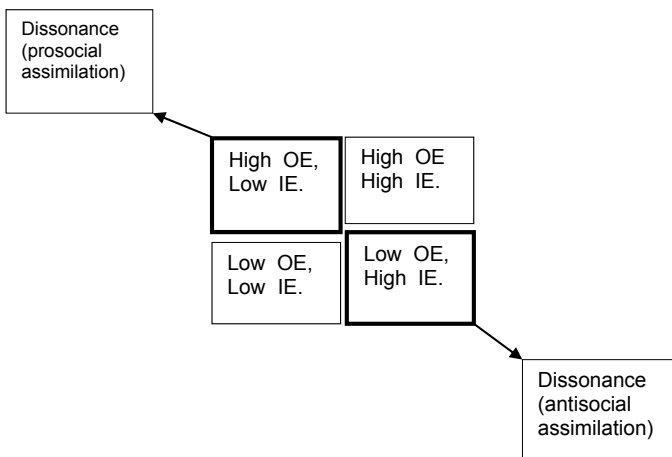
Figure 1. Cyclic model of ethical dissonance (IO-individual ethics; OE- organizational ethics) (Burchard, 2011)

Based on the Theory of Self-Preservation, the Cyclic Model of Ethical Dissonance, and a previous conceptualization of external ethical dissonance at work, the hypotheses that will be tested in this research have been put forward. However, it must be emphasized that no research has been done on the incidence of ethical dissonance or its relevance to psycho-physical health, and that, for this reason, the assumptions below are largely exploratory in nature:

H1: The frequency of external ethical dissonance is different in public compared to private sector organizations,

H2: A frequent state of external ethical dissonance at work is associated with a higher frequency of psycho-physical health disorder symptoms in employees,

H3: No significant differences are expected in the frequency of external ethical dissonance among employees of different gender, and

H4: The frequency of external ethical dissonance is different for employees differing in years of service in their organization.

Method

Sample

Data were collected from an at-hand sample of 311 employees in the territory of the Republic of Serbia and Bosnia and Herzegovina. The respondents were of both sexes, differing in education, employed in private and public sectors, with an average age of 36.9 years old, and an average length of service of 7.5 years. After analyzing responses to measure the incidence of ethical dissonance at work, the sample was reduced to 224 employees. These were employees who reported that, they were in a state of ethical dissonance at least once during the past year due to external pressure (Table 1).

Table 1
Sample of participants - demographics (N = 224)

Variable	Categories	Frequency	%
Gender	Male	42	18.75
	Female	182	81.25
Level of education	High School	32	14.29
	College	55	24.55
	BA degree	69	30.80
	MA degree	68	30.46
Sector	Public	144	64.29
	Private	80	35.71
Years of service	Up to 5 years	128	57.1
	From 5.1 to 15.0 years	60	26.8
	Over 15 years	36	16.1

Instruments

The Psycho-Physical Health Scale

The Psycho-Physical Health Scale (SPFZ-1; Majstorović, 2011) is intended as a self-assessment of the degree of presence of psycho-physical health disorders. The scale has a total of 23 four-point Likert-type items. The scale consists of the five dimensions, as follows: Physical Health Disorder (e.g., *In the last few weeks, have you had stomach problems or other digestive issues (gastritis, etc.)?*), Fear and Anxiety (e.g., *In the last few weeks, have you been tense and nervous?*), Depressive Reactions (e.g., *In the last few weeks, have you felt like you are worthless as a person?*), Fatigue (e.g., *In the last few weeks , have you had the impression that you were tired for no apparent reason?*), Disorder of Social Functioning (e.g., *In the last few weeks, have you avoided meeting people?*). The instructions given to the respondents were to evaluate, on a four-step scale, the extent to which they had experienced any of the symptoms of a health disorder in recent weeks (1 - *no*, *I did not*; 2 - *yes, but rarely*; 3 - *yes, often*; 4 - *yes, daily*).

The Ethical Dissonance Scale

The Ethical Dissonance Scale (SUED2R; Majstorović, 2020) is constructed according to the Cyclical Model of Ethical Dissonance (Burchard, 2011), which predicts the situation of "low ethics of the organization and high ethics in employees", as one of two forms of ethical discrepancy between an individual and an organization. The questionnaire consists of 9 items in which respondents evaluate the frequency of the previous situation by using a five-point Likert-type scale (1 - *never*; 2 - *very rare*; 3 - *sometimes*; 4 - *often*; 5 - *very often*) (e.g., *In the past year, I was required to withhold information even though our work is transparent.*). Factor analysis of these items yielded three dimensions that were interpreted as harassing others, deceiving others for the benefit of the organization, and supporting the wrong persons in the organization (3 items per factor).

Data Collection and Analysis Procedures

The data were collected through an online survey consisting of three questionnaires and a list of demographic characteristics. Before completing the questionnaire, respondents were provided with all information needed to give their informed consent to participate. The survey was conducted during November andDecember of the year 2019, in the territory of the Republic of Serbia and Bosnia and Herzegovina.

After verifying the integrity and quality of entered data (Majstorović, 2012b), the analyses were conducted by using statistical descriptive tech-

niques, calculating correlations, using multiple regression analysis, and analysis of variance. All analyses were conducted by using IBM SPSS Statistics (Version 23).

Results

Since research on the frequency of external ethical dissonance at work has not been conducted until now, the results of the frequency of ethical dissonance in the entire sample of respondents are presented below. The analysis of relationships was conducted on a sample reduced to the number of employees who were in a state of ethical dissonance at least once in the past year. Frequency distribution revealed that out of the total of 311 employees surveyed, 72% (224 respondents) stated that they had been in a state of ethical dissonance at least once in the past year, due to pressure by others in the organization. It was also noticeable that over 20% of this group of employees estimated that ethical dissonance occurred moderately to very often (Figure 2).
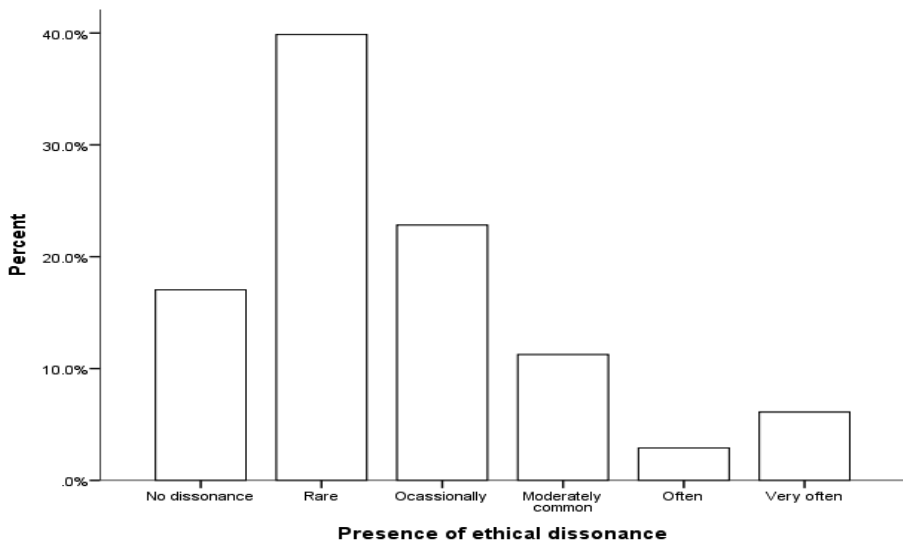
Figure 2. Frequency distribution of ethical dissonance at work (N = 311)

If one compares percentages of the incidence of ethical dissonance within the public and private sectors, it can be seen that there is a weak tendency to more frequent dissonance within the public sector, although the state of dissonance is more frequent in the private sector when estimated as "very often" (Figure 3).
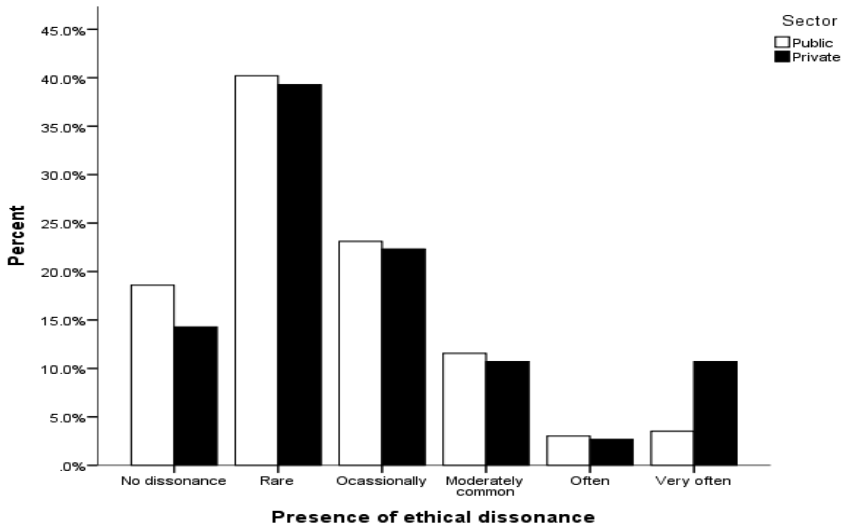
Figure 3. Estimated frequency of ethical dissonance among employees in two industrial sectors (*N* = 311)

Distribution of dissonance attendance percentages across categories of seniority indicates a tendency for employees with a seniority of over 15 years to report the presence of ethical dissonance at work, compared to the other two groups (Figure 4). The analysis results of the significance of differences by the sector and seniority are presented later in the text.
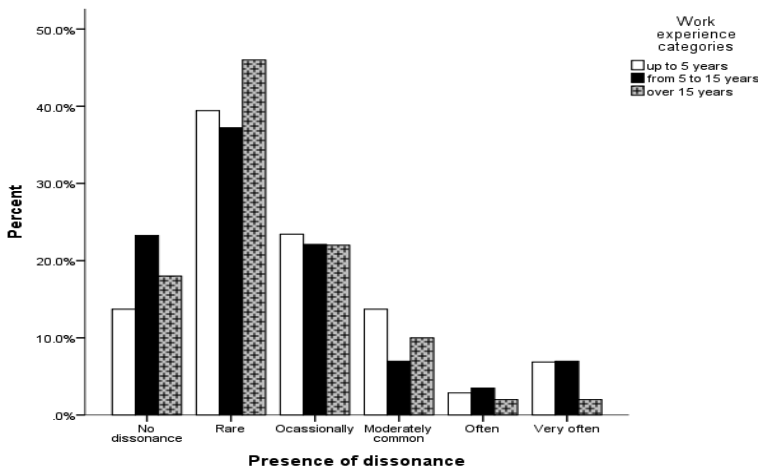
Figure 4. Estimated frequency of ethical dissonance with regard to employee experience (*N* = 311)

The research results obtained on the sample reduced to 224 employees are presented below. Table 2 shows measures of the central tendency and dispersion, skewness and kurtosis of the frequency distributions of symptoms of health disorders, measures of the frequency of ethical dissonance and its facets, as well as the coefficient of internal consistency (Cronbach's alpha α) of all measures applied.

Table 2
Descriptive characteristics of the health scale and ethical dissonance scale dimensions

Variable	*M*	*SD*	Skewness	Kurtosis	Range	α
Psycho-phys. Health Total	42.74	10.57	0.52	-0.29	23-72	.91
Physical Health	6.36	1.88	0.21	-0.65	3-11	.61
Fear and Anxiety	7.52	2.29	0.71	0.02	4-15	.68
Depression Reactions	13.33	3.89	0.81	0.16	8-26	.77
Fatigue	6.34	2.29	0.46	-0.57	3-12	.74
Social Functioning Disorder	9.14	2.52	0.49	-0.30	5-16	.71
Ethical Dissonance Total	15.20	5.24	1.56	2.47	10-36	.78
Supp. the Wrong Person	5.65	2.84	1.22	0.98	3-15	.82
Harassing Others	5.34	2.26	1.18	1.33	3-14	.70
Deceiving for the Org. Benefit	4.21	1.85	1.85	2.87	3-11	.66

Note. M – mean; *SD* - standard deviation; α - alpha coefficient of internal consistency.

The values in this table indicate that frequency distributions are close to the normal curve, except in the case of the distribution of scores on the ethics dissonance questionnaire. The left-curved and elongated distribution of these scores is a result of the fact that a relatively large number of participants chose the category 'never' compared to other categories on the rating scale.

Hypotheses Testing

The results of hypothesis testing are presented below. According to H1, a significant difference is expected in the frequency of external ethical dissonance between employees in public and private sectors. The results indicate that the private sector employees report a statistically significant greater frequency of ethical dissonance, especially in the form of pressure to deceive others in order to maximize benefits for the organization (Table 3). Since the measures of ethical dissonance frequency showed deviations from normality, and the homogeneity of the variance test was statistically significant, a bootstrapping method was applied to correct the standard error in the differences between the mean values, and to check the previous conclusion. The results

obtained on 1,000 generated samples led to the same conclusion. Namely, 95% confidence intervals for the calculated standard errors of differences were of the same sign and in the range of -3.59 to -0.20 for the Total ethical dissonance scores, and in the range of -2.01 to -0.86 for Deceiving for the benefit of the organization scores.

Table 3
Differences between employment sectors in frequency of ethical dissonance at work

Variable	Sector	*N*	*M*	*SD*	*t*	*df*	*p*	Hedges'g
Total of Ethical Dissonance at Work	Public	144	14.58	4.46	2.20	124.28	.03	.00
	Private	80	16.33	6.27				
Harassing Others	Public	144	5.21	2.17	1.10	222	.27	.00
	Private	80	5.56	2.42				
Deceiving for the Org. Benefit	Public	144	3.69	1.18	5.05	100.56	.00	.01
	Private	80	5.14	2.40				
Supporting the Wrong Person	Public	144	5.67	2.73	0.10	222	.92	.00
	Private	80	5.63	3.05				

Note. M – mean; *SD* – standard deviation; *t* – value of t-test; *df* – degrees of freedom; *p* – significance level.

With at least 95% of certainty, it has been concluded that the results fully support H1, that is, that employees in the private sector are significantly more likely to be in the state of ethical dissonance, because they are more often forced to deceive others in order to contribute to the business benefit of their organizations. There are no cross-sector differences when it comes to the external pressure to harass others or to support the wrong people.

The hypothesis of an association between the incidence of total dissonance, as well as three types of ethical dissonance at work on one side, and total health and five aspects of psycho-physical health on the other side (H2), was tested by calculating Pearson's correlation coefficient, and by using multiple regression analysis, including the bootstrapping method. As it can be seen in Table 4, the occurrences of ethical dissonance at work systematically and positively correlate with almost all measures of the incidence of psycho-physical health disorder symptoms in employees. According to the magnitude of correlation coefficients, it can be concluded that ethical dissonance probably contributes to the onset of depressive reactions, fear and anxiety, symptoms of disorders of social functioning, but also to the occurrence of fatigue.

A significance of three types of ethical dissonance as predictors of psycho-physical health disorder symptoms was examined in a series of multiple regression analyses, first considering a measure of the overall health, and then with respect to five aspects of health. As Table 5 shows, all regression models are statistically significant at the 0.01 level.

Table 4

Correlations of frequency of ethical dissonance at work and symptoms of psycho-physical health disorders

Variable	Total Ps-Ph. Health	Physical Health	Fear and Anxiety	Depression Reactions	Fatigue	Social Funct. Disorder
Total of ethical dissonance at work	.42**	.22**	.37**	.38**	.34**	.35**
Harassing others	.31**	.12	.28**	.28**	.26**	.28**
Deceiving for the Org. Benefit	.30**	.16*	.27**	.30**	.25**	.22**
Supporting the Wrong Person	.32**	.21**	.28**	.28**	.26**	.28**

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

Table 5

Regression models of employees' health predicted by three types of ethical dissonance

Criteria	R	R^2	df_1, df_2	F	P
Total psycho-phys. Health	.42	.18	3, 22	15.73	.00
Physical Health	.23	.05	3, 22	4.02	.01
Fear and Anxiety	.37	.14	3, 22	11.95	.00
Depression Reactions	.39	.15	3, 22	12.84	.00
Fatigue	.35	.12	3, 22	10.25	.00
Social Functioning Disorder	.35	.12	3, 22	10.38	.00

Note. R – multiple correlation coefficient; *R²* – multiple determination coefficient; *df* – degrees of freedom; *F* – value of F-test; *p* – significance level.

We can state that the three forms of external ethical dissonance form 18% of the common variance with measures of the overall health disorders, and that they predict between 5% and 15% of the variance of five facets measures of psycho-physical health.

Table 6 also shows that almost all types of ethical dissonance are statistically significant predictors of both overall and individual aspects of health disorders. It can be emphasized that particularly the pressure to harass others predicts the disorder of almost all individual aspects of health. The ethical dissonance occurred due to such pressure most conclusively predicts the onset of fear and anxiety, as well as a disorder of social behavior. Deceiving others to maximize benefits to organization is the type of ethical dissonance that better predicts the onset of depressive reactions in employees, while the pressure to support the wrong people covariates with the symptoms of physical health disorders, and the disruption of relationships with others.

Table 6
Significance of ethical dissonance types as predictors in employee health models (N = 224)

| | Predictors | | | | | | | | |
| | Supporting the wrong person | | | Harassing others | | | Deceiving for the org. benef. | | |
Criteria	β	t	p	β	t	p	β	t	p
Total p-f. Health	.17	2.41	.02	.20	2.91	.00**	.20	3.06	.00
Physical Health	.16	2.06	.04	.04	.53	.60	.09	1.35	.18
Fear and Anxiety	.13	1.86	.06	.19	2.77	.01**	.18	2.70	.01
Depression Reactions	.14	1.88	.06	.17	2.54	.01**	.21	3.19	.00
Fatigue	.12	1.71	.09	.18	2.56	.01**	.17	2.52	.01
Social Funct. Disorder	.15	2.12	.04	.19	2.75	.01**	.12	1.84	.07

The stability of resulting regression models could be tested by introducing moderators such as: type of organization, gender, age, work experience, educational level, organization with a developed ethics program or organization without such a program. However, due to the limits of this text, the moderating effect of these factors is addressed subsequently, and the results reported in a future paper.

The following analyses test the expectation that there are differences in the frequency of ethical dissonance among trainees different by gender (H3) and years of service (H4), that is, that these groups of employees are potentially different in the level of pressure to behave unethically at work. The results of the analysis of gender differences confirm H3. They show that male, M = 14.83; SD = 4.83, and female, M = 15.29; SD = 5.34, employees do not differ significantly in the frequency of externally caused overall ethical dissonance, $t(222)$ = .50, p = .62, nor in the frequency of the three specific forms of ethical dissonance at work.

The results also confirm H4, indicating that three groups of employees differing in years of service have self-assessed significantly different levels of ethical dissonance, the foremost as being pressured to deceive for the benefit of their organization, $F(2, 221) = 5.72$, $p < .01$. Post-hoc comparisons show that employees with up to 5 years of service report significantly more frequent pressure to deceive others than employees with more than 15 years of service. Due to the deviation from normality in the variable deceiving for the benefit of the organization, as well as a statistically significant homogeneity of the variance test, the bootstrapping method was applied. 1,000 samples produced in this way show that the estimated standard errors of differences between the groups have the same sign. Accordingly, the same conclusion was reached about the statistical significance of the differences between the first and the third seniority group according to the pressure to deceive others for the benefit of the organization (Figure 5).

Figure 5. Differences between seniority groups according to the pressure to deceive for the benefit of the organization ($N = 224$)

Discussion

The aim of this paper was to investigate the frequency of externally induced ethical dissonance at work, and to analyze possible effects that frequency of ethical dissonance had on the psycho-physical health of employees. Based on indirect findings in previous research, it was assumed that the frequency of externally induced ethical dissonance at work correlateed significantly with the frequency of psycho-physical health disorder symptoms in employees. Also, it was expected that ethical dissonance occured equally in different gender groups, unequally in public and private sectors, and unequally among groups of employees differing in years of service. The results were interpreted in accordance with the Theory of Self Preservation, the Cyclic Model of Ethical Dissonance at Work, and with the conceptual determination of external ethical dissonance at work offered here.

We found that 72% of surveyed employees reported to be in a state of ethical dissonance at least once in the past year, that over 20% in this group estimated that ethical dissonance occured moderately to very often. This situation also occurred more frequently among employees in the private sectors than in the public sector. Since similar research has not yet been conducted, these results cannot be compared to other findings, but they certainly indicate that the percentage of employees exposed to pressure to act contrary to organizational ethical standards (e.g., corruptively) is very high.

Testing the H1 hypothesis has shown that, in relation to the companies in the public sector, employees in private companies are significantly more likely to be exposed to pressure to deceive others for the sake of maximizing benefits for the organization. When the two sectors are compared according to two remaining dimensions of external ethical dissonance (harassing others, and supporting the wrong person), it has been found that the existing differences are not statistically significant. Specifically, employees in the private sector are more often pressured to provide wrong information about a product, to charge more expensively than the price list, and to break down on the product whenever they can. According to the theory of self-preservation (Ayal & Gino, 2011), and to results of the previous research (Aquino & Reed, 2002; Bazerman & Tenbrunsel, 2011), such pressure creates a state of ethical dissonance, because one wants to retain the image of oneself as a moral person, and wants to avoid the temptation to oppose organizational ethical standards. Of course, in the organizational context, such pressure cannot be easily avoided. Avoidance is often related to risk concerning the organizational status, as well as security of employment. Individuals and groups that exert pressure use various methods of coercion and reinforcement, seeking to change a person's behavior. This often involves corrupt rationalizations as a means of resolving the state of ethical dissonance. The final result of the spread of this pressure is a change of ethical climate in the work environment, that is, a change in the perception of organizational ethical standards and practices, and their relativization. This

situation, if it is followed by the promotion of a "new ethic", probably leads towards favoring particular goals at the expense of organizational interests, which can be considered as a process of corrupting employees' attitudes and behavior (Ashforth & Anand, 2003; Majstorović, 2012).

The hypothesis regarding association between frequency of external ethical dissonance and psycho-physical health (H2) has been supported. The correlation of obtained coefficients indicate that measures of ethical dissonance at work and measures of health disorders share over 16% of variance. We have found that measures of the incidence of ethical dissonance as a whole and its three dimensions systematically and positively correlate with almost all measures of the incidence of psycho-physical symptoms of health disorders in employees. Firstly, ethical dissonance probably contributes to the onset of depressive reactions, fear, anxiety, and symptoms of disorders of social functioning, but also to the occurrence of fatigue. An interesting finding is that the pressure to support the wrong person in the organization contributes most to disorders of physical health.

The analysis of prognostic models has shown that all five aspects of health can be predicted based on the frequency of ethical dissonance caused by external pressure at work. According to a number of significant "β" coefficients, it has been observed that Harassment of Others is the type of ethical dissonance that best predicts the incidence of symptoms of mental health disorders, most notably the occurrence of fear and anxiety, impaired social functioning, as well as depressive reactions and fatigue. This is in line with research findings whereby perpetrators, as well as targets of mobbing, experience health impairment and personal well-being disorders (Evans, et al., 2007). More detailed analyses show that the forced harassment of others probably produces specific symptoms in the perpetrator of the harassment, such as heightened fear of others, $r(222) = .28$, $p = .00$, tension and nervousness, $r(222) = .27$, $p = .00$, the tendency to avoid meeting others, $r(222) = .26$, $p = .00$, and decreased enjoyment in talking to others, $r(222) = .26$, $p = .00$.

The second most important predictor of employees' health disorders is Deceiving others to maximize the benefits of an organization, which predicts an onset of depressive reactions, fear and anxiety, and fatigue. In absence of research on the effects of deceiving others on health of the offender, whose findings would be compared, here we will only list and discuss the findings of this research. Externally imposed deceiving of others contributes to the occurrence of depressive reactions, such as loss of appetite, $r(222) = .28$, $p = .00$, doubts about one's own ability to work, $r(222) = .27$, $p = .00$), and the impression that what the person is doing has lost its meaning, $r(222) = .20$, $p = .00$. In addition, deceiving others is likely to cause: fear for no clear reason, $r(222) = .28$, $p = .00$, the feeling of quickly losing "freshness of spirit", $r(222) = .25$, $p = .00$, the impression of never getting enough sleep, $r(222) = .22$, $p = .00$, as well as tension and nervousness, $r(222) = .19$, $p = .00$.

Finally, externally imposed Providing Support for the wrong people in an organization probably has a significant effect on health, and is the only ethical dissonance state that is likely to contribute to physical health disorders. This is manifested in the form of gastrointestinal problems and gastritis, $r(222) = .23$, $p = .00$, as well as in a sense of physical exhaustion, $r(222) = .17$, $p = .01$. In addition, it covariates with the frequency of symptoms of social functioning disorder in the form of a reduced enjoyment in talking to others, $r(222) = .26$, $p = .00$, and avoidance of others, $r(222) = .25$, $p =. 00$.

Previous research has found that people seek to preserve integrity and avoid behaving unethically (Aquino & Reed, 2002; Bazerman & Tenbrunsel, 2011). Accordingly, the findings of this research suggest that such avoidant behavior likely presents an effort to preserve health. If pressure to break organizational ethics cannot be avoided, one probably pays the price in weakened health, mainly mental health. Our results indicate that harassing others for the sake of someone else's interest means becoming instrumentalized as a person, which can contribute to the onset of fear, depressive reactions, a disruption in relationships with others, and states of exhaustion (fatigue). Equally, deceiving others about the company's products and services diminishes the employee's self-confidence and ability to work, seeing as it deprives him or her of too much energy. Finally, the pressure to support the wrong people in the organization probably contributes to the occurrence of difficulties with digestion, to the feeling of physical burnout, and to disruptions in relationships with others.

Results also reveal that women and men report an equal frequency of external ethical dissonance at work, that is, they are approximately equally exposed to pressure to act contrary to the organizational ethics. A very important finding is that employees with up to 5 years of work experience are significantly more likely to deceive and harass others than employees with over 15 years of service. This could mean that younger people and newcomers in the organization are targeted by those who are prone to corrupt others, either by requiring from newcomers to deceive, abuse, or support persons who will support them in return. Due to probable absence of a developed ethics program in organizations, these findings could also mean that part-time employees and novices are recruited and "socialized" in an opportunistic attitude towards organizational and/or professional ethics. Since the usual motivation for this is to favor particular interests of corrupt individuals and groups at the expense of the interests of the organization, these individuals or groups will, by introducing new members, work to preserve or further strengthen the corrupt ethical climate in the organization (Majstorović, 2012). The results of this research indicate that the expansion of corrupt behavior (behavior contrary to organizational ethical principles) is likely to lead to the impairment of employees' mental health, which explains why people generally feel disadvantaged in such an environment. The problem in many organizations is that there are no developed mechanisms within the ethics program which can be put in place by employees in order to protect themselves from corrupting influences, and

thereby exercise their right to a healthy work environment. For the first time, this research suggests that corruptive influences could pose a real threat to the employees' health, and could restrict their right to a healthy work environment.

Due to a cross-sectional and correlational research design, this study cannot establish a causal relationship between ethical dissonance measures and measures of health. However, it is less likely that symptoms of psycho-physical health disorders in employees precede the occurrence of ethical dissonance at work, nor that the frequency of external ethical dissonance somehow affects the formation of conditions prevailing in private or public organizations.

A significance of this research is that it is the first to discuss the health consequences of corrupting members of an organization. The results show that employees share negative feelings in corrupt organizations, because the pressure to behave unethically leads to fear and insecurity, depressive reactions, and disruptions in relationships with others. The future research should validate these findings within organizations where there is a developed and active ethics program. In particular, the future research should examine the effects of numerous moderator and mediator variables on this relationship. For example, expected moderating effects could be the size of an organization, type of organizational culture and ethical climate, and periods before and after a crisis in a company's business.

Conclusion

The main objective of this study was to analyze the relationship between the frequency of externally induced ethical dissonance at work and the incidence of symptoms of psycho-physical health disorders. The results clearly showed that external ethical dissonance was a frequent state in employees, who were often asked to act in a manner that was contrary to the organizational work ethic. External ethical dissonance was found in 72% of employees, significantly more often in organizations in the private sector than in the public sector. Furthermore, the findings also showed that conforming to unethical pressure in the organization, more precisely, deceiving others for greater benefit to the organization, harassing others and/or supporting the wrong persons in the organization, was likely to impair the perpetrator's health. We found that a greater frequency of external ethical dissonance at work probably contributed to a more frequent occurrence of depressive reactions, fear and anxiety, states of fatigue, as well as disruptions in relationships with others at work. The results also indicate that the forced support for the wrong persons probably leads to physical health disorders in the perpetrator. The significance of these findings is that they discuss, for the first time, the link between employees' health and their exposure to pressure to act corruptly. The future research should examine moderating and mediating effects of individual,

group and organizational factors on the relationship between external moral dissonance and psycho-physical health.

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MORALNA DISONANCA NA RADU I PSIHOFIZIČKO ZDRAVLJE ZAPOSLENIH

Cilj ovog istraživanja bio je utvrditi učestalost javljanja moralne disonance na radnom mestu kao i njene moguće posledice po psiho-fizičko zdravlje kod uposlenika. Etička disonanca definisana je kao stanje nastalo usled nesklada odluke ili akcije uposlenika i etičkih standarda važećih u organizaciji, pre svega, stanja izazvanog usled neetičnih zahteva postavljenih uposleniku od strane menadžmenta. Na uzorku od 311 uposlenika oba pola, zaposlenih u privatnom i javnom vladinom sektoru (56.7% u javnom vladinom sektoru), različitog obrazovnog nivoa, različite starosti i radnog staža, primenjene su mere psiho-fizičkog zdravlja, mere učestalosti etičke disonance na radu i upitnik demografskih karakteristika. Rezultati pokazuju da od 311 ispitanika njih 72% izveštava da je u poslednjih godinu dana barem jednom bilo u stanju etičke disonance, tako da su analize relacija merenih konstrukata sprovedene na ovih 224 uposlenika. Faktorizacijom upitnika SUED2R nađeno je da se mere etičke disonance, prema vrsti neetičnog zahteva, razvrstavaju u tri indikatora: laganje u korist organizacije, uznemiravanje drugih i podržavanje pogrešnih ljudi. Utvrđeno je da je učestalost etičke disonance značajno veća u privatnom nego u državnom sektoru, da povećana učestalost disonance na radu (posebno pritiska da se uznemiravaju drugi) kovarira sa povećanom učestalošću simptoma poremećaja svih merenih aspekata zdravlja. Zaključeno je da pritisak ka neetičnom (koruptivnom) ponašanju i nerazvijenost mehanizama zaštite od takvog pritiska u organizacijama verovatno doprinose narušavanju psiho-fizičkog zdravlja uposlenika. Značaj ovog istraživanja je u tome što je, po prvi put, jasno utvrđeno da je pritisak ka koruptivnom ponašanju povezan sa zdravljem uposlenika.

Ključne reči: etička disonanca, korupcija, psihofizičko zdravlje, radna etika, zaposleni

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EVALUATION OF THE ACCURACY OF PERSONALITY JUDGMENTS BASED ON WRITTEN VERBAL PRODUCTION

The process of personality judgment occurs in daily social interactions and represents an attempt to identify characteristics of someone else's personality, in the way to explain past and predict future behaviors. The results of this process have implications on future decisions and actions of people. This research aimed to examine the accuracy of non-expert ratings of Extraversion and Conscientiousness based on short written texts. The sample consisted of 215 participants (M_{age} = 28.58, SD = 10.30; 80.5% females). The exclusion criterion was that participants were psychologists or psychology students, i.e., individuals familiar with personality research and taxonomies. Participants rated Extraversion and Conscientiousness, based on the texts written by five different individuals. Criteria used to estimate the accuracy of judgments were the agreement between self-report measures on HEXACO PI-R from people who wrote the texts and ratings from participants, as well as the agreement between multiple raters. The results showed that there was a moderate self-other agreement for Extraversion and Conscientiousness. Also, the results showed that there was a high between-raters agreement for Extraversion and Conscientiousness. This study indicates that it is possible to judge one's personality based on written verbal production, as well that raters tend to form similar impressions about the personality from written texts.

Key words*: accuracy, personality judgment, personality traits, written verbal production

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Introduction

The process of personality judgment occurs in daily social interactions and represents an attempt to identify traits of someone else's personality, thus to explain past behaviors, and also to predict future behaviors (Funder, 1991 as cited in Funder, 1995). As in other types of judgement, in the process personality judgment a person is compared to a reference group (Wood et al., 2012). This means that the same cognitive mechanisms are employed as in the judgment of nonsocial stimuli such as sizes, tones, and weights (Wood et al., 2012). People can make judgments of different personality traits such as fearlessness, sociability, fairness, etc., based on observation (Funder, 1995). Personality judgment occurs in different life contexts, and the results of this process have implications on future decisions and actions of people (Funder, 1995; Funder, 1999). In the case of everyday life situations, personality judgment can be used to explain why a person is prone to impulsive behavior, while in business situations, in the selection process, it can be used to evaluate future work performance (Christiansen et al., 2005; Funder, 1995). In both described cases, indicators of the personality trait of Conscientiousness are assessed (Christiansen et al., 2005; Funder, 1995). The process of personality judgment often takes place in everyday life, as well as under controlled laboratory conditions (Funder, 1995). Personality assessment is conducted by professionals in various fields of applied psychology, but also by non-experts (Funder, 2015). In the field of clinical psychology, accurate personality assessment is important for giving a correct diagnosis and development of a successful treatment plan (Funder, 1999). Personality is more frequently assessed in daily life compared to the contexts in which psychologists perform assessments. Therefore, exploring accuracy of non-expert personality judgments is of a great importance (Funder, 2015).

Accuracy of Personality Judgments

Accuracy of personality judgment belongs to one of two traditions studying accuracy of interpersonal perception, the other one being accuracy of emotion or affect judgment (Hall et al., 2017). Judgment of affective states is mostly done by social psychologists, while judgment of personality traits is mostly done by personality psychologists (Hall et al., 2017). In different types of judgment, including personality judgment, errors happen all the time (Funder, 1995). The process of personality judgment can be conceptualized through the Realistic Accuracy Model (RAM), according to which the judgment process consists of multiple subprocesses that run in a predetermined order (Funder, 2015). For the overall outcome of the judgment to be accurate, it is essential that no errors occur in the following three subprocesses (Funder, 2015): (1) It is necessary that the person being evaluated exhibits behavior and cues rel-

evant for the rating of a certain personality trait. (2) It is required that information about the manifested behavior and cues are available to the rater, and that the rater is able to detect the information. (3) It is required from the rater to properly use behavioral information that is available.

In the field of personality judgment, there are three issues to be addressed: (a) what type of accuracy measure is used, (b) who makes the judgment, and (c) what material is being used for judgment (Connelly & Ones, 2010). Accuracy of personality judgments can be conceptualized in several ways, with the most frequent use of two types of accuracy measures (Funder, 2012). One of the most commonly used measures of accuracy is the convergence between self- and other- ratings of the same trait (Funder, 2012). A large number of studies have shown that there is convergence between self- and other- ratings of the same trait, and that the mean observed self–other correlations corrected for the test-retest reliability range from .10 to .61 (e.g., Beer & Watson, 2008; Beer & Watson, 2010; Connolly et al., 2007; Connelly & Ones, 2010; Hirschmüller et al., 2013; Watson et al., 2000). The effect size depends on the duration of contact between the rater and the person being rated, interpersonal intimacy between the rater and the person being rated, visibility of the trait, and evaluativeness of the trait (Beer & Watson, 2008; Connelly & Ones, 2010; Connolly et al., 2007). The convergence between self- and other- ratings has shown to be the highest for traits that are most visible (i.e., that are clearly and frequently expressed through behavior), namely Extraversion and Conscientiousness, while the convergence is the lowest for Neuroticism, which is considered to be characterized by affective states that are not directly accessible to other people (Connelly & Ones, 2010; Watson et al., 2000).

Another type of accuracy measure that is commonly used is the agreement between multiple raters (Funder, 2012). Numerous studies have found that there is the agreement between multiple raters when they rate personality, with mean interrater reliability corrected for the test–retest unreliability ranging from .22 to .55 (e.g., Albright et al., 1988; Beer, 2013; Connelly & Ones, 2010; Shevlin et al., 2003; Tskhay & Rule, 2014). The effect sizes also depend on the level of interpersonal intimacy and the type of information being used for judgment (Connelly & Ones, 2010). As in the previous case, the agreement between multiple raters is highest for Extraversion and Conscientiousness (Connelly & Ones, 2010).

It should be noted that both measures of accuracy have certain drawbacks (Funder, 2012). If the accuracy is defined as convergence between self- and other- ratings of the same trait, contamination of this type of accuracy may occur if respondents provide socially desirable responses to self-report measures (Funder, 2012). On the other hand, if accuracy is defined as the agreement between multiple raters, the potential risk is that the raters may share common biases, which will cause them to make systematic misjudgments (Funder, 2012).

In personality judgment, we can distinguish between several types of raters by the degree of acquaintance with the person being evaluated (Connelly & Ones, 2010). Personality judgments can be performed by people close to the person being judged such as family, friends, spouses, etc., (Connelly & Ones, 2010), as well as by people who are only moderately close, such as colleagues, roommates, classmates, etc., (Connelly & Ones, 2010). Raters may also be persons who have little-to-no knowledge of the person being judged such as acquaintances, customers, strangers, etc., (Connelly & Ones, 2010). A paradigm that explores situations in which a participant in the role of the personality rater has not had the opportunity to interact with the person being judged (i.e., they are complete strangers to each other) is called the zero-acquaintance paradigm (Albright et al., 1988).

In this paradigm, raters can be provided with different kinds of material for personality judgment, such as photos, videos with or without sound, texts, favorite music of the person being assessed, arranging brief encounters, showing the raters offices and bedrooms of the people being judged, etc. (see Connelly & Ones, 2010; Gosling et al., 2002; Holleran & Mehl, 2008).

In this study we will focus on the accuracy of non-expert ratings of Extraversion and Conscientiousness based on the short written texts in zero-acquaintance situation.

Personality and Verbal Production

People differ from each other in the words they use in speaking and writing, and these variations are proposed to reflect stable psychological differences including individual differences in personality (Fast & Funder, 2008; Pennebaker & King, 1999). Thus, various aspects of verbal production have been shown to correlate with personality traits (e.g., Fast & Funder, 2008; Hirsh & Peterson, 2009; Ireland & Mehl, 2014; Lee et al., 2007; Mehl et al., 2006; Pennebaker & King, 1999, Pennebaker et al., 2003; Yarkoni, 2010). However, the correlation coefficients are low to moderate, and do not reach high values (.20-.40). Sizes of correlations between language cues and Extraversion and Conscientiousness fall within this range. Previous studies have found the biggest number of language markers for Extraversion (Ireland & Mehl, 2014), but for the purposes of this paper, markers of Conscientiousness in language are also described. Extraversion is associated with more frequent use of words related to positive emotions, as well as with more frequent use of words related to social settings and social experiences (Bjekić, 2016; Hirsh & Peterson, 2009; Ireland & Mehl, 2014; Lee et al., 2007; Pennebaker & King, 1999; Yarkoni, 2010). High Conscientiousness is associated with avoiding words that denote negative emotions and swearing (Bjekić, 2016; Ireland & Mehl, 2014; Lee et al., 2007; Mehl et al., 2006; Pennebaker & King, 1999; Yarkoni, 2010).

Indicators of individual differences in personality can be found in written materials such as essays on different topics, texts obtained through creative writing, blog posts, email content, personal journals etc., (Gill et al., 2006; Letzring & Funder, 2018; Li & Chignell, 2010). Verbal material, which lacks paralinguistic information that can be used in the studies dealing with accuracy of personality judgment, can be produced in several ways: (a) by asking people to write about a specific topic, (b) by transcribing oral speech into written speech, thus removing paralinguistic features of languages such as tone and pitch of voice, (c) or by taking pre-existing verbal material such as emails, essays, blogs, posts etc. (Borkenau et al., 2016; Gill et al., 2006).

Using verbal material in studies in the field of personality judgment is relevant due to the rise in usage of computer-mediated communication, such as Facebook, Twitter, blogs, chat rooms, e-mail, etc. (Borkenau et al., 2016; Darbyshire et al., 2016; Li & Chignell, 2010). This type of communication consists of the written material, and therefore a reduced dose of personal information is obtained, especially non-verbal information that can be used for personality judgment (Borkenau et al., 2016; Darbyshire et al., 2016; Li & Chignell, 2010).

This research aimed to examine the accuracy of non-expert ratings of Extraversion and Conscientiousness based on short written texts obtained through the Stream of Consciousness paradigm. Extraversion and Conscientiousness were chosen for the assessment because they were the two easiest traits for the raters to perceive accurately, and were highly visible in various forms of materials (Connelly & Ones, 2010; Tskhay & Rule, 2014). Furthermore, these two traits had a substantial value in different real-life contexts, as well as practical implications on work (Witt, 2002). Other traits from the HEXACO model were not used in the present study primarily for practical reasons. Namely, judging personality on several traits would pose a high demand on participants, and probably jeopardize the validity of the assessments. Furthermore, it would be a highly difficult task for participants to judge strangers on traits that were already shown to have a lower agreement between multiple raters and convergence between self- and other- ratings (Connelly & Ones, 2010). Thus, the study aimed to assess how accurate could people judge a stranger's personality based solely on a short confession of private thoughts.

Method

Sample and Procedure

The sample consisted of 215 adult participants (80.5 % females; age 18 to 69 (M = 28.58, SD = 10.30)). The exclusion criterion was that participants were psychologists or psychology students. The participants were recruited

via snowball method through social media, and were instructed to send the questionnaire to adult acquaintances with diverse socio-demographical characteristics, as long that they were not psychologists or psychology students. The participation in the study was completely voluntary, and without financial compensation. The study was conducted in accordance with the Helsinki Declaration and the Code of Ethics of the Association of Psychologists of Serbia.

Participants gave their ratings of Extraversion and Conscientiousness on the Scale for assessing indicators of basic personality dimensions, based on the texts written by five different individuals. Prior to the administration of the questionnaire and written texts, participants gave their consent for taking part in the study. Instruments were distributed online and were filled-in anonymously.

Material Used for Personality Judgment

Written texts collected in a previous study by using the Stream of Consciousness task (SOC) were used as a material for personality judgment, and were chosen from the collection of 2,500 texts (Bjekić, 2016). The procedure for the Stream of Consciousness task was that people were instructed to write everything that came to their minds, continuously, without paying attention to grammar or text-consistency, for 20 minutes (Bjekić, 2016). Due to the fact that texts database also included scores of persons who wrote texts on the HEXACO-PI-R self-report form (Bjekić, 2016), we selected the texts that were written by people with high, average or low values of standardized scores on Extraversion and Conscientiousness, thus covering the continuum of both traits. A standardized score was considered high or low if the absolute value was above 1.5 standard deviations, in respect to the original sample in which they were analyzed (Bjekić, 2016). An additional criterion used for the text selection was that the content should cover a sufficiently wide range of life topics, such as student's life, friendship, family, daily activities, as it was usually through information on relevant life fields that personality was assessed in everyday life situations (Borkenau et al., 2016). Five texts from five different female individuals were selected. We used the texts that were written only by females, to control the influence of stereotypical gender roles on personality judgment (Mehl et al., 2006). These texts were used as the material based on which the participants were asked to rate the personality of the author. Descriptive statistics for various features of the texts are shown in Table 1.

Table 1

Descriptive statistics for various features of the texts

Texts	Text length*	Words (N)	Traits	Z
1	1013	200	X	-1.025
			C	-0.613
2	1085	235	X	0.689
			C	-1.843
3	1139	227	X	1.642
			C	1.643
4	830	168	X	-0.739
			C	0.617
5	846	207	X	-1.692
			C	0.617

Note. Characters without spacing. X – Extraversion; C– Conscientiousness; *Z* – standardized score for self-assessed personality trait by the text-authors.

Instrument Used for Personality Judgment

Scale for Assessing Indicators of Basic Personality Dimensions

This scale (Čerović, 2018) consists of brief descriptions of the highest (e.g., The person carefully considers the options when making decisions, is cautious and self-controlled; Prudence facet of Conscientiousness) and lowest values (e.g., The person makes decisions impulsively or with little thought about the consequences; Prudence facet of Conscientiousness) for each of the facets that represent Extraversion and Conscientiousness from HEXACO model of personality. Extraversion from HEXACO is characterized by liveliness, social self-esteem, social boldness, and sociability, while Conscientiousness encompasses characteristics such as organization, diligence, perfectionism, and prudence (Lee & Ashton, 2008). The instructions for the participants were to read every text carefully and try to rate the traits of the author of the text accordingly. . The questionnaire was shown below every text on which they rated the traits of the person who wrote the text. Ratings were done on a 5-point Likert scale. Cronbach's alpha coefficients of the scales were good, ranging from .72 to .89.

Data Analysis

Data were analyzed by using SPSS version 21 (IBM Corp, 2012). In order to gain an initial insight into the data, descriptive-statistical measures for the ratings of Extraversion and Conscientiousness were calculated. Correlation coefficients were used to investigate the relationship between the self-report measures of Extraversion and Conscientiousness from the people who wrote the texts and ratings from participants. For this analysis, Extraversion rating variable was created, which included ratings from all 5 texts by the rater, and the same was done for Conscientiousness (thus obtaining N = 1075). Two variables were created for the self-report measures, , one for Extraversion and one for Conscientiousness, which contained raw scores of self-reports of the authors of texts on given traits repeated by raters (215 times the value of self-report was repeated for each of 5 authors of texts). To determine the degree of agreement between the raters for the traits of Extraversion and Conscientiousness, interclass correlation coefficients (*ICC*) were calculated, more precisely *ICC* (2,1) and *ICC* (2, k) forms were calculated (Shrout & Fleiss, 1979). A two-way random effect model was applied with the type of absolute agreement (Koo & Li, 2016). For the purposes of this statistical analysis, the data were organized in the way that the ratings for facets of Extraversion and Conscientiousness were in rows, and the raters in columns.

Results

Descriptive Statistics

Table 2 presents a descriptive statistics for ratings of Extraversion and Conscientiousness. It can be noted that the average raters gave different estimates of Extraversion and Conscientiousness for different persons i.e., texts.

Table 2
Descriptive statistics for ratings of Extraversion and Conscientiousness by 215 raters

	Extraversion		Conscientiousness	
Text	*M*	*SD*	*M*	*SD*
1	2.99	0.82	3.98	0.69
2	1.84	0.73	2.79	0.76
3	4.58	0.59	4.03	0.77
4	2.62	0.79	3.23	0.93
5	1.84	0.80	3.42	0.88

Note. M – mean; *SD* – standard deviation.

Self-other Agreement in Judgments of Extraversion and Conscientiousness

In order to examine the relationship between self-report measures of Extraversion and Conscientiousness from the people who wrote the texts and ratings from participants, we used Pearson's correlation coefficients. As 215 raters assessed the five texts, it resulted in 1,075 assessments per personality dimension. The results showed that there was a moderate self-other agreement for Extraversion, $r(1075) = .44$, $p < .01$, and Conscientiousness, $r(1075) = .30$, $p < .01$. Therefore, this criteria for accuracy was met in the case of both personality traits.

Agreement between Multiple Raters for Extraversion and Conscientiousness

Table 3 lists the measures of the agreement with their respective confidence intervals, for both the single rater and all raters taken together, and for both personality traits. The table, *ICC* (2,1) and *ICC* (2, k) presents the forms respectively (Shrout & Fleiss, 1979). The following values were taken as criteria for interpreting the size of coefficients. *ICC* below .50 was treated as a low agreement, between .50 and .75 as moderate, between 0.75 and 0.90 as good, and above .90 as an excellent agreement (Koo & Li, 2016).

Table 3
Agreement between multiple raters for Extraversion and Conscientiousness

Personality trait	$ICC_{average}$	ICC_{single}	95% CI $ICC_{average}$	95% CI ICC_{single}
Extraversion	.99	.69	[.99, 1.00] $p < .001$	[.45, .95] $p < .001$
Conscientiousness	.98	.29	[.96, .99] $p < .001$	[.13, .78] $p < .001$

Notes. $ICC_{average}$ – intraclass correlation coefficient average measure; *ICC_{single}* intraclass correlation coefficient single measure; *95% CI* – 95% confidence interval.

The results showed that there was a high between-raters agreement for Extraversion and Conscientiousness (the intraclass correlation coefficient average measure, *$ICC_{average}$*). The ICC single measure (*ICCsingle*) reliability coefficient for Extraversion was satisfactory, however, the width of the 95% confidence interval for this value should be considered, which meant that there was a 95% chance that the true ICC value landed on any point between .45 and .95 (Perinetti, 2018). In the case of Conscientiousness, low reliability was obtained for the single rater, again with a wide 95% confidence interval.

Discussion

The aim of this study was to evaluate the accuracy of non-expert ratings of Extraversion and Conscientiousness based on short written texts in a zero-acquaintance situation. The results showed that there was a moderate self-other agreement for Extraversion and Conscientiousness. It was also shown that there was a high between-raters agreement for Extraversion and Conscientiousness.

Results regarding the self-other agreement indicate the convergent validity of the self-report and rating measures, and obtained coefficients are comparable to those from the previous studies (Funder, 2015). These findings also indicate that Extraversion and Conscientiousness are "visible" enough in written verbal production (Gill et al., 2006). The potential explanation for this finding is that the visibility of a certain trait depends on the context in which they are rated in, and therefore in the context of written verbal production, where indicators of Extraversion and Conscientiousness are sufficiently and equally visible (Back & Nestler, 2016).

Consistent with previous research, there was the agreement between multiple raters for Extraversion and Conscientiousness, and the obtained coefficients were higher in comparison to the previous studies (e.g., Albright et al., 1988; Tskhay & Rule, 2014). A possible reason for this could be that our study included a large number of raters, which was not the case in the previous studies. Consensus among multiple raters in the field of personality judgment is interpreted as a measure of accuracy (Funder, 2012; Tskhay & Rule, 2014). It is advisable to use the agreement between multiple raters, instead of single rater reliabilities, to avoid single rater's idiosyncratic judgments (Connelly & Ones, 2010). Another possible explanation is that the gained consensus is based on shared beliefs about what people are like in general i.e. stereotypes (Pretsch et al., 2014). However, it is necessary to keep in mind the limited generalizability of these findings, given that the coefficients have been obtained based on the ratings of only five texts.

When looking at the obtained results from the perspective of the RAM model, it seems that there are relevant cues of personality traits in the written texts, and that the raters have been able to detect and properly use them (Funder, 2015). Therefore, our data support the idea that the written verbal production, especially if it reflects one's inner thoughts and feelings, can be an appropriate material for personality judgment, as it provides personality-related cues usable in personality judgement even for the non-professionals.

Our study shows that it is possible to assess one's personality with satisfactory degree of accuracy based on only written verbal production, as well as that the raters tend to form similar impressions about the personality of the evaluated person. These findings are in line with previous research (e.g., Beer & Watson, 2008; Hirschmüller et al., 2013; Li & Chignell, 2010), and provide additional evidence to support language use as a marker of individual

differences in personality traits. It is important to emphasize that personality judgment in this study has been done by non-experts in a zero-acquaintance paradigm, based on the exclusively written material, and it was still done with considerable level of accuracy. Therefore, it seems that the accurate personality judgment is not the ability distinctive to highly trained professionals, but rather an adaptive ability that is essential in everyday functioning, especially in social interactions. However, it should be emphasized that the term accuracy in this area of research is used not in absolute terms, but rather with the awareness that in personality judgment we can only make approximations, and that there are errors in the process (Funder, 1995). For example, as we noted before, there is a risk that the raters may share common biases, which will lead them to form similar impressions, and which will cause all the raters to systematically misjudge (Funder, 2012). The most precise way to achieve accuracy would be to use behavioral prediction, i.e. to see if ratings of personality can successfully predict behavior and life outcomes associated with certain behaviors (Funder, 2012). In that way, we could truly compare the accuracy of experts and non-experts.

In addition to insights into the accuracy of personality judgment based on the written verbal production in a zero-acquaintance paradigm, this study is unique in several additional aspects. First, this is one of the rare studies of accuracy of personality judgment done in a non-English language. Therefore, it provides a glimpse into the cross-cultural university of the findings presented in previous studies. Second, this is one of the only studies that focused specifically on the accuracy as the main aim of the study, and therefore reported on different types of accuracy (the self-other agreement and the agreement between multiple raters). It can be observed that the very concept of accuracy and its magnitude varies in the case of the measures used, and in this study, accuracy is presented with multiple measures, and thus the outcome of personality judgment is more fully illustrated (Hall et al., 2018). Third, the positive findings on personality judgement accuracy by non-experts open up a question on the nature of the ability to judge one's personality, that should be further explored. Finally, the results have practical implications on how we judge others and present ourselves through computer-mediated communication, where personality judgment is sometimes made solely based on the verbal material.

Despite its contribution, our study has several limitations and drawbacks. First, we have provided participants with only 5 texts to judge. In an ideal scenario, a large number of raters would judge an equally large number of persons, i.e. texts. Unfortunately, this represents a highly time consuming and resource-wise challenging study, since every participant would need to dedicate approximately 20-hours to provide 200 personality judgements. Moreover, despite showing the level of accuracy on a zero-acquaintance personality judgement, this study cannot provide an insight into the aspects of verbal productions that serve as valid cues for personality assessment. Lastly, the results concern only two personality traits, from a single personality model.

Conclusion

The main results of the study have shown that there is a moderate self-other agreement for the traits Extraversion and Conscientiousness, i.e. that there is a moderate correlation between self-report measures of Extraversion and Conscientiousness from the people who wrote the texts and ratings from non-experts. Also, the main results of the study have shown that there is a high agreement between multiple non-expert raters for judgment of traits Extraversion and Conscientiousness. Our work adds to the body of knowledge about understanding how people can use others' linguistic style and word choice to make inferences about their personality.

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EVALUACIJA TAČNOSTI PROCENA LIČNOSTI NA OSNOVU PISANE VERBALNE PRODUKCIJE

Proces procene ličnosti javlja se u svakodnevnim socijalnim interakcijama i predstavlja pokušaj identifikovanja karakteristika tuđe ličnosti i na taj način objašnjavanja prošlog i predviđanja budućeg ponašanja. Rezultati ovog procesa imaju implikacije na buduće odluke i postupke ljudi. Ovo istraživanje imalo je za cilj da ispita tačnost laičkih procena ekstraverzije i savesnosti na osnovu kratkih pisanih tekstova. Uzorak je činilo 215 ispitanika ($M_{starost}$ = 28.58, SD = 10.30; 80.5% žena). Eksluzioni kriterijum bio je da su ispitanici psiholozi ili studenti psihologije, tj. da su upoznati sa istraživanjima i taksonomijama iz oblasti ličnosti. Ispitanici su procenili ekstraverziju i savesnost, na osnovu tekstova pisanih od strane pet različitih pojedinaca. Kriterijumi koji su korišćeni za ispitivanje tačnosti procene bili su slaganje mera samoprocene na HEXACO-PI-R-u ljudi koji su pisali tekstove i procena ispitanika, kao i slaganje između više procenjivača. Rezultati su pokazali da postoji umereno slaganje između procene od strane ispitanika i samoprocene autora tekstova u proceni ekstraverzije i savesnosti. Takođe, rezultati su pokazali da postoji visoko slaganje između procenjivača za ekstraverziju i savesnost. Ova studija ukazuje na to da je moguće proceniti nečiju ličnost na osnovu pisane verbalne produkcije, kao i da procenjivači imaju tendenciju da iz pisanih tekstova formiraju slične utiske o ličnosti.

Ključne reči: crte ličnosti, pisana verbalna produkcija, procena ličnosti, tačnost

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PROFESIONALNI STRES KOD MEDICINSKOG OSOBLJA[2]

Istraživanje je sprovedeno sa ciljem da se utvrdi nivo profesionalnog stresa na uzorku od 220 zdravstvenih radnika koji su pohađali akreditovan kurs „Dobra komunikacija sa pacijentima" koji je tokom 2018. i 2019. godine održan u Novom Sadu, Kragujevcu, Nišu i Beogradu. Preko 70% ispitanih zdravstvenih radnika je iz primarnog nivoa zdravstvene zaštite (domovi zdravlja i manje ambulante pri većim domovima zdravlja). Po završetku кursa, uz popunjavanje evaluacije i testova znanja učesnici su zamoljeni da anonimno popune i skalu profesionalnog stresa sa ciljem da se proceni nivo profesionalnog stresa. Rezultati su pokazali da je nivo profesionalnog stresa za ceo ispitani uzorak umeren (M = 64.40; SD = 12.43). Jedina dobijena značajna razlika je prema polu, odnosno pokazalo se da žene zdravstveni radnici imaju viši nivo stresa u poređenju sa muškarcima. Očekivane pretpostavke koje su se odnosile na postojanje razlika u nivou profesionalnog stresa u odnosu na bračno stanje, godine starosti, radni staž i radno mesto nisu dobijene. Sagledavanje nivoa stresa zdravstvenih radnika je od značaja za organizovanje tematskih edukacija, kurseva i preventivnog rada sa ciljem da se na vreme prepoznaju i spreče štetni uticaji profesionalnog stresa na fizičko i mentalno zdravlje medicinskog osoblja.

Ključne reči: medicinsko osoblje, primarna zdravstvena zaštita, profesionalni stres

Uvod

Stres je u savremenom načinu života jedan od najrasprostranjenijih štetnih faktora i faktora rizika koji ugrožava fizičko i mentalno zdravlje ljudi, kako u svakodnevnom životu i funkcionisanju tako i na poslu. Svetska zdravstvena organizacija je pre dvadesetak godina stres na radu proglasila svetskom epidemijom u smislu da je stres na radnom mestu označen kao jedan od glavnih činilaca lošeg somatskog i mentalnog zdravlja zaposlenih. Prošle godine je sindrom izgaranja na poslu (burnout syndrome), koji se dovodi u vezu sa profesionalnim stresom, prema Internacionalnoj klasifikaciji bolesti ICD -11 (International Classification of Diseases - ICD -11) koju izdaje SZO, proglašen legitimnom medicinskom dijagnozom (WHO, 2019). Istraživanje britanskih istraživača o uticaju profesionalnog stresa na fizičko zdravlje, psihološku dobrobit i zadovoljstvo poslom u okviru 26 različitih grupa zanimanja pokazalo je da šest zanimanja ima značajno veću podložnost negativnim posledicama stresa. To su sledeća zanimanja: zdravstveni radnici, nastavnici, socijalni radnici, zaposleni u pozivnim centrima, policajci i zatvorski čuvari (Johnson et al., 2005). Kad je reč o domaćim autorima, Čabarkapa i Đurišić-Bojanović (2014) navode da savremeni procesi globalizacije, razvoja informaciono-komunikacionih tehnologija i demografska promena radne snage radikalno menjaju kontekst rada, radno okruženje i strukturu radnih organizacija, što za posledicu ima to da je rad u mnogim oblastima već postao, ili će u budućnosti još više postati, sve intenzivniji, složeniji i odgovorniji, zahtevajući povećano mentalno-emocionalno naprezanje, uz sve složenije obrasce rada i interpersonalnih odnosa. U ovako definisanom kontekstu teško je izdvojiti koja su zanimanja najstresnija. Brojni organizacioni faktori poput vrste posla, radnog vremena, neusklađenosti sadržaja posla, uvođenja novih tehnologija, konfliktnosti profesionalnih uloga, loših fizičkih uslova radne sredine značajno doprinose stresogenosti određenog zanimanja. Pregledom različite relevantne literature može se zaključiti da se rad u zdravstvu nesumnjivo smatra izvorom visokog profesionalnog stresa.

Prema istraživanjima Evropske agencije za bezbednost i zdravlje na radu (European Agency for Safety and Health at Work – EASHW, 2009) o rasprostranjenosti profesionalnog stresa, stres na radnom mestu prisutan je kod svake treće zaposlene osobe u Evropskoj Uniji (EU), odnosno primećuje se trend porasta stresa na poslu od 1995. do 2005. godine sa 28% na 31%. Problem profesionalnog stresa godišnje uzrokuje gubitak od milion radnih dana, troškove od 20 milijardi eura i 5 miliona registrovanih nesreća i povreda na radu (Milczarek et al., 2009).

Stres i profesionalni stres

Iako je interesovanje za fenomen stresa multidisciplinarno i veoma zastupljeno u različitim naučnim oblastima decenijama unazad, i pored velikog broja istraživanja vezanih za problematiku stresa uopšte i profesionalnog stresa posebno, ne postoji opšteprihvaćena definicija ovog pojma kao ni jedinstven, sveobuhvatan i opšteprihvaćen teorijski model koji bi nudio univerzalno objašnjenje dinamike nastajanja i posledica koje stres tj. različiti stresori ostavljaju na psihofizičko zdravlje ljudi. Savremeni istraživači stres posmatraju kao složen bio-psiho-socijalni fenomen koji se javlja kao sistemski odgovor organizma (psiho-neuro-endokrino-imunološka reakcije) na delovanje različitih stresora koji remete psiho-fiziološku i psiho-socijalnu ravnotežu organizma (Čabarkapa, 2016).

Poslednjih godina u različitim oblastima (medicina rada, psihogija rada) veoma su zastupljena istraživanja uticaja profesionalnog stresa na zdravstveno stanje zaposlenih (Lazaridis, 2016) a posebno proučavanja uticaja profesionalnog stresa i posledica stresa na zaposlene u zdravstvenom sektoru (Belkić i Nedić, 2012; Jamal & Baba, 2014; Koinis et al., 2015; Kushal et al., 2018; Milutinović i sar., 2009; Milutinović i sar., 2012; Nedić i sar., 2010). Stres na radnom mestu je specifična vrsta stresa koja nastaje kao rezultat interakcije radnika i karakteristika posla. Profesionalni stres predstavlja štetan fizički i emocionalni odgovor koji se javlja onda kada zahtevi posla ne odgovaraju sposobnostima, mogućnostima, snagama ili potrebama zaposlenih (National Institute for Occupational Safety and Health - NIOSH, 2014). Preciznije, stres na radu je štetna psihofizička reakcija koja se javlja kod pripadnika određenih zanimanja ili kod ljudi koji obavljaju određene poslove kada uslovi i zahtevi posla nisu u skladu sa mogućnostima, sposobnostima i potrebama zaposlenih, tako da se oni osećaju napeto, neprijatno ili ugroženo (Lazaridis, 2016). Drugi autori navode da je stres na radu zbir povećanih zahteva i niskog nivoa odlučivanja (Karasek et al., 1981).

Zdravstvena struka, s obzirom na visoku odgovornost prema ljudskom životu i zdravlju, ali i zbog izloženosti specifičnim stresorima, poput hemijskih, bioloških i fizičkih štetnosti i smenskom radu, svrstava se u visoko stresne profesije. Produženo radno vreme, smenski i noćni rad, odgovornost pri donošenju odluka, kontakt sa obolelima i njihovim porodicama i emocionalno iscrpljivanje kod zdravstvenih radnika, utiču na povećan morbiditet od psihičkih smetnji i psihosomatskih bolesti (Carta et al., 2017; Lazaridis i sar., 2017). Određene grupe zanimanja u zdravstvenom sektoru kao na primer lekari različitih specijalnosti (hirurzi, lekari hitne pomoći, onkolozi, radiolozi, lekari u palijativnoj medicini, psihijatri) i medicinske sestre svih profila su hronično izloženi različitim stresorima koji utiču na povećanje povređivanja na radu i smanjenu radnu sposobnost zbog profesionalnog stresa i obolevanja (Andolhe et al., 2015; Wang et al., 2015). Radna mesta u zdravstvu koja su posebno stresna su jedinice intenzivne nege, odeljenja za opekotine, hitne

službe i operacione sale (Galjak, 2018). U istraživanjima je dobijeno da najviše nivoe profesionalnog stresa i simptoma sindroma izgaranja ima osoblje koje radi na hirurgiji (Sharma, Sharp, Walker, & Monson, 2008), u opštoj praksi (Cathebras et al., 2004; Goehring et al., 2005), na psihijatriji (Fischer et al., 2007; Priebe et al., 2005), dečjoj psihijatriji, internoj medicini, intenzivnoj nezi i onkologiji (Asai et al., 2007; Embracio et al., 2007; Travado et al., 2005). Neki autori posebno naglašavaju da su psihijatri kao grupa ranjiviji za doživljaj i razvoj profesionalnog stresa i simptoma sindroma izgaranja, u poređenju sa lekarima drugih specijalnosti i hirurzima (Kumar, 2007).

Brojni su faktori koji utiču na profesionalni stres kod medicinskog osoblja: visok nivo odgovornosti prema ljudskom životu i zdravlju, smenski rad, izloženost hemijskim i biološkim faktorima, mali broj radnika, finansijska ograničenja, nepredvidljivost situacija, preopterećenost poslom i rad sa neizlečivim pacijentima, odgovornost pri donošenju odluka, (Knežević, 2010; Eriksen et al., 2006). Faktori koji posebno utiču na profesionalni stres kod medicinskih sestara odnose se na širok opseg poslova koji se obavljaju i nizak nivo autonomije i odlučivanja, neadekvatna primanja, loša organizacija i zahtevni administrativni poslovi, neadekvatna sredstva za rad i mogućnost zaraze (Bosma et al., 1997; Nedić i sar., 2001; Ekić i sar., 2016; Mabić i sar., 2014). Rad u okruženju bez podrške pretpostavljenih i interprofesionalni konflikti uzrokovani problemima u komunikaciji, takođe, predstavljaju faktore koji uzrokuju profesionalni stres kod zdravstvenih radnika (Dušak, 2012; Milutinović i sar., 2009). Važno je uzeti u obzir da je u poslednjih nekoliko godina pritisak na medicinsko osoblje, a na lekare posebno, porastao u mnogim zemljama kao rezultat različitih reformi zdravstvene zaštite koje utiču na autonomiju lekara, namećući više administrativnog tereta i profesionalnih zahetva za stalnim usavršavanjem, što sve vodi ka višim nivoima profesionalnog stresa (Pejušković et al., 2011). Rezultati istraživanja o stresorima i radnoj sposobnosti na uzorku od 278 zdravstvenih radnika iz Zdravstvenog centra u Kraljevu i Zdravstvenog centra u Kosovskoj Mitrovici pokazali su da su svi parametri stresa statistički značajno veći kod radnika zaposlenih u Zdravstvenom centru Kosovska Mitrovica i da najveće vrednosti imaju stresori vezani za organizaciju, finansije i smenski rad. Svi faktori stresa su ujednačeni u odnosu na pol, osim smenskog rada koji je statistički značajno veći kod ženske populacije, i profesionalnih i intelektualnih zahteva koji su statistički značajno veći kod muškaraca (Galjak, 2018).

Faktori koji utiču na pojavu profesionalnog stresa

Od značaja za ovaj rad je model profesionalnog stresa Coopera i saradnika (Cooper et al., 1988) u okviru kojeg se naglašava da profesionalni stres predstavlja negativno psihološko stanje, odnosno dinamičku interakciju između osobe i radne sredine. Kada se poremeti „homeostaza" osoba-radna sredina,

pojedinac mora da se prilagođava i da aktivira strategije za prevazilaženje kako bi se ponovo uspostavila narušena stabilnost. U proučavanju profesionalnog stresa u ovom modelu fokus je na izvorima stresa i posledicama koje stres ima na psihičko i fizičko zdravlje. Prema ovom modelu izvori profesionalnog stresa koji potiču iz organizacije mogu se svrstati u pet grupa:

- intrinzički faktori posla (loši uslovi- buka, osvetljenje, mikroklima, izloženost toksičnim materijama),
- uloga u organizaciji (neodređenost uloge, konfliktnost uloge, odgovornost posla),
- međuljudski odnosi (odnosi sa nadređenima, podređenima, sa kolegama),
- karijera (sigurnost posla, ocenjivanje kvaliteta izvođenja posla) i
- organizaciona struktura i klima (participacija u donošenju odluka, nedostatak razumevanja i komunikacije).

U ovom modelu pretpostavlja se da na doživljaj profesionalnog stresa utiču i sociodemografski faktori (pol, bračno stanje, godine staža, godine starosti), porodični odnosi i ekonomski problemi. U istraživanju prikazanom u ovom radu, od podataka su prikupljeni samo sociodemografski podaci uz skalu stresa zato što je istraživanje sprovedeno na uzorku medicinskih radnika koji su pohađali akreditovan kurs „Dobra komunikacija sa pacijentima" i uz evaluaciju i test znanja na kraju kursa, zbog vremenske ograničenosti od strane organizatora, nije bilo mogućnosti za popunjavanje dodatnih instrumenata koji bi bili od značaja za bolje razumevanje problema stresa. Važno je naglasiti da bi primena dodatnih instrumenata kojima bi se ispitivali neki fenomeni od značaja za temu ovog istraživanja, iziskivala složenu proceduru dobijanja etičke saglasnosti za šta, u momentu donošenja odluke i dobijanja dozvole za sprovođenje ovog istraživanja, nije bilo vremena.

Individualni faktori

Pol

Nalazi većine studija pokazuju da žene ispoljavaju više nivoe profesionalnog stresa, iako ima i suprotnih nalaza, dok neke studije nisu otkrile nikakve razlike (Popov, 2018). Rezultati istraživanja ukazuju da žene zaposlene u zdravstvu percipiraju viši nivo stresa od osoba muškog pola (Adeb-Saeedi, 2002; Healy & Tyrell, 2011). U istraživanju koje je sprovedeno na uzorku od 312 medicinskih radnika u Hrvatskoj dobijeno je da žene imaju više nivoe stresa (Capan, 2017). Smatra se da razlike u izraženosti stresa između žena i muškaraca u zdravstvu delimično reflektuju različite socijalne uloge, kao i drugačiju socijalizaciju koju imaju pripadnici različitih polova. Osim toga, žene imaju veće radno opterećenje kada se uzmu u obzir radne i porodične obaveze. U jednom istraživanju (Popova i Popov, 2011), dobijen je nalaz da žene po-

kazuju više nivoe distresa u odnosu na muškarce, pri čemu je utvrđeno da žene stres ispoljavaju prvenstveno kroz brigu, napetost, poremećaj spavanja i zdravstvene komplikacije, ispoljavajući izraženiju instrumentalnu privrženost organizaciji, dok su muškarci vulnerabilniji na stresore u vezi sa platom i beneficijama. Istraživanje sprovedeno na uzorku medicinskog osoblja u Kosovskoj Mitrovici i Kraljevu pokazalo je da je smenski rad percipiran kao izvor stresa u značajno većoj meri kod žena nego kod muškaraca, dok su muškarci osetljiviji na izvore stresa koji se vezuju za profesionalne i intelektualne zahteve posla (Galjak, 2018).

Bračno stanje

Istraživanja stranih autora pokazuju da medicinsko osoblje koje je u braku ima više nivoe profesionalnog stresa u odnosu na razvedene ili udovce i u odnosu na samce (Al-Makhaita & Hafez, 2014; Hongxia et al., 2019; Ozor et al., 2016) što može da navodi na razmišljanje i pretpostavku da su zdravstveni radnici koji imaju porodične obaveze podložniji doživljavanju viših nivoa stresa na poslu ili da je frustraciona tolerancija zbog mnogo porodičnih obaveza i problema manja na radnom mestu. U istraživanju Olotunjija i Mokuolua (2014) su dobijeni suprotni nalazi tačnije da zdravstveno osoblje iz kategorije samci pokazuju više nivoe profesionalnog stresa.

Starost

U vezi sa godinama starosti i stepenom profesionalnog stresa kod medicinskog osoblja postoje različiti rezultati. Rezultati nekih istraživanja sugerišu da stariji radnici i oni sa više iskustva pokazuju manje stresa u poređenju sa mlađima i onima sa manje radnog iskustva. Ovaj podatak ipak treba uzeti sa rezervom jer odnos između starosti i stresa nije jednostavan, niti linearan – stariji radnici možda ne pokazuju manje stresa, već ga drugačije doživljavaju, ispoljavaju i prevladavaju (Popov, 2018). U drugom istraživanju (Milutinović i sar., 2009) dobijena je statistički značajna razlika u pogledu nivoa izraženosti stresa u odnosu na starost. Najniži nivo stresa ustanovljen je kod medicinskih sestara mlađih od 30 godina, a najviši nivoi stresa registrovani su kod medicinskih sestara starijih od 50 godina. U istraživanju Al-Makhaita i saradnika (2014) dobijeni su suprotni nalazi prethodno navedenim tj. da mlađe medicinske sestre doživljavaju više nivoe stresa. Rezultati istraživanja Healy i Tyrella (2011), takođe, pokazuju da mlađe medicinske sestre doživljavaju viši nivo stresa. U istraživanju stresa koje je sprovedeno u službama hitne medicinske pomoći u našoj zemlji dobijeno je da su najstariji (preko 56 godina) imali najviše fizičkih simptoma povezanih sa stresom i da im najveći problem predstavlja administracija i uvođenje elektronskih kartona (Budimski i sar., 2017).

Obrazovni nivo

Istraživanje stresa na uzorku medicinskog osoblja u našoj sredini pokazalo je da su lekari izloženi značajno višem nivou stresa u poređenju sa medicinskim tehničarima/sestrama (Lazaridis, 2016). Istraživanja su, takođe, pokazala da medicinske sestre nižeg nivoa obrazovanja u odnosu na medicinske sestre sa višim obrazovanjem doživljavaju više nivoe stresa na radnom mestu (Al-Makhaita et al., 2014). Moguće objašnjenje ovakvih nalaza može se pronaći u činjenici da medicinske sestre nižeg nivoa obrazovanja obavljaju fizički teže poslove u vezi sa zdravstvenom negom pacijenata i posao doživljavaju kao stresniji i zahtevniji. Suprotno navedenom, iz istraživanja autora iz Kine (Qi et al., 2014) se zaključuje da sestre višeg ili visokog obrazovanja i dužeg radnog staža doživljavaju više nivoe stresa jer se nalaze na odgovornijim i zahtevnijim pozicijama. Nalaz koji sugeriše da medicinske sestre s visokim obrazovanjem iskazuju viši nivo percipiranog stresa na poslu od niže obrazovanih, dobijen je i u drugim istraživanjima (Jenkis, & Elliott, 2004). Galjak (2018) je u istraživanju dobio da su svi ispitivani faktori stresa (organizacija, finansije, javna kritika, sudske tužbe, opasnosti i štetni faktori na poslu, konflikti i komunikacija i smenski rad) jednako percipirani, sa izuzetkom–profesionalnih i intelektualnih zahteva koji su značajno veći kod lekara u poređenju sa medicinskim tehničarima/sestrama.

Radni staž

Rezultati koji se odnose na radni staž i nivo stresa dobijeni u različitim istraživanjima nisu konzistentni. Postoje nalazi koji pokazuju da medicinske sestre sa više godina radnog staža pokazuju isti nivo profesionalnog stresa kao i sestre sa manje godina radnog staža (Nguyen et al., 2014). Druga istraživanja ukazuju da medicinske sestre koje imaju više godina radnog staža pokazuju manju podložnost profesionalnom stresu (Cavalheiro, Junior, & Lopes, 2008) i obrnuto, da medicinsko osoblje sa više godina staža doživljava više nivoe stresa (Qi et al., 2014). Dobijeni su i rezultati koji upućuju da medicinske sestre sa kraćim radnim stažom u mnogo višem stepenu doživljavaju profesionalni stres (Healy & Tyrella, 2011). Dužina radnog staža se i u istraživanju stresa kod zdravstvenih radnika u Hrvatskoj koji rade u vanbolničkim uslovima pokazala kao značajan prediktor nivoa profesionalnog stresa (Capan, 2017).

Radno mesto u zdravstvu

Istraživanja su pokazala da postoje razlike i u stepenu doživljavanja stresa u zavisnosti od radnog mesta. U istraživanju ove vrste (Capan, 2017) nije utvrđena statistički značajna razlika u pogledu stepena profesionalnog stresa između medicinskih radnika koji rade na tzv. objedinjenom hitnom bolničkom prijemu i osoblja koje radi u jedinicama intenzivne nege. S druge strane,

utvrđena je statistički značajna razlika između zaposlenih u hitnom bolničkom prijemu i tvz. vanbolničke hitne medicinske službe, pri čemu medicinske sestre/medicinski tehničari hitnog bolničkog prijema imaju više nivoe percipiranog stresa u odnosu na one zaposlene u vanbolničkoj hitnoj medicinskoj službi. Takođe, medicinske sestre/medicinski tehničari zaposleni u jedinici intenzivnog lečenja podložniji su stresu u značajno većoj meri u odnosu na zaposlene u vanbolničkoj hitnoj medicinskoj službi. U istraživanju sprovedenom na kineskim zdravstvenim radnicima dobijeno je da najviše nivoe stresa ispoljavaju medicinske sestre/medicinski tehničari na hitnom bolničkom prijemu, kao i da na funkcionalne mehanizme prevladavanja stresa na poslu negativno utiču obimna dokumentacija, kritike, nedostatak adekvatne opreme i noćni rad (Lu et al., 2015). U istraživanju na uzorku od 448 zdravstvena radnika u našoj zemlji dobijeno je da je broj izgubljenih dana, povreda na radu i profesionalnih i drugih bolesti značajno veći kod zaposlenih u zdravstvenim ustanovama sekundarnog i tercijarnog nivoa u odnosu na zaposlene u ustanovama na primarnom nivou i utvrđena je značajna korelacija između nivoa stresa i povreda na radu, dužine privremene radne nesposobnosti za rad i trajnog gubitka radne sposobnosti. Korelacija je visoko značajna i kod zdravstvenog osoblja u hirurškim granama medicinske delatnosti (Lazaridis, 2016).

Metod

Uzorak i procedura

Istraživanje je sprovedeno na uzorku od 220 zdravstvenih radnika koji su bili učesnici akreditovanog kursa „Dobra komunikacija sa pacijentima" koji je organizovan u saradnji Republičke stručne komisije za podršku pacijentima i Drugog projekta razvoja zdravstva Srbije, finansiranog od strane Ministarstva zdravlja. Kursevi su održani u Novom Sadu, Kragujevcu, Nišu i Beogradu. Osnovni cilj kursa je bio da se medicinsko osoblje upozna sa principima uspešne, kvalitetne i empatične komunikacije sa svim korisnicima zdravstvenih usluga i specifično sa onkološkim pacijentima. Na svim održanim kursevima ukupno je učestvovalo 255 zdravstvenih radnika i saradnika koji su zamoljeni da na kraju kursa, uz popunjavanje evaluacije i testova znanja, anonimno popune i list sa socio-demografskim karakteristikama i skalu profesionalnog stresa. Zbog nekompletnih podataka i vraćenih nepopunjenih skala iz analize je isključeno 35 upitnika, tako da je konačan uzorak činilo 220 ispitanika u kojem su u većem procentu zastupljene osobe ženskog pola 86,4%. Najveći broj zdravstvenih radnika je iz Niša (38.2%) a najmanji broj je iz Beograda (16.85%). U uzorku su najmanje zastupljeni mlađi zdravstveni radnici uzrasta od 20 do 30 godina (10,5%) a najviše medicinsko osoblje je u starosnoj kategoriji srednje

godine od 41 do 50 godina (36.4%). Najveći procenat zdravstvenih radnika je u kategoriji od 11 do 20 godina radnog staža (29.1%) i kategoriji od 21 do 30 godina staža (28.6%), a najmanje su zastupljeni najiskusniji radnici sa radnim stažom preko 31 godine (15.5%). U uzorku su najviše zastupljene medicinske sestre (58.6%) i lekari (34.1%), a najmanje zdravstveni saradnici – psiholozi koji rade u domovima zdravlja i u zdravstvenim ustanovama sekundarnog nivoa (7.3%) (Tabela 1). Najveći procenat ispitanog uzorka čini medicinsko osoblje koje radi na primarnom nivou zdravstvene zaštite (domovi zdravlja i manje ambulante pri većim domovima zdravlja) i to 40 lekara opšte prakse i 35 lekara specijalista.

Tabela 1

Osnovne sociodemografske karakteristike ispitanika

Sociodemografske karakteristike		*N*	%
Grad	Novi Sad	49	22.3
	Kragujevac	50	22.7
	Niš	84	38.2
	Beograd	37	16.8
Pol	Muški	30	13.6
	Ženski	190	86.4
Bračni status	Oženjen/udata	158	71.8
	Razveden/a – udovac/ica	26	11.8
	Neoženjen/neudata	36	16.4
Starost (u godinama)	20-30	23	10.5
	31-40	50	22.7
	41-50	80	36.4
	51-64	67	30.5
Radni staž (u godinama)	0-10	59	26.8
	11-20	64	29.1
	21-30	63	28.6
	31-43	34	15.5
Radno mesto	Lekar	75	34.1
	Medicinska sestra	124	58.6
	Zdravstveni saradnici	16	7.0

U proseku ispitanici su u srednjim godinama (*M* = 44.39; *SD* = 9.69). Najmlađi ispitanik ima 20 godina, a najstariji 64 godine. Prosečna dužina radnog staža iznosi oko 19 godina (*M* = 19.01; *SD* = 10.30). Najkraći radni staž je godinu dana, a najduži 43 godine.

Instrumenti

Skala profesionalnog stresa

Skala profesionalnog stresa koja je korišćena u ovom istraživanju predstavlja kombinaciju dve skale (Stres na poslu - Job Stress – JS: Steffy & Jones, 1988 prema Armstrong-Stassen, 1997 i Skale percipiranog stresa - Perceived Stress Scale – PSS: Cohen et al., 1983, srpska adaptacija: Matić, 2003). Skala profesionalnog stresa ima 25 ajtema kojima se ispituje stres na poslu, tačnije misli i osećanja u vezi sa poslom tokom poslednjih mesec dana i prvi put je primenjena u našoj sredini za potrebe istraživanja koje se odnosilo na procenu profesionalnog stresa i socijalne podrške (Matić, 2003). Kombinovana skala profesionalnog stresa primenjena je i na uzorku zdravstvenih radnika u našoj sredini za potrebe istraživanja profesionalnog stresa kod onkološkog medicinskog osoblja (Klikovac, 2008). Ajtemi skale su konstruisani tako da ispituju ispitanikovu percepciju psiholoških simptoma profesionalnog stresa i skorovani su tako da visoki skorovi označavaju viši nivo stresa. Totalni skor se izračunava sabiranjem svih ajtema s tim što se ajtemi 4,6,10 i 14 prethodno rekodiraju, jer su formulisani tako da viši skor na ovim pitanjima označava niži nivo profesionalnog stresa. Svaki ajtem je rangiran prema tome koliko je često osoba mislila ili se osećala na određeni način u vezi sa određenim situacijama i dešavanjima na poslu tokom poslednjeg meseca. Odgovori se daju preko petostepene skale Likertovog tipa od 1 *(nikad*) do 5 *(skoro uvek).* Ajtemi od 1 do 10 su ajtemi Skale percipiranog stresa koji su prilagođeni situacijama na poslu. Skala percipiranog stresa se više odnosi na emocionalne aspekte reagovanja na visoke zahteve na poslu, kao i na doživljaj kontrole događaja na radnom mestu, dok se Skala stresa na poslu više tiče stresora koji proizilaze iz visokih zahteva datog radnog mesta. Primeri nekoliko ajtema iz navedenih skala: *Skala percipiranog stresa - Koliko često ste se iznervirali u vezi nečega što se iznenada desilo na poslu? Koliko često ste se osećali zabrinuti zbog posla?Koliko često ste osećali da ne možete da kontrolišete značajne događaje vezane za Vaš posao? Koliko često ste se osećali bespomoćno u vezi nečega što Vam se desilo na poslu?* Skala stresa na poslu (ajtemi od 11 do 25): *Koliko često ste osećali da imate previše pritisaka na poslu? Koliko često ste pomislili da ne možete da se nosite sa svim stvarima koje Vam se dešavaju na poslu? Koliko često ste osećali krivicu zbog nečega što se desilo na poslu*?

Dosadašnja istraživanja su pokazala da Skala profesionalnog stresa ima dobre metrijske karakteristike. Koeficijent pouzdanosti je iznosio .91, KMO mera reprezentativnosti skale iznosi .85 a homogenost skale izražena kroz prosečnu korelaciju ajtema iznosi .73 što ukazuje da nema mnogo preklapanja u ajtemima (Matić, 2003). U aktuelnom istraživanju pouzdanost tipa interne konzistentnosti korišćene skale profesionalnog stresa je visoka i iznosi .92.

Obrada podataka

Prikupljeni podaci su obrađeni u okviru statističkog paketa SPSS. Korišćena je analiza varijanse (ANOVA) i s obzirom da nisu dobijene očekivane razlike (Tabela 3), primenjena je i multivarijantna analiza varijanse (MANOVA) u svrhu testiranja razlika u stepenu doživljenog stresa na poslu, odnosno u stepenu percipiranog stresa koji se vezuje za situacije na radnom mestu, u odnosu na pol, starost, dužinu radnog staža, bračno stanje i radno mesto (objedinjenu skalu profesionalnog stresa smo odvojili i zasebno analizirali). Veličina efekta je procenjivana preko kvadrirane parcijalne ete (ηp^2), uz sledeće smernice za tumačenje veličine efekta: mala = .01, srednja = .06, velika = .14 (Tabachnick & Fidell, 2007).

Rezultati

Vrednost aritmetičke sredine, standardne devijacije, skewnessa, kurtosisa, kao i pouzdanost skale profesionalnog stresa predstavljeni su u Tabeli 2. Rezultati ukazuju da ispitanici u proseku, imaju umeren nivo stresa. Normalnost distribucije je testirana Shapiro-Wilk testom. Distribucija rezultata na skali stresa se može smatrati približno normalnom, $W(220) = .99$, $p = .48$.

Tabela 2
Deskriptivne karakteristike Skale profesionalnog stresa

Min	Max	M	SD	Sk	Ku	α
32.00	99.00	64.40	12.43	0.82	-2.07	.92

Napomena. Min – minimalni skor; *Max* – maksimalni skor; *M* - aritmetička sredina; *SD* - standardna devijacija; *Sk* – mera zakošenosti*; Ku* – mera spljoštenosti; α – Cronbachov koeficijent pouzdanosti.

Tabela 3

Deskriptivne karakteristike prema izabranim kategorijama i rezultati analize varijanse

		N	M	SD	SE	95% LLCI	95% ULCI	Min.	Max.	F/t	n_p^2
Grad	Novi Sad	49	63.53	9.96	1.42	60.67	66.39	37	86		
	Kragujevac	50	63.90	13.60	1.92	60.03	67.77	33	95	0.21	.03
	Niš	84	64.80	12.68	1.38	62.05	67.55	32	93		
	Beograd	37	65.35	13.52	2.22	60.84	69.86	35	99		
Pol	Muški	30	60.97	13.25	2.42	56.02	65.92	32	88	-1.64	.01
	Ženski	190	64.95	12.25	0.89	63.19	66.70	35	99		
Bračni status	U braku	158	65.51	12.21	0.98	63.58	67.44	33	99		
	Razveden/a, udovac/ica	26	62.15	11.35	2.23	57.57	66.74	35	81	2.50	.02
	Samac	36	60.92	13.38	2.23	56.39	65.44	32	95		
Starost	od 20 do 30 g.	23	59.00	12.20	2.54	53.72	64.28	37	95		
	od 31 do 40 g.	50	64.40	12.89	1.82	60.74	68.06	32	99	1.99	.03
	od 41 do 50 g.	80	66.13	11.71	1.31	63.52	68.73	33	88		
	od 51 do 64 g.	67	64.21	12.72	1.55	61.11	67.31	37	93		
Radni staž	od 0 do 10 g.	59	62.71	13.13	1.71	59.29	66.14	32	99		
	od 11 do 20 g.	64	65.67	13.16	1.65	62.38	68.96	33	88	1.30	.02
	od 21 do 30 g.	63	63.25	11.08	1.40	0.46	66.04	37	87		
	od 31 do 43 g.	34	67.09	11.95	2.05	62.92	71.26	48	93		
Radno mesto	Lekar	75	65.67	13.73	1.59	62.51	68.83	33	99		
	Med. sestra	129	63.98	12.16	1.07	61.87	66.10	32	95	0.79	.01
	Zdr. saradnik	16	61.88	6.85	1.71	58.22	65.52	50	71		

Napomena. M - aritmetička sredina; *SD* - standardna devijacija; *SE* - standardna greška; *F* - vrednost F-testa; *t* – vrednost t-testa za nezavisne uzorke (polne razlike); ηp2 - veličina efekta.

S obzirom na to da analiza varijanse nije pokazala nijednu značajnu razliku u ukupnom skoru na Skali profesionalnog stresa po analiziranim parametrima, primenili smo multivarijatnu analizu varijanse u svrhu testiranja razlika u stepenu doživljenog stresa na poslu, odnosno u stepenu percipiranog stresa koji se vezuje za situacije na radnom mestu, u odnosu na pol, starost, dužinu radnog staža, bračno stanje i radno mesto.

Jedina statistički značajna razlika koja je dobijena multivarijantnom analizom je razlika prema polu, $F(2, 218) = 3.52$, $p = .03$, Wilks' Lambda = .97, η_p^2 = .03). Kada se rezultati za svaku zavisnu varijablu posmatraju odvojeno uz Bonferroni korekciju nivoa značajnosti, postoji statistički značajna razlika na Skali percipiranog stresa, $F(1, 218 = 5.55$, $p = .02$, $\eta_p^2 = .03)$. U proseku, žene ($M = 27.28$; $SD = 5.04$) imaju viši skor na Skali percipiranog stresa u odnosu na

muškarce (*M* = 24.93; *SD* = 5.28). Nisu dobijene očekivane statistički značajne razlike prema starosti ispitanika, $F_{(4\ 428)}$= 1.27, *p* = .27; Wilks' Lambda = .96, η_p^2 = .02, prema dužini radnog staža, $F_{(6,\ 428)}$ = 0.58, *p* = .75; Wilks' Lambda = .98, η_p^2 = .01, i prema bračnom stanju ispitanika, $F_{(4,\ 426)}$= 1.47, *p* = .21; Wilks' Lambda= 0.97, η_p^2=.01. Takođe, nije dobijena očekivana statistički značajna razlika po radnom mestu ispitanika, $F_{(4,\ 43)}$ = 0.63, *p* = 0.65, Wilks' Lambda = .99; η_p^2=.01.

Diskusija

Cilj istraživanja je bio da se utvrdi nivo profesionalnog stresa kod medicinskog osoblja koji su bili učesnici akreditovanog edukativnog Kursa „Dobra komunikacija sa pacijentima" koji je tokom 2018. i 2019. godine održan u Novom Sadu, Kragujevcu, Nišu i Beogradu. Od ukupno 255 učesnika edukacije 220 je adekvatno popunilo zadatu skalu profesionalnog stresa što čini i uzorak ovog istraživanja. Dobijeni nalaz da je nivo profesionalnog stresa za ceo ispitani uzorak zdravstvenih radnika umeren je očekivan s obzirom da je 70% ispitanog uzorka činilo medicinsko osoblje koje radi na primarnom nivou zdravstvene zaštite (domovi zdravlja i manje ambulante pri većim domovima zdravlja). Nalaz o umerenom nivou stresa je u skladu sa istraživanjima u kojima je dobijeno da značajno više nivoe profesionalnog stresa doživljava medicinsko osoblje koje radi u bolničkim sredinama (u našem zdravstvenom sistemu to su zdravstvene ustanove na sekundarnom i tercijarnom nivou) u poređenju sa vanbolničkim zdravstvenim ustanovama tačnije domovima zdravlja (Capan, 2017; Lazaridis, 2016).

Očekivane pretpostavke da će se pokazati razlike u ukupnom nivou profesionalnog stresa prema bračnom stanju, godinama starosti, dužini radnog staža i radnom mestu nisu dobijene. Jedina razlika ustanovljena je na subskali percipiranog stresa i to u odnosu na pol. Preciznije, žene zdravstveni radnici imaju viši nivo stresa u poređenju sa muškarcima i to na skali percipiranog stresa. Ajtemi skale percipiranog stresa pretežno se odnose na emotivne aspekte doživljavanja posla (zabrinutost, napetost, nervoza, bespomoćnost) i na samoprocenu (ne)mogućnosti kontrole i rešavanja problema vezanih za posao. U istraživanju Popova i Popova (2011) je utvrđeno da žene stres ispoljavaju prvenstveno kroz brigu, napetost, nervozu, na šta ukazuje i nalaz ovog istraživanja. Dobijeni nalaz je u skladu i sa istraživanjima stranih autora u kojima je dobijeno da je pol značajan prediktor profesionalog stresa i da žene zdravstveni radnici doživljavaju i ispoljavaju više nivoe stresa na radnom mestu od kolega muškog pola (Adeb-Saeedi, 2002; Capan, 2017; Healy & Tyrella, 2011; Olatunji & Mokuolu, 2014). Dakle, žene medicinski radnici su emocionalno responsivnije na visoke zahteve medicinskog poziva, što se odražava na sklonost da u značajno višem stepenu određene aspekte posla percipiraju kao visoko stresogene.

U ovom istraživanju nisu dobijene značajne razlike u ukupnom nivou profesionalnog stresa u odnosu na bračno stanje, za razliku od istraživanja stranih autora koja pokazuju da medicinsko osoblje koje je u braku ima viši nivo profesionalnog stresa u odnosu na razvedene ili udovce i u odnosu na samce (Al-Makhaita & Hafez, 2014; Hongxia et al., 2019; Ozor et al., 2016). Nalazi stranih autora u kojima su se pokazale razlike prema bračnom stanju ostavljaju prostor za razmišljanje i pretpostavke da su zdravstveni radnici koji imaju porodične obaveze podložniji doživljavanju viših nivoa stresa na poslu ili je frustraciona tolerancija zbog mnogo porodičnih obaveza manja na radnom mestu. U razmatranju zašto u ovom istraživanju razlike prema bračnom stanju nisu dobijene može se uzeti u obzir pretpostavka da kulturološki faktori imaju uticaja na shvatanje braka koji se u našoj kulturi još uvek posmatra na tradicionalniji način u poređenju sa zapadnim kulturama zbog čega je i nivo frustracione tolerancije koji se tiče porodičnih obaveza znatno viši. Drugim rečima, pošto tradicionalno shvatanje braka doprinosi njegovom višem vrednovanju, moguće je da porodične obaveze u našoj kulturi u mnogo manjoj meri generišu izvore dodatnog stresa.

Nije dobijena očekivana razlika u ukupnom nivou profesionalnog stresa prema godinama starosti za razliku od sličnih istraživanja u kojima je pokazano da ili najstariji ili najmlađi zdravstveni radnici na početku karijere imaju najviše nivoe stresa na poslu (Al-Makhaita et al., 2014; Healy & Tyrella, 2011; Milutinović i sar., 2009). Polazeći od dobijenog nalaza u ovom istraživanju da je nivo profesionalnog stresa za ceo ispitan uzorak umeren jasno je da se nisu pokazale razlike prema godinama starosti.

Za razliku od drugih istraživanja u kojima se pokazalo da je dužina radnog staža značajan prediktor nivoa profesionalnog stresa (Capan, 2017; Cavalheiro et al., 2008; Healy & Tyrella, 2011; Nguyen et al., 2014; Qi et al., 2014) u ovom istraživanju se nisu pokazale razlike prema dužini radnog staža u odnosu na ukupni profesionalni stres. Mnogo objektivnih faktora koji se tiču zahteva radnog mesta kao i subjektivnih faktora koji su u vezi sa individualnim razlikama u osobinama ličnosti, mehanizmima prevladavanja stresa, lokusom kontrole i sl., utiču na to da li će manji ili veći broj godina rada u zdravstvu uticati na niže ili više nivoe profesionalnog stresa. Jednim istraživanjem je teško obuhvatiti sve relevantne faktore i heterogenost dobijenih rezultata u drugim istraživanjima može se tumačiti različitim dizajnima i fokusima sprovedenih istraživanja.

U ovom istraživanju nisu dobijene razlike u ukupnom nivou profesionalnog stresa između lekara i medicinskih sestara u poređenju sa istraživanjima domaćih i stranih autora u kojima su dobijeni različiti nalazi. U nekim istraživanjima je dobijeno da više nivoe stresa na poslu imaju lekari (Galjak, 2018; Lazaridis, 2016), dok je u drugim dobijeno da medicinske sestre koje rade na napornijim i zahtevnijim poslovima u zdravstvu imaju više nivoe stresa (Qi i sar., 2014; Jenkis, & Elliott, 2004; Smuđa i Jovanović, 2014). Od ukupnog broja ispitanika u ovom istraživanju, 70% ispitanih medicinskih radnika činilo je medicinsko osoblje koje radi na primarnom nivou zdravstvene zaštite čime

se može delimično objasniti izostanak očekivanih razlika. Istraživanja Lazaridisa (2016) je pokazalo da zdravstveno osoblje koje radi na sekundarnom i tercijarnom nivou našeg zdravstvenog sistema doživljava više nivoe stresa na poslu u poređenju sa osobljem koje radi na primarnom nivou zdravstvene zaštite.

Metodološka ograničenja i predlozi za buduća istraživanja

Istraživanje je urađeno na prigodnom uzorku dostupnih zdravstvenih radnika i sprovedeno je u okviru kontinuirane medicinske edukacije, što je uticalo na to da se istraživanje planira tako da bude kratko i ne oduzme puno vremena učesnicima, što je svakako bilo ograničavajuće u pogledu izbora instrumenata koji su primenjeni. Uz kratak upitnik o socio-demografskim karakteristikama data je i modifikovana skala stresa koja je u prethodnim istraživanjima pokazala visoku pouzdanost, zadovoljavajuću homogenost i reprezentativnost. Jedna od pretpostavki je da su ispitanici, iako je istraživanje bilo anonimno davali socijalno poželjnije odgovore i umanjivali sopstveni doživljaj stresa na poslu. Preporuka za buduća istraživanja i temeljnije sagledavanje profesionalnog stresa kod zdravstvenih radnika je da se primene specifičnije skale profesionalnog stresa sa detaljnijim opisima različitih faktora stresa prema specifičnostima radnog mesta. Istraživanja osobina, strukture i organizacije ličnosti (kognitivne, afektivne, bihejvioralne, konativne dimenzije), crta ličnosti (anksioznost, depresivnost, negativni afektivitet, lokus kontrole, samopouzdanje), ali i drugih važnih psiholoških determinanti stresnog reagovanja (prethodno životno iskustvo, status mentalnog zdravlja, životni stil osobe, dominantni mehanizmi odbrane, strategije prevladavanja, optimizam, kvalitet života, procena subjektivnog blagostanja) sigurno bi dovela do boljeg razumevanja toga šta najviše utiče na doživljavanje i manifestiranje profesionalnog stresa kod medicinskog osoblja u našoj sredini. Preporuka za buduća istraživanja je da se uzorak proširi i obuhvati zdravstveno osoblje i iz sekundarnih i tercijarnih ustanova, što bi uz komparaciju sa dobijenim rezultatima u ovom istraživanju pružilo preciznije informacije o nivou izraženosti profesionalnog stresa i razlikama u samoproceni kod zdravstvenih radnika u našoj sredini. Praktični aspekti istraživanja uzroka i doživljavanja profesionalnog stresa kod medicinskog osoblja uvek mogu da budu usmereni na organizovanje tematskih edukacija i seminara vezanih za različite načine (organizacione i lične) za funkcionalnije prevladavanje profesionalnog stresa i preveniranje različitih posledica koje može da ima po somatsko i mentalno zdravlje.

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OCCUPATIONAL STRESS IN HEALTH PROFESSIONALS

This research was conducted to determine the level of occupational stress on a sample of 220 health workers who attended accredited courses "Good communication with patients" which were held in 2018 and 2019 in Novi Sad, Kragujevac, Nis, and Belgrade. Over 70% of the surveyed health workers were from the primary level of health care (primary health centers and smaller out-patient clinics within larger health centers). Upon completion of the course, in addition to completing evaluations and knowledge tests, participants were asked to fill in the scale of professional stress anonymously with main in order to assess the level of occupational stress on the examined sample of health workers. The results showed that the level of occupational stress for the entire sample (M = 64.40; SD = 12.43) was moderate. The only significant difference obtained concerned the gender, more accurately, indicators showed that female health professionals had a higher level of stress compared to male ones. The expected assumptions relating to the existence of a difference in the level of occupational stress according to marital status, age, length of service, and position were not obtained. Perception of stress levels in a sample of health professionals is important for organizing thematic education, courses and preventive work in order to identify and prevent the harmful effects of occupational stress on the mental and physical health of medical staff.

Key words: health professionals, primary health care, professional stress

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KOGNITIVNA REGULACIJA EMOCIJA I SUBJEKTIVNO BLAGOSTANJE KOD ADOLESCENATA: POSTOJI LI DIREKTNA VEZA?

Cilj ovog istraživanja bio je utvrditi koje su strategije kognitivne emocionalne regulacije najzastupljenije na uzroku adolescenata, na koji su način one povezane sa indikatorima mentalnog zdravlja adolescenata, te da li se veza između strategija kognitivne regulacije emocija i globalnog subjektivnog blagostanja ostvaruje direktno, ili preko pozitivnog i negativnog afektiviteta. Istraživanje je obavljeno na uzorku 206 učenika prosečnog uzrasta 16 godina. Rezultati su pokazali da su kod adolescenata najzastupljenije strategije pozitivna reformulacija i stavljanje u perspektivu, koje su, zajedno sa planiranjem i pozitivnim refokusiranjem, povezane sa pozitivnim merama mentalnog zdravlja (globalnim subjektivnim blagostanjem adolescenata i pozitivnim afektivitetom). Ruminacija, katastrofiziranje, samookrivljavanje, i u manjoj meri prihvatanje, su povezane sa negativnim afektivitetom. Analizom medijacije izdvojile su se dve strategije kognitivne emocionalne regulacije koje značajno predviđaju subjektivno blagostanje: pozitivna preformulacija i samo-okrivljavanje. Utvrđeno je da se veza između pozitivne preformulacije i subjektivnog blagostanja ostvaruje delimično direktno, a delimično je posredovana pozitivnim afektivitetom kao medijatorom. Rezultati istraživanja takođe su pokazali da se veza između samookrivljavanja i globalnog subjektivnog blagostanja ostvaruje isključivo indirektno - preko negativnog afektiviteta kao medijatora. U svetlu dobijenih rezultata, formulisane su neke praktične implikacije za preventivni i interventni rad sa adolescentima u cilju povećanja subjektivnog blagostanja.

Ključne reči: adolescencija, kognitivna emocionalna regulacija, negativni afekat, pozitivni afekat, subjektivno blagostanje

Uvod

Specifičnost razvojnog perioda adolescencije predstavljaju intenzivne i duboke transformacije u svim aspektima razvoja čija dinamika ima potencijal da destabilizuje psihološku ravnotežu, i u tom smislu predstavljaju rizik po mentalno zdravlje adolescenata. Razvojni izazovi novijeg doba se dodatno usložnjavaju, te rezultati istraživanja izveštavaju o povećanoj stopi psihičkih poremećaja (Compas et al., 2017; Deighton, 2019) i opadanju nivoa blagostanja u ovom periodu (Twenge et al.,2018). Istraživanja sa fokusom na pozitivne aspekte funkcionisanja adolescenata najčešće se bave konceptom subjektivnog blagostanja koje se opisuje kroz tri komponente: 1) zadovoljstvo životom, kao globalna evaluacija ili kao procena zadovoljstva pojedinim aspektima života; 2) pozitivni afekat, koj podrazumeva učestalost doživljavanja prijatnih emocija ili prijatan afekat; 3) nizak nivo negativnog afekta, niska učestalost doživljavanja neprijatnih emocija ili neprijatan afekat (Diener et al., 1999; Diener et al., 2017). Ovaj multidimenzionalni model subjektivnog blagostanja pokazao se kao validan i na uzorku adolescenata (Martin & Huebner, 2007), tako da slika „srećnog adolescenta" uključuje onoga ko je zadovoljan životom i doživljava više pozitivnih nego negativnih afekata. Kao jedan od važnih prediktora subjektivnog blagostanja izdvajaju se procesi emocionalne regulacije, jer se ove sposobnosti upravo u u adolescenciji poboljšavaju – adolescenti postaju sve samostalniji u ovom procesu, i koriste sve kompleksnije strategije emocionalne regulacije (Garnefski & Kraaij, 2006). Istraživanja pokazuju da su adolescenti s boljim veštinama regulacije emocija socijalno kompetentniji, te da imaju kvalitetnije odnose s vršnjacima (Chervonsky&Hunt, 2019; Petrović, 2015); veći stepen subjektivnog blagostanja (Verzeletti et al., 2016), kao i da ove veštine predviđaju uspešnu psihosocijalnu adaptaciju kasnije tokom razvoja (Fernandez-Berrocal et al., 2006; Gross & Thompson, 2007). S druge strane, maladaptivne strategije emocionalne regulacije povezane su sa povećanim rizikom za razvoj problema mentalnog zdravlja, najpre eksternalizovanih i internalizovanih poremećaja (Compas et al., 2017). Strategije emocionalne regulacije su brojne, a jedan od najuticajnijih modela u ovoj oblasti posebno izdvaja i proširuje spektar *kognitivnih strategija emocionalne regulacije,* koje predstavljaju karakterističan način mišljenja sa ciljem kontrole i modifikacije emocionalnih iskustava (Garnefski et al., 2002; Garnefski & Kraaij, 2006, 2018). Ovi istraživači govore o devet različitih strategija kognitivne emocionalne regulacije: *Samo-okrivljavanje* (opterećenost sopstvenom krivicom u misaonom sadržaju), *Ruminacija* (usmerenost na sopstvena osećanja i misli o negativnom događaju i stalno vraćanje na te sadržaje), *Okrivljavanje drugih* (prebacivanje krivice na druge ljude za negativni događaj), *Katastrofiziranje* (prenaglašavanje negativnih strana i posledica uznemirujućeg događaja), *Stavljanje u perspektivu* (umanjivanje ozbiljnosti negativnog događaja upoređivanjem sa drugim negativnim događajima), *Pozitivno refokusiranje* (razmišljanje o nečemu prijatnom i umirujućem umesto o stresnom događaju), *Pozitivna preformulacija*

(sagledavanje pozitivnih strana događaja koje mogu biti unapređuće za lični razvoj), *Prihvatanje* (misli koje nas navode da prihvatimo okolnosti i postojanje negativnih emocija i stanja kroz koje prolazimo) i *Planiranje* (razmišljanje o tome šta preduzeti da bi se prevladao stresni događaj). Kognitivne strategije samookrivljavanje, ruminacija, i katastrofiziranje dovedene su u vezu sa negativnim emocijama, kao što su anksioznost, depresivnost i bes, a uz okrivljavanje drugih i prihvatanje situacije vode intenziviranju i održavanju negativnih emocija, pojačavajući time vulnerabilnost za emocionalne poremećaje (Garnefski & Kraaij, 2018; Schafer et al, 2017). S druge strane, strategije koje se odnose na planiranje rešenja problematične situacije, pozitivnu preformulaciju događaja, stavljanje situacije u širi kontekst, predstavljaju konstruktivne kognitivne strategije koje vode redukciji negativnih emocija (Garnefski & Kraaij, 2006; Verzeletti et al., 2016; Wante et al., 2018). Navedene konstruktivne kognitivne strategije povezane su i sa višim nivoom pozitivnog afekta, manjim brojem depresivnih simptoma, visokim samopoštovanjem i zadovoljstvom svojim životom, i kao takve, predstavljaju protektivni faktor za nastanak trajnih poremećaja emocionalnog života (Gross & John, 2003). Slično tome, učestalo korišćenje kognitivne preformulacije doprinosi boljem funkcionisanju u emocionalnom i interpersonalnom domenu i ostalim pozitivnim razvojnim indikatorima (Durlak et al., 2011; Riediger & Klipker, 2014). Iz pregleda ovih istraživanja jasno je da unapređenje kognitivnih strategija emocionalne regulacije mogu biti vredan izvor prevencije i intervencija u adolescenciji, pre svega imajući u vidu da sve veća kognitivna zrelost adolescenata omogućava veći broj alternativa za emocionalnu regulaciju (Compas et al., 2017), a pre svega povećanu sposobnost za korišćenje kognitivnih strategija prevladavanja (Saarni, 1999). S druge strane, istraživači su jednoglasni u tvrdnji da je adolescencija kritična prekretnica u kojoj se još uvek mogu sprečiti neki psihopatološki fenomeni dobro osmišljenim intervencijama koje bi se temeljile na empirijskim podacima (Hofstra et al., 2002). Zato se čini izuzetno praktičnim pitanje zastupljenosti strategija emocionalne regulacije na uzorku adolescenata, kao i njihovom povezanošću sa subjektivnim blagostanjem, jer bi nam dalo potvrdu da intervencije sa ciljem ovladavanja strategijama emocionalne regulacije mogu biti važan protektivni faktor za nastanak psihopatoloških fenomena u odraslom dobu. Ako to i jeste slučaj, ostaje nam pitanje kako se kognitivni procesi koji su povezani sa subjektivnim blagostanjem mogu naučiti ili poboljšati? U odgovoru na ovo pitanje, nužno je razmotriti nekoliko metodoloških tačaka (Nyklíček et al., 2002): prvo, da li je veza između emocionalne regulacije i subjektivnog blagostanja direktna ili indirektna; i drugo, ako je indirektna, koji faktori posreduju u ovoj relaciji. Imajući to u vidu, ovo istraživanje se bavi ispitivanjem medijatorske uloge opšteg afektiviteta u vezi između kognitivne emocionalne regulacije i subjektivnog blagostanja adolecenata. Pod opštim afektom se podrazumevaju dimenzije emocionalnosti višeg reda (dimenzije pozitivnog i negativnog afekta) u okviru kojih se nalaze specifične pozitivne i negativne emocije (Watson & Clark, 1994). S obzirom na to da longitudinalne

studije potvrđuju stabilnost pozitivnog i negativnog afektiviteta kroz vreme, kao i dimenzija ličnosti povezanih sa njima (Diener & Diener, 1996; Watson & Clark, 1994), mogli bismo pretpostaviti da opšti afekat može biti jedan od faktora od koga zavisi doprinos strategija kognitivne emocionalne regulacije globalnom subjektivnom blagostanju adolesenata. Na taj način, rezultati istraživanja bi mogli doprineti doprineti većoj efikasnosti planiranih intervencija koje imaju za cilj povećanje subjektivnog blagostanja i mentalnog zdavlja kod adolescenata. Stoga, ovo istraživanje ima za cilj da odgovori na sledeća fundamentalna pitanja:

1. koje su strategije kognitivne emocionalne regulacije najzastupljenije na uzroku adolescenata?

2. na koji način su ove strategije povezane sa indikatorima mentalnog zdravlja adolescenata (pozitivni i negativni afekat, subjektivno blagostanje)

3. da li se veza između strategija kognitivne regulacije emocija i globalnog subjektivnog blagostanja ostvaruje direktno, ili preko pozitivnog i negativnog afektiviteta, tj. da li se relacija između strategija kognitivne regulacije emocija sa jedne strane, i subjektivnog blagostanja s druge strane, ostvaruje preko pozitivnog i negativnog afektiviteta kao medijatorske varijable?

Metod

Uzorak

Istraživanje je obavljeno na uzorku 206 učenika koji pohađaju nastavu na mađarskom (maternjem) jeziku u nekoliko gimnazija u većim mestima u Vojvodini (52,9% uzorka je ženskog pola). Ispitivanje je bilo anonimno, a ispitanici koji nisu u potpunosti odgovorili na sve upitnike su usključeni iz analize. Prosečna starost ispitanika iznosi 16.67 godina (*SD* = 1.21).

Instrumenti

Cognitive Emotion Regulation Questionnaire (CERQ)

CERQ (Garnefski et al., 2002; adaptacija skale na mađarski jezik: Miklósi et al., 2011) je upitnik namenjen proceni specifičnih kognitivnih strategija emocionalne regulacije koje koriste adolescenti prilikom suočavanja sa negativnim životnim događajima. Sastoji se od 36 ajtema na koje ispitanici odgovaraju na petostepenoj Likertovoj skali. CERQ ima 9 subskala: Samo-okrivljavanje, Ruminacija, Okrivljavanje drugih, Katastrofiziranje, Stavljanje u perspektivu, Pozitivno refokusiranje, Pozitivna preformulacija, Prihvatanje i Planiranje. U originalnoj studiji, alpha koeficijenti kretali su se od .68 do .83 (Garnefski et.

al, 2002), a u mađarskoj verziji od .68 do .88, dok je alpha koeficient za instrument u celini .80. (Miklósi et al., 2011). U našem istraživanju, alpha koeficijenti se krecu od od .67 (Prihvatanje) do .84 (Pozitivna reformulacija), dok je alfa koeficijent za instrument u celini .83.

Positive and Negative Affect Schedule

PANAS (Watson et al., 1988; adaptacija na mađarski jezik: Gyóllai et al., 2011) se satoji od dve opšte skale od po deset stavki koje se odnose posebno na pozitivni (PA) i negativni afekat (NA). Učenici su imali zadatak da na petostepenoj Likertovoj skali procene kako se generalno, tj. najčešće osećaju. Metrijske karakteristike skala su dobre, kako u originalnom istraživanju (alfa koeficijenti se kreću između .83 i .90 u najrazličitijim uzorcima ispitanika - Watson & Clark, 1994), tako i u mađarskoj verziji (alpha koeficijenti za obe skale su iznad .80 - Gyóllai et al., 2011). U ovom istraživanju pouzdanost subskale PA je .76, a za subskalu NA vrednost alfe je .81.

Kratka skala subjektivnog blagostanja

KSB (Jovanović i Novović, 2008) je instrument koji se koristi za globalnu procenu subjektivnog blagostanja, a sastoji se od 8 stavki pomoću kojih su operacionalizovana dva pozitivna aspekta subjektivnog blagostanja – afektivni i kognitivni, a u čijoj se osnovi nalazi opšti faktor subjektivnog blagostanja. Afektivna komponenta se procenjuje pomoću subskale *Pozitivan afektivitet*, koja sadrži 4 stavke vezane za doživljavanje prijatnih emocija ("*Osećam da imam puno energije*"). Kognitivni aspekt se procenjuje subskalom *Pozitivan stav prema životu* koja je operacionalizovana preko 4 stavke koje se odnose na pozitivno vrednovanje i optimističan stav prema životu ("*Život je pun dobrih prilika i mogućnosti*"). Pouzdanost kognitivne i afektivne supskale u dosadašnjim istraživanjima se kretala od α = .80 do α = .84, a pouzdanost skale u celini od α =.87 do α = .89 (Jovanović i Novović, 2008). Ovaj upitnik je prvi put preveden na mađarski jezik za potrebe ovog istraživanja. Korišćen je "povratni" postupak prevoda, uz evaluaciju dva kompetentna prevodioca i psihologa, te prevedeni upitnik zadovoljava kriterijume ekvivalencije sa originalnim upitnikom. Pouzdanost kognitivne i afektivne supskale se kreće od α = .77 do α = .83, a pouzdanost skale u celini je α =.87. U ovom radu koristimo ukupan skor na KSB, odnosno globalnu procenu subjektivnog blagostanja.

Rezultati

Zastupljenost strategija kognitivne emocionalne regulacije

Zastupljenost strategija kognitivne emocionalne regulacije, subjektivnog blagostanja i pozitivnog i negativnog afektiviteta na celom ispitivanom uzorku prikazana je u Tabeli 1, gde su predstavljene aritmetičke sredine, standardne devijacije, kao i alpha koeficijenti pouzdanosti.

Tabela 1
Deskriptivna statistika korišćenih mera

	M	*SD*	α
Subjektivno blagostanje (SB)	21.72	5.80	.87
Pozitivni afektivitet (PA)	36.02	5.37	.76
Negativni afektivitet (NA)	21.06	6.28	.81
Planiranje	14.75	3.05	.77
Pozitivna preformulacija	14.20	3.49	.75
Ruminacija	13.50	3.41	.73
Prihvatanje	13.48	2.94	.67
Stavljanje u perspektivu	12.97	3.63	.75
Pozitivno refokusiranje	12.63	3.87	.84
Samo-okrivljavanje	11.87	3.26	.74
Katastrofiziranje	9.88	3.59	.68
Okrivljavanje drugih	9.09	2.87	.67

Napomena. M – aritmetička sredina; *SD* – standardna devijacija; α – koeficijent pouzdanosti.

Srednje vrednosti na subskalama CERQ-a pokazuju da su kod adolescenata najzastupljenije strategije planiranje i pozitivna preformulacija, dok su katastrofiziranje i okrivljavanje drugih strategije koje su slabo zastupljene kod ove populacije.

Interkorelacije ispitivanih varijabli

Povezanost između ispitivanih varijabli (indikatora mentalnog zdravlja – SB, PA, NA i strategija kognitivne emocionalne regulacije) prikazana je u Tabeli 2.

Tabela 2
Interkorelacije ispitivanih varijabli

	KSB	PA	NA
SB	-	.55**	-.36**
PA	.55**	-	-.12
NA	-.36**	-.12	-
Samo-okrivljavanje	-.15*	-.04	.52**
Ruminacija	.03	.04	.36**
Katastrofiziranje	-.11	.01	.44**
Okrivljavanje drugih	-.01	.11	.09
Prihvatanje	.06	.01	.15*
Pozitivna preformulacija	.54**	.46**	-.17*
Planiranje	.33**	.28**	-.09
Stavljanje u perspektivu	.45**	.29**	-.16*
Pozitivno refokusiranje	.32**	.21**	-.28*

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

Iz Tabele 2 se vidi da su se kao značajne pokazale korelacije između adaptivnih kognitivnih strategija regulacije emocija (pozitivna preformulacija; stavljanje u perspektivu; planiranje i pozitivno refokusiranje) i pozitivnih indikatora mentalnog zdravlja (subjektivno blagostanje i pozitivni afekat), s tim da su korelacije sa subjektivnim blagostanjem većeg intenziteta. Pored toga, ove iste strategije kognitivne regulacije emocija pokazuju negativnu i nisku korelaciju sa negativnim afektivitetom. Negativni afektivitet značajno je povezan sa nekonstruktivnim strategijama kognitivne regulacije emocija: samo-okrivljavanjem; katastrofiziranjem i ruminacijom. Takođe, rezultati govore o tome da između prihvatanja i negativnog afektiviteta postoji slaba, ali značajna pozitivna korelacija, $r = .15$, $p < .05$.

Utvrđivanje ispunjenosti preduslova za sprovođenje analize medijacije

Da bi se određene varijable uključile u analizu medijacije, navode se tri preduslova (Baron & Kenny, 1986):

1. Svaki prediktor treba značajno da predviđa kriterijsku varijablu. U našem istraživanju sledeće prediktorske varijable značajno predviđaju subjektivno blagostanje (SB): *Pozitivna preformulacija* (β = .34, *p* < .01), *Samo-okrivljavanje* (β = -.18, *p* < .05) i *Stavljanje u perspektivu* (β = .17, *p* < .05). Ukupan R^2 iznosi .34 (*p* < .01). Ostale varijable koje ne predviđaju značajno kriterijsku varijablu su isključene iz dalje analize.

2. Medijator varijabla treba značajno da predviđa kriterijsku varijablu nakon što se prediktor varijable drže pod kontrolom. Koristeći hijerarhijsku višestruku regresiju, uklonjen je uticaj strategija kognitivne regulacije emocija (Samookrivljavanje, Pozitivna preformulacija i Stavljanje u perspektivu). U konačnom modelu i pozitivni (β = .37, *p* < .01) i negativni afekat (β = -.26, *p* < .01) su se pokazali kao statistički značajni prediktori subjektivnog blagostanja.

3. Prediktor varijable treba značajno da predviđaju medijatorske varijable. Za proveru da li prediktor varijable (*Samo-okrivljavanje*, *Pozitivna preformulacija* i *Stavljanje u perspektivu*) značajno predviđaju medijator varijable (PA i NA) korišćena je multipla regresiona analiza. Strategija samo-okrivljavanje značajno predviđa medijator varijablu NA (β = .51, *p* < .01), ali ne predviđa PA, stoga se PA isključuje iz dalje analize kada je prediktor strategija samo-okrivljavanje. Strategija pozitivna preformulacija ne predviđa NA, ali je značajan prediktor druge medijatorske varijable, PA (β = .47, *p* < .01). Negativni afektivitet, kao medijator varijabla se isključuje iz dalje analize kada je prediktor strategija pozitivna preformulacija. Strategija stavljanje u perspektivu ne predviđa ni jednu medijatorsku varijablu, stoga je isključena iz dalje analize.

Analiza medijacije

Na osnovu prethodnih rezultata ustanovljena je opravdanost za ispitivanje medijacije u cilju odgovora na pitanje da li se veza između strategija kognitivne regulacije emocije i subjektivnog blagostanja ostvaruje direktno ili preko pozitivnog i negativnog afektiviteta. Provereno je postojanje efekata medijacije, odnosno indirektnih efekata, pomoću postupka za testiranje multiplih medijacija (Preacher & Hayes, 2008). Rezultati su prikazani u Tabeli 3.

Tabela 3

Totalni, direktni i indirektni efekti pozitivnog i negativnag afektiviteta na subjektivno blagostanje kada su prediktori Samo-okrivljavanje i Pozitivna preformulacija

Prediktori	Medijatori i efekti	a	b	c	c'	ab
Samo-okrivljavanje	Negativan afektivitet	1.00^{**}	$-.34^{**}$	$-.29^{*}$	$.05$	$-.34^{**}$
Poz. preformulacija	Pozitivan afektivitet	$.70^{**}$	$.40^{**}$	$.90^{**}$	$.62^{**}$	$.28^{**}$

Napomena. a – efekat prediktora na medijator; *b* – efekat medijatora na kriterijum; *ab* – indirektan efekat medijatora u relaciji između prediktora i kriterijuma; *c′* – direktan efekat prediktora na kriterijum kada je efekat medijatora kontrolisan; *c* – totalni efekat.
*p < .01. *p < .05.

Rezultati pokazuju da se veza između pozitivne preformulacije i subjektivnog blagostanja ostvaruje delimično direktno, a delimično je posredovana pozitivnim afektivitetom kao medijatorom. U slučaju strategije samo-okrivljavanje, veza sa subjektivnim blagostanjem se ostvaruje isključivo indirektno preko negativnog afektiviteta kao medijatora. Direktan efekat samookrivljavanja na subjektivno blagostanje, kada je medijator pod kontrolom, nije bio statistički značajan, pa zaključujemo da je medijacija u ovom slučaju potpuna.

Diskusija

Osnovni cilj ovog istraživanja bio je da odgovori na nekoliko ključnih pitanja. Zanimalo nas je koje su strategije kognitivne emocionalne regulacije najzastupljenije na uzorku adolescenata; na koji način su ove strategije povezane sa indikatorima mentalnog zdravlja adolescenata, te da li se veza između strategija kognitivne regulacije emocija i globalnog subjektivnog blagostanja ostvaruje direktno ili preko opšteg afektiviteta kao medijatorske varijable?

Rezultati o zastupljenosti strategija kognitivne emocionalne regulacije su pokazali da su kod adolescenata najzastupljenije strategije planiranje i pozitivna preformulacija; slede ih ruminacija, prihvatanje, stavljanje u perspektivu i pozitivno refokusiranje; dok su samo-okrivljavanje, katastrofiziranje i okrivljavanje drugih strategije koje adolescenti najređe koriste. Ovi nalazi su u skladu sa rezultatima većeg drugih studija na uzorcima adolescenata (Garnefski et al., 2017). Naime, ispitanici iz ovog uzorka nalaze se u periodu ulaska u srednju adolescenciju, kada opada zavisnost od neposredne emocionalne podrške roditelja, a jačaju sopstvene strategije emocionalne regulacije. Istraživanja pokazuju da se radi o periodu u kome se adaptivne strategije intenzivno razvijaju (Zimmermann & Iwanski, 2014), te možemo reći da su rezultati razvojno očekivani. Uz to, rezultati pokazuju negativnu i veoma slabu korelaciju (r= -.12) između PA i NA, što potvrđuje tezu o relativnoj nezavisnosti ovih dimen-

zija (Tellegen et al., 1999; Terracciano et al., 2003). Skor na skali KSB visoko pozitivno korelira sa skorom PA (.55), a negativno sa skorom NA (-.36), što je potvrđeno u prethodnim istraživanjima (Jovanović, 2010).

Drugo istraživačko pitanje odnosilo se na povezanost kognitivnih strategija emocionalne regulacije i indikatora mentalnog zdravlja (globalna procena subjektivnog blagostanja, pozitivni afektivitet i negativni afektivitet). Rezultati ukazuju na to da su kognitivne strategije koje u su najvišoj pozitivnoj korelaciji sa globalnom procenom subjektivnog zadovoljstva (SB), ali i sa pozitivnim afektom (PA): pozitivna preformulacija, stavljanje u perspektivu, planiranje i pozitivno refokusiranje. Sve korelacije su umereno visoke, a među njima pozitivna preformulacija pokazuje najjaču povezanost sa oba pozitivna indikatora mentalnog zdravlja. Dakle, adolescenti koji su skloni korišćenju pomenutih strategija pokazuju viši nivo subjektivnog blagostanja i pozitivnog afekta, uz istovremeno nizak stepen negativnog afekta. Dobijene korelacije su u skladu sa nalazima ranijih istraživanja koja su utvrdila jasnu povezanost ovih adaptivnih strategija sa visokim subjektivnim blagostanjem, ređim doživljajem negativnog afekta, češćim pozitivnim afektom, kao i sa većim zadovoljstvom životom i psihološkim blagostanjem (Garnefski et al., 2017; Gross & John 2003; Haga et al. 2009; Karademas, 2007; McRae et al. 2012; Shiota, 2006).

Iste ove, adaptivne strategije, koje su pokazale pozitivnu korelaciju sa pozitivnim afektom i subjektivnim blagostanjem istovremeno su u niskoj negativnoj korelaciji sa negativnim afektom. Strategije koje su u najvišoj pozitivnoj korelaciji sa negativnim afektivitetom (NA) su samo-okrivljavanje, ruminacija i katastrofiziranje, što je u skladu sa prethodnim istraživanjima koja ove strategije dovode u vezu sa negativnim emocijama poput anksioznosti i besa, te simptomima depresivnosti (Garnefski & Kraaij, 2018). To znači da su osobe u susretu sa negativnim životnim događajima sklone stalnom intenzivnom razmišljanju o negativnim osećanjima i o samom neprijatnom događaju; prenaglašavaju i preuveličavaju negativnost doživljenog stresnog događaja i sklone su da za preživljena negativna iskustva i životne događaje okrivljulju sebe. S obzirom na to da se uzorkovani ispitanici nalaze u periodu srednje adolescencije, da pripadaju zdravoj, nekliničkoj populaciji; te da im razvojni i životni izazovi tek slede, možemo reći da su opisani rezultati očekivani, ali i ohrabrujući. Sa porastom životnih događaja, ali i dodatne nezavisnosti od roditelja, testiraće se psihološka ravnoteža adolescenata (Copeland et al. 2009), a novija istraživanja pokazuju da se stopa psihičkih poremećaja u toku adolescencije povećava (Compas et al., 2017; Deighton, 2019). Shodno tome, mogli bismo očekivati da sa povećanim zahtevima u kasnoj adolescenciji strategije emocionalne regulacije postaju nedostatne, te da moraju biti praćene drugim protektivnim faktorima za održavanje subjektivnog blagostanja (npr. socijalnom podrškom). Longitudinalni dizajn omogućio bi odgovor na pitanje u kojoj meri adaptivne strategije emocionalne regulacije u srednjoj adolescenciji služe kao protektivni faktor u daljem razvoju.

Strategija prihvatanje takođe ostvaruje značajnu, premda nisku povezanost sa NA. Po autorima skale CRQ, ova strategija podrazumeva prihvatanje misli i osećanja koja osoba ima u vezi negativnog događaja (Garnefski et al., 2002). Neki istraživači sugerišu oprez sa interpretacijom ove strategije, jer ona može meriti pasivnu formu rezignacije, pasivnost i prepuštanje, pre nego istinsko prihvatanje negativnih životnih događaja (Martin & Dahlen, 2005), te je, kao takvu, ne možemo smatrati adaptivnom, kako se i pokazalo u našem istraživanju.

Rezultati našeg istraživanja, dakle, idu u prilog nalazima da *Samo-okrivljavanje*, *Ruminacija, Katastrofiziranje* i *Prihvatanje* vode intenziviranju i održavanju negativnih emocija. Ove maladaptivne strategije mogu biti odgovorne za negativni afekat ovih osoba, ali isto tako možemo pretpostaviti da negativni afektivitet predisponira osobu za ovakav specifični kognitivni stil. Interesantno je i to da pomenute kognitivne strategije emocionalne regulacije nisu u korelaciji ni sa pozitivnim afektom niti sa subjektivnim blagostanjem (sa izuzetkom *Samo-okrivljavanje* strategije koja beleži nisku povezanost sa SB), što još jednom potvrđuje tezu o relativnoj nezavisnosti PA i NA i njihovim različitim korelatima (Tellegen et al., 1999; Terracciano et al., 2003), kao i o nephodnosti nezavisnog procenjivanja negativnog i pozitivnog afekta u istraživanjima subjektivnog blagostanja u cilju njegovog potpunog razumevanja.

Treće istraživačko pitanje u ovom istraživanju odnosilo se na ispitivanje prirode relacije između strategija kognitivne regulacije emocija i globalnog subjektivnog blagostanja. Tačnije, zanimalo nas je da li se ova veza ostvaruje direktno, ili preko pozitivnog i negativnog afektiviteta kao medijatorskih varijabli? Analizom medijacije izdvojile su se dve strategije kognitivne emocionalne regulacije koje značajno predviđaju subjektivno blagostanje: pozitivna preformulacija i samo-okrivljavanje. Utvrđeno je da se veza između pozitivne preformulacije i globalne procene subjektivnog blagostanja ostvaruje delimično direktno, a delimično je posredovana pozitivnim afektivitetom kao medijatorom. To znači da su osobe koje su sklone celovitom sagledavanju negativnih događaja i traženju pozitivnih aspekata u njima, generalno pozitivnije. Ova strategija podrazumeva široku perspektivu, pa otuda možemo pretpostaviti da ove osobe zadržavaju ovu perspektivu, tj. kognitivni stil i van stresnih iskustava, u globalnoj proceni svog subjektivnog blagostanja, fokusirajući se tako na sagledavanje života sa pozitivne strane. Ovaj nalaz daje potporu i drugim studijama koje su pokazale da osobe koje češće koriste pozitivnu preformulaciju izveštavaju o višem nivou ličnog blagostanja (Gross & John, 2003). S druge strane, medijatorski efekat PA u ovoj relaciji možemo razumeti u kontekstu teorije "proširenja i izgradnje" (broaden-and-build theory - Fredrickson, 2004). Po ovom modelu, jedan od načina na koji ljudi pokušavaju da prizovu pozitivne emocije u stresnim situacijama je taj da nađu pozitivni smisao u "običnim" događajima, kao i u samom negativnom događaju. One se uspešno decentriraju od aktuelnog problema i uspevaju da ga sagledaju iz više uglova

(Fredrickson & Joiner, 2002), što zapravo predstavlja strategiju pozitivne pre-formulacije. Ova relacija je recipročna: ne samo da pozitivna preformulacija direktno okida pozitivne emocije, već i obrnuto – pozitivne emocije proširuju kognitivni repertoar u smislu otkrivanja novih kognitivnih i bihevioralnih strategija (povećava se fleksibilnost u mišljenju, unapređuju se problem solving strategije - Fredrickson & Branigan, 2005). Sve to doprinosi povećanju personalnih resursa: kada osoba otkriva nove ideje i akcije, ona dalje gradi svoje fizičke, intelektualne, socioemocionalne i psihološke resurse. Tako se efekti pozitivnog afekta kumuliraju i sjedinjavaju – prošireni repertoar pažnje i kognicija podstaknut doživljajem pozitivnih emocija olakšava prevladavanje aktuelnih negativnih događaja; a zauzvrat, efikasnije prevladavanje doprinosi budućem doživljaju pozitivnih afekata u stresnim situacijama. Kako se ovaj krug nastavlja, tako osoba gradi svoju psihološku rezilijentnost i dugoročno unapređuje sopstveno blagostanje (Fredricson & Joiner, 2002; Fredrickson & Branigan, 2005).

Rezultati istraživanja takođe su pokazali da se veza samo-okrivljavanja i globalnog subjektivnog blagostanja ostvaruje isključivo indirektno - preko negativnog afektiviteta kao medijatora. To znači da sklonost ka okrivljavanju sebe za negativne životne događaje predisponira osobu za nisko subjektivno blagostanje preko prenaglašenog negativnog afektiviteta. Česta upotreba samo-okrivljavanja svakako okida averzivne emocije usmerene na sebe, i verovatno da se zato u istraživanjima dosledno pojavljuje kao jedan od najznačajnijih prediktora depresije i anksioznosti kod adolescenata (Garnefski & Kraaij, 2018), i to u svim kulturama (Osborn et al., 2020). Sem što okida negativni afekat, lako možemo pretpostaviti da ga i održava. Naime, neki istraživači tvrde da je veza između negativnog afekta i suženog, pesimističnog mišljenja dvosmerna, čime se negativni afekat dodatno pojačava (Peterson & Seligman, 1984). Negativne emocije zapravo sužavaju percepciju i repertoar kognitivnih i bihevioralnih strategija (Fredrickson, 2004). Ovakav suženi repertoar podstaknut negativnim afektom otežava prevladavanje aktuelnih negativnih događaja. S druge strane, hronično neefikasno prevladavanje doprineće povećanju negativnog afekta u narednim stresnim situacijama, čime se uspostavlja začarani krug koji vodi do niskog subjektivnog blagostanja.

Zaključak

Najveći broj dosadašnjih istraživanja ispitivao je vezu između kognitivne emocionalne regulacije i emocionalnih poremećaja, najčešće u cilju identifikovanja onih strategija koje predstavljaju poseban rizik po mentalno zdravlje (Garnefski & Kraaij, 2018; Schafer et al, 2017). Nasuprot tome, značajno manji broj studija se bavi povezanoću kognitivnih strategija emocionalne regulacije sa pozitivnim aspektima subjektivnog blagostanja (Gross and John 2003; Karademas 2007; Shiota 2006). Ovo istraživanje je imalo za cilj upravo rasvetl-

javanje veze između kognitvne emocionalne regulacije i pozitivnih aspekata blagostanja.

Sprovedeno istraživanje je pokazalo da su strategije kognitivne emocionalne regulacije pozitivna preformulacija, stavljanje u perspektivu, planiranje i pozitivno refokusiranje u snažnoj vezi sa pozitivnim indikatorima mentalnog zdravlja (globalnim subjektivnim blagostanjem adolescenata i pozitivnim afektivitetom) i u tom smislu ih možemo smatrati adaptivnima. Nasuprot tome, rezultati su pokazali da su maladaptivne strategije emocionalne regulacije (ruminacija, katastrofiziranje i prihvatanje i samookrivljavanje) povezane sa negativnim afektom. Želeći da utvrdimo prirodu relacije između strategija emocionalne regulacije i subjektivnog blagostanja, pitali smo se da li je ova veza posredovana opštim afektom. Hipoteza o medijaciji je potvrđena u slučaju strategija pozitivno refokusiranje i samo-okrivljavanje. U prethodnim istraživanjima je već sugerisano da određene strategije emocionalne regulacije mogu putem različitih mehanizama uticati na subjektivno blagostanje, te da zbog toga nisu sve jednako efektivne u promociji subjektivnog blagostanja (Shiota, 2006). Tako se smatra da su strategije koje direktno pojačavaju pozitivni afekat u stresnim situacijama (poput pozitivne preformulacije) efikasnije u poboljšanju subjektivnog blagostanja (Karademas, 2007), što je u ovom istraživanju i potvrđeno. Rezultati našeg istraživanja ukazuju i na to da je mehanizam veze između niskog globalnog subjektivnog blagostanja i samo-okrivljavanja taj da uobičajeno korišćenje samo-okrivljavanja produkuje i održava negativni afekat, i na taj način snižava subjektivno blagostanje.

U svetlu dobijenih rezultata, moguće je formulisati i neke praktične implikacije za preventivni i interventni rad sa adolescentima u cilju unapređenja subjektivnog blagostanja. Napredak kognitivnog razvoja u adolescenciji omogućava povećanu sposobnost za korišćenje kognitivnih strategija prevladavanja (Saarni, 1999) i sve veći broj alternativa za emocionalnu regulaciju (Compas et al., 2017). S obzirom na to da se kognitivne strategije emocionalne regulacije stiču i vremenom postaju automatizovane (Garnefski & Kraaij, 2006), možemo očekivati da bi pažljivo osmišljeni preventivni i interventni programi mogli imati dugoročne efekte po mentalno zdravlje mladih. Ono što možemo tvrditi sa velikom sigurnošću je da je unapređenje svih adaptivnih strategija, u prvom redu pozitivne preformulacije, osnovni cilj ovakvih intervencija. Takođe bismo mogli očekivati korist od tehnika za indukovanje pozitivnih emocija, jer je veza između pozitivne preformulacije i subjektivnog blagostanja delom posredovana pozitivnim afektom kao medijatorom. Novija istraživanja potvrđuju da održanje pozitivnog afekta u emocionalno intenzivnim situacijama olakšava upotrebu strategije pozitivne preformulacije i pospešuje njeno dejstvo (Waugh, 2020). Istovremeno, sudeći po dobijenim rezultatima, transformacija negativnog afekta (naročito u slučaju samookrivljavanja kao strategije) dovela bi do povišenog blagostanja. Kao primeri intervencija namenjenih povećanju pozitivnog afekta navode se negovanje optimizma i zahvalnosti (Quoidbach et al., 2015).

Ograničenje sprovedenog istraživanja ogleda se u tome da nisu prikupljeni podaci o konkretnim stresnim iskustvima ispitnika, jer se može pretpostaviti je kognitivna emocionalna regulacija situaciono specifična. Drugo, korišćeni nacrt nam ne dozvoljava da jasno zaključimo uzročno posledičnu vezu između ispitivanih varijabli. Moguće je da adaptivne kognitivne strategije emocionalne regulacije doprinose blagostanju i pozitivnom afektu, ali je lako pretpostaviti i obrnutu vezu: da su osobe visokog subjektivnog blagostanja pozitivnije i sklonije korišćenju ovih strategija. Iako verujemo da je cirkularni kauzalni model najverovatniji, da bi se konačno razrešila ova metodološka dilema neophodno bi bilo sprovođenje longitudinalne studije ili eksperimentalnog dizajna. Takođe, važno je istaći da pozitivan i negativan afekat svakako nisu jedini mehanizmi pomoću kojih se ostvaruje veza između kognitivne regulacije emocija i subjektivnog blagostanja, pa svakako u narednim istraživanjima treba ispitati i potencijalno medijaciono dejstvo nekih drugih varijabli, npr. self-koncepta i percepcije samoefikasnosti u primeni emocionalno regulatornih strategija.

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COGNITIVE REGULATION OF EMOTION AND SUBJECTIVE WELL-BEING IN ADOLESCENTS: IS THERE A DIRECT LINK?

The aim of this study was to identify which are the most prevalent cognitive emotion regulation strategies (CERS) in adolescents and how they are related to adolescent mental health (subjective well being and positive and negative affect). We also examine the possibility that positive and negative affect mediates relatonship between CERS and global subjective well-being. The research was conducted on a sample of 206 students, mean age 16 years. The results showed that the most common strategies in adolescents are positive reformulation and taking into perspective, which, together with planning and positive refocusing, are associated with positive mental health indicators (subjective well-bein and positive affect). Rumination, catastrophization, self-blame, and to a lesser extent, acceptance are associated with negative affectivity. The analysis of mediation singled out two strategies of cognitive emotional regulation that significantly predict subjective well-being: positive reformulation and self-blame. It was found that the relationship between positive reformulation and subjective well-being is governed partly directly, and partly mediated by positive affectivity. The results of the research also showed that the relationship between self-blame and global subjective well-being is exclusively establihed through negative affectivity as a mediator. In the light of the obtained results, some practical implications for interventions with adolescents have been formulated.

Key words: adolescence, cognitive emotion regulation, negative affect, subjective well-being, positive affect

UPUTSTVO AUTORIMA

Za objavljivanje u časopisu *Primenjena psihologija* prilažu se isključivo originalni radovi koji nisu prethodno štampani i nisu istovremeno podneti za objavljivanje negde druge. U časopisu se objavljuju empirijski i pregledni radovi. Pregledni rad treba da sadrži originalan, detaljan i kritički prikaz istraživačkog problema ili područja u kome je autor ostvario određeni doprinos, vidljiv na osnovu autocitata. Radovi koji nisu pripremljeni prema ovom uputstvu, neće se recenzirati. Rukopisi se šalju isključivo putem platforme za prijavu, koja je dostupna na: http://primenjena.psihologija.ff.uns.ac.rs/index.php/pp/about/submissions.

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Format rada. Rad mora biti napisan u tekst procesoru Microsoft Word, na stranici formata A4, fontom Times New Roman ili Cambria (12 tačaka), latinicom, sa razmakom od 1.5 reda, sa marginama od 2.54 cm (odnosi se na sve margine). Rad treba da bude dužine do jednog autorskog tabaka (do 30000 znakova, sa razmacima, bez referenci i priloga), a ukoliko je reč o kratkom izveštaju, rad treba da bude do 5 000 znakova (s razmacima) bez referenci i priloga. Redni brojevi strana treba da budu dati u gornjem desnom uglu, zajedno sa zaglavljem koje sadrži skraćeni naslov rada (tzv. *running head*), pisan velikim slovima, bez imena autora. Zaglavlje ne sme imati više od 50 karaktera. Paginacija bi trebalo da počinje od prve strane. Rad treba da bude strukturiran u skladu sa IMRAD formatom i pravilima koja su definisana u **7. izdanju Priručnika Američke psihološke asocijacije (*APA Publication Manual*)**.

Shodno tome, rad treba da sadrži odeljke *Rezime* sa ključnim rečima, *Uvod*, *Metod*, *Rezultati*, *Diskusija*, *Zaključak* (opciono), *Reference*, *Prilozi* (opciono), kao i naslov i rezime sa ključnim rečima na engleskom jeziku.

Naslovna strana. Naslov treba da bude što koncizniji, ali i dovoljno precizan. Preporuka APA standarda je da naslov ne sadrži više od 15 reči. Ukoliko se u članku izveštava o nekom instrumentu koji nije opštepoznat široj naučnoj i stručnoj javnosti, naziv instrumenta je potrebno navesti u celini u naslovu rada, a ne samo skraćenicu. Ukoliko je rad nastao u sklopu projekta, iza naslova rada treba staviti fusnotu koja sadrži naziv finansijera projekta i broj projekta. Ukoliko je deo rezultata izlagan na skupu, u fusnoti treba dati podatke o skupu. Iza naslova rada slede imena autora i njihove afilijacije. Iza imena autora za korespondenciju treba staviti fusnotu koja sadrži e-mail adresu autora. Naslov rada, imena autora i afilijacije autora daju se na prvoj strani, bez ostatka teksta. Ova strana se, kao poseban dokument, prilaže na platformu, odnosno odvojeno od samog rukopisa.

Rezime. Rezime treba da bude dužine do 250 reči. Na kraju rezimea treba dati ključne reči (do pet ključnih reči). Ukoliko je rad na srpskom jeziku, potrebno je priložiti naslov, rezime i ključne reči i na engleskom jeziku. Rezime po pravilu ne sadrži reference, sem ukoliko je to neophodno.

Naslovi odeljaka. Naslovi odeljaka (*Metod*, *Rezultati* i sl.) pišu se **podebljanim** slovima, „rečeničnim" formatom (velikim početnim slovom), centrirano. Naslovi drugog nivoa se pišu **podebljanim** slovima, poravnato u levo i u „rečeničnoj" formi. Naslovi trećeg nivoa pišu se poravnato u levo (***podebljano, italikom*** u „rečeničnoj" formi). Naslovi četvrtog nivoa se pišu **uvučeno** u odnosu na levu marginu, u rečeničnom formatu, **podebljano i s tačkom na kraju**. Naslovi petog nivoa, se pišu **uvučeno** u odnosu na levu marginu, u rečeničnom formatu, ***podebljano, italikom i s tačkom na kraju***. Nazive instrumenata, u odeljku Metod, treba navoditi kao subordinirane podnaslove u okviru odeljka *Instrumenti*.

Formatiranje naslova i podnaslova

Nivo naslova	Format
1	**Metod**
2	**Instrumenti**
3	***Velikih pet plus dva***
4	**Verzije za decu.**
5	***Procena roditelja.***
	Procena učitelja.

Tabele. Tabele i grafikoni treba da budu sačinjeni u Wordu ili nekom Word-kompatibilnom formatu. Tabele i grafikone iz statističkih paketa treba prebaciti u Word. Iste podatke ne treba istovremeno prikazivati i tabelarno i grafički. Podaci koji su već dati u tabeli ili na grafikonu, ne smeju se ponavljati u tekstu, već se treba samo pozvati na njih. Tabele i grafikone je potrebno pozicionirati u samom radu, odnosno nije potrebno da se prilažu kao posebni dokumenti na platformu, već u sklopu rukopisa. Svaka tabela treba da bude označena brojem i adekvatnim nazivom. Broj tabele treba da bude napisan običnim slovima, a naziv tabele treba da bude dat u sledećem redu, *kurzivom*. Broj i naziv tabele nalaze se iznad tabele, poravnati u levo. Tabele ne smeju da sadrže vertikalne linije. Redovi tabele ne treba da budu razdvojeni linijama, ali zaglavlje tabele mora da bude linijom odvojeno od ostalih redova. Vrednosti u tabelama bi trebale da budu date u sredini kolone, sa decimalnim mestima pozicioniranim levim tabulatorom.

Korektan prikaz tabele:

Tabela 1

Korelacije nasilnog ponašanja i komponenti ispitne anksioznosti

	Fizičko nasilje	Verbalno nasilje	Relaciono nasilje
Zabrinutost	-.23**	-.24**	-.14*
Negativna emocionalnost	.27**	.36**	.24**

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

Grafikoni i slike. Slike treba slati u elektronskoj formi sa rezolucijom od najmanje 300 dpi. Štampa časopisa je crno-bela, pa se autori mole da prilagode tabele, grafikone i slike crno-beloj štampi. Ukoliko se koristi ilustracija iz štampanog izvora nužno je pismeno odobrenje vlasnika autorskih prava. Naziv slike treba da bude prikazan ispod slike nakon oznake rednog broja. Na primer:
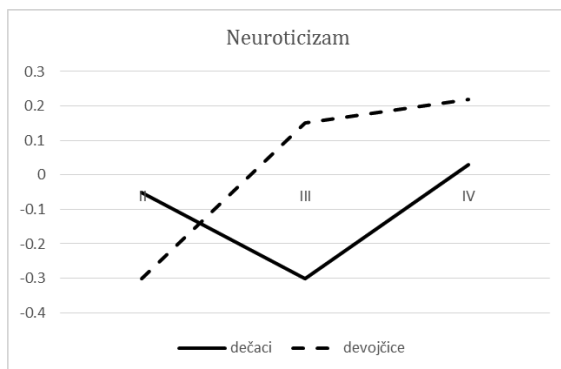
Slika 1. Interakcija pola i razreda kod učenika ranog osnovnoškolskog uzrasta: dimenzija Neuroticizma.

Rezultati statističke obrade. Rezultati statističkih testova treba da budu dati u sledećem obliku: $F(1, 9) = 25.35$, $p < .001$ i slično za druge testove (npr. $\chi^2(5, N = 454) = 5.311$, $p > .10$ ili $t(452) = 2.06$, $p < .05$). Treba navoditi manji broj konvencionalnih p nivoa (.05, .01 ili .001). Ukoliko je broj teorijski manji od 1 (npr. α, r, opterećenja u faktorskoj analizi, p nivo i sl.), nula se ne stavlja ispred tačke. Po pravilu, nazivi statističkih testova i oznaka treba da budu napisani u *kurzivu*, sem ako je reč o grčkim simbolima koji se **ne pišu** u kurzivu.

Decimalni brojevi. Uvažavajući statističke konvencije, decimalne brojeve treba pisati sa tačkom. Sve decimalne zapise treba zaokružiti na dve decimale, sem kada se navode indikatori fita, p nivo značajnosti i sl. gde je i podatak o razlikama na trećoj decimali bitan.

Navođenje referenci u tekstu. Imena stranih autora navode se u originalu, npr. Dimanche (1990), ili kada je potrebno u padežnom obliku „...rezultati Dimanchea (Dimanche, 1990)...", s tim što je onda potrebno u zagradu staviti referencu. Ukoliko referenca ima **dva autora**, oba se navode u tekstu, npr. (Costa & McCrae, 1992). Ukoliko je u pitanju domaća referenca, umesto znaka „&" navodi se „i", npr. (Jovanović i Petrović, 2011). Ukoliko rad ima **3 ili više autora**, u svakom navodu se pominju samo prezime prvog autora i skraćenica „et al." za strane reference, ili „i sar." za domaće. Na primer, na engleskom jeziku, prvi, i svaki sledeći navod bi imao formu (Roberts et al., 2004). Na srpskom jeziku, prvi, i svaki sledeći navod bi imao formu (Novović i sar., 2011). Ukoliko dva rada iz iste godine imaju istog prvog autora, a ostali su različiti, treba navesti onoliko imena autora koliko je potrebno da bi se reference mogle jasno razlikovati u tekstu. Na primer, reference (Black, White, Brown, & Green, 1991) i (Black, Brown, White, & Green, 1991) imaju istog prvog autora i istu godinu izdanja. U ovom slučaju, u tekstu bi se navodile kao (Black, White, et al., 1991) i (Black, Brown, et al., 1991).

Doslovno citiranje. Svaki citat koji je direktno preuzet iz teksta, bez obzira na dužinu, treba da prati referenca sa brojem strane. Za svaki citat duži od 350 znakova autor mora imati pismeno odobrenje vlasnika autorskih prava koje treba da priloži.

Spisak referenci. U spisku literature navode se samo reference na koje se autor pozvao u radu, abecednim redom po prezimenima autora. Ukoliko rad sadrži nekoliko referenci čiji je prvi autor isti, najpre se navode radovi u kojima je taj autor jedini autor, po rastućem redosledu godina izdanja, a potom se navode radovi u odnosu na abecedni red prvog slova prezimena drugog autora (ukoliko ima koautore). Ukoliko se navodi više radova istog autora u jednoj godini, godine treba da budu označene slovima a, b, c, npr. (1995a), (1995b). Za svaku referencu u popisu literature potrebno je navesti i **DOI broj**, ukoliko je dostupan. Na stranici https://www.crossref.org/requestaccount/, nakon otvaranja svog naloga, možete pronaći DOI broj za većinu dostupnih članaka. DOI broj se nalvodi u formatu linka: https://doi.org/10.1016/j.paid.2015.04.039

Monografija (knjiga). Bibliografska jedinica knjige treba da sadrži prezime i inicijale autora, godinu izdanja, naslov knjige (*kurzivom*) i izdavača, odnosno: Pantić, D. (1990). *Promene vrednosnih orijentacija mladih u Srbiji.* Institut društvenih nauka. Nazivi knjiga na engleskom jeziku pišu se u „rečeničnom" formatu, takođe u *kurzivu*. Ukoliko naziv knjige ima podnaslov, on može počinjati velikim slovom.

Zbornik u celini. Ukoliko se kao referenca navodi zbornik radova u celini, referenca ima sledeću formu: Biro, M., Smederevac, S. i Novović, Z. (Ur.) (2010). *Procena psiholoških i psihopatoloških fenomena.* Centar za primenjenu psihologiju.

Poglavlje u knjizi ili zborniku navodi se na sledeći način: Day, R. L. (1988). Measuring preferences. In R. Ferber (Ed.), *Handbook of marketing reasearch* (pp. 112-189)*.* McGraw-Hill. Naslovi stranih knjiga i zbornika treba da budu dati u „rečeničnoj formi", sa početnim velikim slovom i ostalim malim. Ukoliko rad ima podnaslov, on se od naslova odvaja sa dve tačke i počinje velikim slovom. Ukoliko zbornik ima samo jednog urednika, umesto Eds. se navodi oblik jednine Ed. U domaćim referencama ovog tipa, strana skraćenica Ed. ili Eds. treba da glasi „Ur.", a skraćenica „In" - „U".

Članak u časopisu treba da sadrži prezimena i inicijale autora, godinu izdanja u zagradi, naslov članka, puno ime časopisa (*kurzivom*), volumen (*kurzivom*), stranice, i doi specifikaciju, odnosno: Orbach, L., Herzog, M., & Fritz, A. (2019). Relation of state- and trait-math anxiety to intelligence, math achievement and learning motivation. *Journal of Numerical Cognition, 5*(3), 371–399. https://doi.org/10.5964/jnc.v5i3.204. Nazivi članaka pišu se u „rečeničnom" formatu, u kom je samo prvo početno slovo veliko. Nazivi časopisa na engleskom jeziku pišu se tako da početna slova svih reči, izuzev veznika, budu velika. Nakon prezimena autora, uvek se stavlja zarez, kao i nakon inicijala (ukoliko ima više inicijala imena, zarez se stavlja nakon svih inicijala zajedno, a ne nakon svakog posebno). U domaćim referencama, znak „&" treba zameniti veznikom „i". Referenca rada objavljenog u časopisu koji se izdaje isključivo u elektronskoj formi ima iste elemente kao referenca rada iz štampanog časopisa, ali se nakon broja stranica navodi „Retrieved from" (za domaće reference „Preuzeto sa") i web adresa: Sillick, T. J., & Schutte, N. S. (2006). Emotional intelligence and self-esteem mediate between perceived early parental love and adult happiness. *E-Journal of Applied Psychology, 2*(2), 38–48. Retrieved from http://ojs.lib.swii.edu.au/index.php/ejap Kada je reč o **web dokumentu ili stranici**, navodi se ime autora, godina, naziv dokumenta (*kurzivom*), datum kada je sajt posećen, i internet adresa sajta, npr. Degelman, D. (2000). *APA Style Essentials.* Retrieved May 18, 2000 from: http://www.vanguard.edu/psychology/apa.pdf

Navođenje **nepublikovanih radova** (npr. rezimea sa naučnog skupa, manuskripta i sl.) nije poželjno. Ukoliko je takvo navođenje neophodno, treba

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Prevod referenci. Ukoliko se na recenziju predaje rad na engleskom jeziku i pri tome se citiraju reference na srpskom, potrebno je dati engleski prevod citiranih naslova u uglastim zagradama: Padejski, N., & Biro, M. (2014). Faktori vulnerabilnosti za postraumatski stresni poremećaj kod žrtava partnerskog nasilja [Vulnerability factors for posttraumatic stress disorder in victims of intimate partner violence]. *Primenjena psihologija, 7,* 63–85. https://doi.org/10.19090/pp.2014.1.63-85

Prilog. U priloge treba staviti samo one opise materijala koji bi bili korisni čitaocima za razumevanje, evaluiranje ili ponavljanje istraživanja.

Fusnote i skraćenice. Fusnote treba izbegavati. Skraćenice takođe treba izbegavati, osim izrazito uobičajenih. Skraćenice koje su navedene u tabelama i slikama treba da budu objašnjene. Objašnjenja (legenda) se daju ispod tabele ili slike.