Recent studies have demonstrated that social isolation during the 2020 COVID–19 pandemic has significantly impacted the mental and physical health of people worldwide. However, it remains unknown whether physical activity can improve mental health in a state of emergency. The present study aimed to examine the importance of physical exercising and stress management mechanisms (problem-focused, emotion-focused, and avoidant) in the context of mental health indicators (depression, anxiety, and nonspecific stress) in conditions of social isolation during COVID–19-induced lockdown in Serbia. The sample consisted of 680 adults (66% female), mean aged 35.91 years ($SD = 12.45$). The results indicated a significant relation between physical exercising and a reduced stress response and confirmed the usefulness of the already well-known problem-focused strategies. Avoidant and emotion-focused coping were associated with poorer mental health outcomes. However, as a moderator, physical activity lowered anxiety levels in individuals prone to emotion-focused coping.

**Keywords:** physical activity, COVID–19-induced lockdown, stress coping, mental health

**Highlights:**

- Avoidant and problem-focused coping were significantly related to mental health during COVID–19-induced lockdown in Serbia.
- The effects of emotion-focused coping strategies were moderated by the level of physical activity.
- Promoting physical exercise (at home and in public spaces) during lockdown might prevent mental health issues.

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The COVID–19 pandemic represents much more than a threat to the physical health of the human population worldwide. It is a stress-inducing global crisis that affects various aspects of human life. From a psychological point of view, it is reasonable to expect for it to have a negative impact on people’s mental health. Research in support of the previous claim has already been published, with registered data about elevated levels of depressive mood, post-traumatic stress, and sleep problems (e.g., Pfeferbaum & North, 2020). Other studies examining the pandemic’s effects on mental health have indicated that one should not underestimate its negative impact on individuals who are under a direct threat as well as those who merely anticipate a potential negative impact (e.g., in the economic, social or family context) (Guo et al., 2020). Therefore, it is necessary to further explore the already known coping strategies and identify the ones that could be beneficial in this unfamiliar situation.

Physical Exercise and Mental Health

The relationship between physical exercise and mental health has become increasingly important in modern science. Researchers’ interests range from the preventive importance of physical activity for mental health (Chekroud et al., 2018) to the use of physical exercise in treating mental health disorders (Zschucke et al., 2013). The results of both groups of studies have highlighted the benefits of physical activity and moderate exercise.

The link between regular physical activity and lower psychological distress has been confirmed in various studies involving large samples of respondents (e.g., Biddle & Asare, 2011; Ten Have et al., 2011). Physical activity has proven to be a significant aid tool for people who find it harder to accept classical psychological interventions (Salmon, 2001). It has been found to reduce substance abuse when used as a complementary treatment for addiction diseases such as alcoholism (Hallgren et al., 2017). Along with mindful activities such as meditation and yoga, moderate and controlled physical activity helps treat anxiety and depression (Saed et al., 2010). Certain studies also report the beneficial effect of physical activity in the prevention of anxiety development (McDowell et al., 2019).

It is important to note that not every form of physical exercise is accompanied by improvements in general psychological functioning and mental health. This primarily refers to excessive and compulsive exercise, which is associated with various psychopathological phenomena (Lichtenstein et al., 2017; Peluso & Guerra de Andrade, 2005). Nonetheless, some neuroscientific studies have linked intense exercise to positive neurobiological responses (Heyman et al., 2012).

When it comes to the relationship between physical activity and mental health during the COVID–19 pandemic, a British cross-sectional study ($N = 902$, aged 35–64) showed that people who were more physically active expressed...
generally better mental health, reported through lower levels of anxiety and depression and higher levels of positive mental well-being (Jacob et al., 2020).

**Stress Coping Strategies during a Lockdown Situation**

According to the *transactional model of stress* and coping (Lazarus & Folkman, 1984), we can distinguish between problem-oriented coping, which aims to change and/or control the aversive situation itself, and emotion-focused coping, which aims to manage emotional reactions (Beer & Moneta, 2012). Some authors have added the third dimension of coping, which includes well-known everyday behaviors aimed at avoiding the problem (Elliot et al., 2011). This dimension refers to cognitive or behavioral avoidance or denial of the existence of the problem.

A significant number of studies have attempted to determine which of the listed coping mechanisms are more adaptive (Penley et al., 2002). It seems that it depends on the specifics of the stressor (for example Baker & Berenbaum, 2007; Moskowitz et al., 2009). In controllable situations, problem-oriented coping is considered constructive, while in uncontrollable circumstances, emotion-focused mechanisms have proven to be more adaptive (Genc et al., 2013). In other words, problem-focused strategies are adaptive when it is possible to solve the problem by implementing a concrete action. Emotion-focused strategies are useful when the stressful situation cannot be changed (Carr & Pudrovská, 2007).

A recent study addressed perceived stress and coping mechanisms related to COVID–19 in people with disabilities and chronic conditions (Umucu & Lee, 2020). It gave similar but more concrete results regarding adaptive stress-coping strategies relevant to the present study. Namely, the study showed that a higher level of perceived stress was related to avoidant coping strategies such as denial, substance use, self-distraction, behavioral disengagement, venting, self-blame, but also strategies such as planning and religion, which cannot be considered avoidant and are therefore not maladaptive (according to Meyer, 2001). Active coping reflected in strategies such as seeking emotional support and instrumental support, positive reframing, acceptance, and humor did not achieve a statistically significant relationship with the level of perceived stress. In light of the finding that perceived stress is related to some classically considered adaptive strategies such as planning and, conditionally speaking, religion, it is deemed important to further investigate stress coping strategies during the COVID–19 pandemic across different contexts.

The main goal of the present study was to examine the importance of physical activity in the context of mental health during the 2020 COVID–19–induced lockdown. Additionally, we aimed to examine the stress management mechanisms that contribute to more adaptive coping in such conditions: 1. We expected generally higher levels of stress, anxiety, and depression during COVID–19-induced lockdown; 2. We expected the older population to be more
affected in the context of mental health, given the strictest limitations on freedom of movement and the highest risk level; 3. The most critical expectations were related to the assumption that the previously known adaptive stress coping mechanisms (e.g., problem-solving strategies) would be associated with better outcomes in the context of mental health, as well as a higher level of physical activity. We hypothesized that physical activity, independently or at least in interaction with other coping mechanisms, would be related to lower levels of anxiety, depression, and stress.

Method

Participants

The final sample consisted of 680 respondents (66% female), 18–78 years old \( M = 35.91, SD = 12.45 \). The only condition for participation in the research was that the respondents were adult citizens, which means that we excluded all respondents under the age of 18. The distribution of respondents concerning their self-assessment of overall physical activity before the state of emergency shows that 15.4% of respondents declare themselves as active athletes, 63.8% as recreationally physically active and 20.4% as physically inactive persons.

Procedure

This study was anonymous. Respondents voluntarily participated in the study by filling in online questionnaires in the Serbian language (Google Form), which were available on the institutional website, social networks, and the web portal of a national magazine. The purpose of the study was explained in questionnaire instructions. Data were collected online, during April 2020, when a state of emergency was in force in the Republic of Serbia, which significantly restricted the freedom of movement of citizens and when public gatherings were banned and outdoor exercise spaces and gyms were closed.

The study was approved by the Ethical Board of the Faculty of Sport and Tourism, Educons University, and it was carried out following the accepted guidelines and regulations.

Instruments and Variables

The Socio-Demographic and Pandemic Situation Questionnaire was designed for the purpose of this research. In addition to demographic data (gender, age, vocation, and the number of household members), it collects data about respondents’ behavior during the state of emergency (whether they work from home or go to work and how often they go out during isolation), as well as current physical activity – whether they exercise and to what extent, or are physically inactive during the lockdown (categorical data).

The Godin Leisure-Time Exercise Questionnaire (GLTEQ; Godin, 2011; Serbian adaptation by Popov et al., 2021) is a self-report measure of physical activity over the course of a week. The questionnaire measures how often the respondent engaged in physical activity lasting at least 15 minutes during the previous week. It distinguishes between three levels of physical activity: strenuous (e.g., running, squash, and roller skating), moderate (e.g., fast walking, easy bicycling, and tennis), and light (e.g., yoga, easy walking, and archery). The weekly frequencies of light activities are multiplied by three, moderate by
five, and strenuous by nine metabolic equivalents. The total sum of all these activities forms the leisure activity score (24 or more – active, 14–23 – moderately active, fewer than 14 units – insufficiently active). In this study, the questionnaire was used to measure the average physical activity before the state of emergency. In the analyses, we used the total score on this questionnaire (the sum of multiplied data on all three subscales).

The Brief COPE (Carver, 1997; translated and adapted into Serbian by Živanović & Vukčević-Marković, 2019) is a scale that operationalizes stress coping mechanisms. The psychometric properties of the instrument were derived from a sample of people recovering from a natural disaster. It is a 28-item questionnaire with a five-point Likert scale. The Cronbach alpha coefficient in our sample was .84. The questionnaire initially consisted of 14 subscales related to different coping mechanisms, which could be conditionally divided into three groups (according to Carver, 1997): 1. Problem-focused coping: Active coping, Instrumental support, and Planning (sample item: “I’ve been taking action to try to make the situation better”); 2. Emotion-focused coping: Acceptance, Emotional support, Humor, Positive reframing, and Religion (sample item: “I’ve been looking for something good in what is happening”); 3. Avoidant coping: Denial, Self-distraction, Substance use, Behavioral disengagement, Venting, and Self-blame (sample item: “I’ve been refusing to believe that it has happened”). An earlier examination of the factor structure of the scale on different samples did not yield consistent results (Cramer et al., 2020; Genc et al., 2013).

The Depression, Anxiety, Stress Scale (DASS–21; Lovibond & Lovibond, 1995; translation into the Serbian language is suggested by the author of the scale on the official website: http://www2.psy.unsw.edu.au/dass/Serbian/DASS-SER.pdf) is used for measuring mental indicators. The instrument consists of three subscales 1. The depression scale assesses the degree of dysphoria, hopelessness, low-self-esteem, anhedonia, and passivity (sample item “I felt that I had nothing to look forward to”; α in our sample was .87); 2. The anxiety scale refers to the subjective feeling of situational anxiety, autonomic arousal, and skeletal muscle tension (sample item: “I felt I was close to panic”; α in our sample was .87); 3. The stress scale measures difficulties in relaxing, nervous arousal, and the tendency to be easily agitated, irritable, and upset (sample item: “I tended to over-react to situations”; α in our sample was .90). Instructions for filling out the questionnaire indicate that the respondent should mark the answer that best describes how he/she felt during the previous week due to the lockdown situation.

Data Analysis

The data were analyzed in the statistical package IBM SPSS version 21, using the following procedures: descriptive statistics, t-test for independent samples (for measuring differences with comparative sample) and hierarchical regression analysis (for measuring prediction of different coping mechanisms on mental health indicators).

Results

Descriptive statistics are presented in Table 1. According to Skewness and Kurtosis, most of the variables are in a range that indicates normal distribution, except for clinical variables (anxiety and depression) which slightly and expectedly deviate from normal.
Table 1
Descriptive statistics for variables in the study

|                                | Theoretical range | Achieved range | M       | SD     | Skewness | Kurtosis |
|--------------------------------|-------------------|----------------|---------|--------|----------|----------|
| Prior physical activity (GLTEQ) | 0–119             | 0–119          | 38.83   | 28.88  | .97      | .48      |
| Avoidant coping (Brief COPE)    | 12–48             | 12–43          | 21.40   | 4.90   | .74      | 1.03     |
| Problem focused coping (Brief COPE) | 12–48           | 12–48          | 33.17   | 7.45   | -.36     | -.18     |
| Emotion focused coping (Brief COPE) | 6–24             | 6–24           | 15.48   | 4.24   | -.22     | -.02     |
| Current physical exercise      | 1–4               | 1–4            | 2.57    | .97    | -.41     | -.89     |
| Depression (DASS–21)           | 0–21              | 0–21           | 4.07    | 4.87   | 1.50     | 1.75     |
| Anxiety (DASS–21)              | 0–21              | 0–21           | 3.11    | 4.49   | 1.81     | 2.81     |
| Stress (DASS–21)               | 0–21              | 0–21           | 7.38    | 5.64   | .53      | -.59     |

To obtain data about the severity of anxiety, depression, and stress symptoms, we compared the results on DASS–21 with the norms recommended by the author of the scale (Lovibond & Lovibond, 1995). The cut-off scores on the abbreviated version of the instrument used in this study (DASS–21) are calculated by double multiplying the scores obtained on the three subscales. The results are shown in Table 2.

Table 2
Distribution of DASS–21 scores according to recommended cut-off values for conventional severity labels

| DASS–21 scores | % Normal | % Mild | % Moderate | % Severe | % Extreme severe |
|----------------|----------|--------|------------|----------|------------------|
| Depression     | 66       | 11     | 11         | 4        | 8                |
| Anxiety        | 72       | 9      | 7          | 3        | 9                |
| Stress         | 56       | 12     | 15         | 9        | 8                |

Note. *Lovibond & Lovibond, 1995.

We can see that on all three subscales, the highest percentage of results were within the range of theoretical cut-off scores that are considered normal. However, if we take into account the fact that the results ranged from moderate to extremely severe, we can see that 23% of respondents experienced symptoms of anxiety, 28% experienced symptoms of depression, and 32% reported symptoms of stress.

Table 3 shows correlations among variables in the study. Since we used both prior (before COVID–19-induced lockdown) and current physical activities (during COVID–19-induced lockdown) in the analysis, both variables are indicated in Table 3.
Table 3

Intercorrelations among the variables

|          | 1     | 2   | 3     | 4    | 5    | 6     | 7     | 8     |
|----------|-------|-----|-------|------|------|-------|-------|-------|
| Age      |       |     |       |      |      |       |       |       |
| Prior physical activity | -.11  |     |       |      |      |       |       |       |
| Current physical activity | -.01  | .18**|       |      |      |       |       |       |
| Avoidant coping | -.07  | -.15**| -.12**|     |      |       |       |       |
| Emotion coping | -.08* | -.05 | .06   | .34**|     |       |       |       |
| Problem focused | -.00  | -.03 | .07   | .42**| .67**|       |       |       |
| Depression | -.09* | -.10**| -.17**| .52**| -.01| .03   |       |       |
| Anxiety   | -.12**| -.11**| -.17**| .52**| .13**| .14**| .75**|       |
| Stress    | -.13**| -.16**| -.16**| .56**| .16* | .22**| .75**| .72** |

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

In order to compare the average scores achieved on our sample and the comparative sample of students in Serbia (Jovanović et al., 2014), we conducted a t-test for independent samples. In this study, statistically significantly higher scores on depression (t(678) = 4.67, p < .001, d = 0.22) as well as stress were achieved (t(678) = 2.87, p < .004, d = 0.14).

To measure the impact of different coping strategies and physical exercise on the level of stress, anxiety, and depression symptoms during the lockdown, we conducted a hierarchical regression analysis (Table 4). The first set of predictor variables consisted of participant age and the level of physical activity before lockdown. The model was statistically significant in the case of all three mental health indicators (Depression: \( F = 7.24 \), \( R^2 = .02 \), \( p < .001 \); Anxiety: \( F = 11.12 \), \( R^2 = .03 \), \( p < .001 \); Stress: \( F = 16.50 \), \( R^2 = .05 \), \( p < .001 \)). The second set of predictor variables consisted of coping strategies and participants’ level of physical activity during isolation. This set of variables made the most substantial contribution to explaining the variance of Depression (31%), Anxiety (26%), and Stress (29%) (Depression: \( \Delta F = 76.19 \), \( \Delta R^2 = .31 \), \( p < .001 \); Anxiety: \( \Delta F = 62.18 \), \( R^2 = .26 \), \( p < .001 \); Stress: \( \Delta F = 73.18 \), \( \Delta R^2 = .29 \), \( p < .001 \)). The third block of predictor variables comprised interactions between coping strategies and physical exercise. These interactions significantly contributed only to the explanation of the variance of Anxiety, but only slightly (1%) (Depression: \( \Delta F = 1.67 \), \( \Delta R^2 = .01 \), \( p > .01 \); Anxiety: \( \Delta F = 4.26 \), \( R^2 = .01 \), \( p < .005 \); Stress: \( \Delta F = 1.72 \), \( \Delta R^2 = .01 \), \( p > .01 \).
Table 4
Hierarchical regression with coping styles, current physical activity and their interaction in the prediction of depression, anxiety and stress

| Model 1 | Depression | Anxiety | Stress |
|---------|------------|---------|---------|
|         | F = 7.24   | R² = .02*** | β  | t  | r  | F = 11.12 | R² = .03*** | β  | t  | r  | F = 16.50 | R² = .05*** | β  | t  | r  |
| Age     | -.10*      | -.2.77  | -.09 | -.14 | -.3.64 | -.13 | -.15* | -.3.97 | -.13 |
| Prior physical activity | -.11** | -.2.89  | -.10 | -.13 | -.3.37 | -.11 | -.17*** | -.4.55 | -.15 |

Model 2
ΔF = 76.19;  
ΔR² = .31***

| Age     | -.06*      | -.1.97  | -.09 | -.09* | -.2.77 | -.13 | -.10*** | -.3.32 | -.13 |
| Prior physical activity | -.01      | -.3.8  | -.09 | -.03  | -.89   | -.11 | -.07*   | -.2.28 | -.15 |
| Avoidant coping | .60***  | 16.68   | .52 | .53*** | 14.34  | .52 | .54***  | 15.12  | .56 |
| Emotion focused coping | -.11*      | -.2.56  | -.00 | .01   | .22    | .13 | -.04    | -.1.09 | .16 |
| Problem focused coping | -.14**  | -.3.18  | .03 | -.08  | -.1.77 | .14 | .02     | .53    | .22 |
| Current physical activity | -.07*      | -.2.40  | -.16 | -.09* | -.2.75 | -.16 | -.07*   | -.2.37 | -.15 |

Model 3
ΔF = 1.67;  
ΔR² = .01

| Age     | -.06*      | -.1.96  | -.09 | -.09* | -.2.79 | -.12 | -.10*** | -.3.34 | -.13 |
| Prior physical activity | -.01      | -.2.6  | -.09 | -.02  | -.87   | .11 | -.07*   | -.2.26  | -.15 |
| Avoidant coping | .65***  | 6.95    | .52 | .62*** | 6.50   | .52 | .49***  | 5.29   | .56 |
| Emotion focused coping | .09       | .07     | -.00 | .38*** | 3.23   | .14 | .15     | 1.33   | .16 |
| Problem focused coping | -.39***  | -.3.24  | .03 | -.40*** | -.3.31 | .14 | -.16    | -.1.36  | .21 |
| Current physical activity | -.07*      | -.2.21  | -.08 | -.08* | -.2.64 | -.16 | -.07*   | -.2.39  | -.15 |
| avoidantX exercising | -.05       | -.5.4   | .47 | -.09  | -.97   | .47 | .05     | .61    | .53 |
| emotionXexercising | -.13       | -.1.14  | .01 | -.40*** | -.3.40 | .12 | -.22*   | -.1.92  | .15 |
| problemXexercising | .27*       | 2.20    | .05 | .35*  | 2.86   | .14 | .20     | 1.69   | .22 |

Note. * p ≤ .01; **p ≤ .005; ***p ≤ .001; df1 = 2, df2 = 675; Tol. > .20, and VIF < 10 indicate there is no multicollinearity among variables.
When it comes to predictors’ individual contributions, Avoidant coping was positively associated with poorer mental health outcomes (Depression $\beta = .65$, Anxiety $\beta = .62$, Stress $\beta = .49$, $p < .001$). Emotion-focused coping ($\beta = .38$, $p < .001$) in the positive direction predicted the symptoms of anxiety. Problem-focused coping was negatively associated with Depression ($\beta = -.39$, $p < .001$) and Anxiety ($\beta = -.40$, $p < .001$). A higher level of physical exercise during isolation was associated with a lower level of all measured mental health indicators (Depression and Stress $\beta = -.07$, $p < .01$, Anxiety $\beta = -.08$, $p < .01$).

There was a significant interaction between Problem-focused coping and Exercising in predicting Depression ($\beta = .27$, $p < .01$) and Anxiety ($\beta = .35$, $p < .01$). Likewise, a significant interaction was found between Emotion-focused coping and Exercising in predicting Anxiety ($\beta = -.40$, $p < .001$) and Stress ($\beta = -.22$, $p < .01$).

On the other hand, if we used Bonferroni’s adjustment to determine the highest level of statistical significance (which was $p < .006$), only Avoidant coping and Problem-focused coping would be significantly related to mental health indicators, along with the interaction between Emotion-focused coping and Exercising in predicting Anxiety (Figure 1).

**Figure 1**
The interaction of emotion-focused coping and physical activity in the prediction of anxiety
Activity Matters: Physical Exercise and Stress Coping during the 2020 COVID–19 State of Emergency

Discussion

This study aimed to examine the importance of physical activity in the context of mental health indicators in conditions of a relatively uncontrollable stress situation (i.e., lockdown and social isolation). In addition to health and economic threats, we were guided by the assumption that living in lockdown is a major lifestyle modification that can lead to psychological distress. Although the worldwide pandemic is an ongoing phenomenon at the time this paper is written, studies with which we can compare our results have already been published. When it comes to stress coping strategies, the results can be compared to the results of studies exploring different extraordinary life circumstances.

When it comes to the mental health of the respondents during the 2020 COVID–19-induced lockdown, the results of this study showed that scores achieved on mental health indicators could be ranked as normal, but that there was a significant percentage of respondents whose results could be ranked between moderate and extremely severe (e.g., 23% Anxiety, 19% Depression, and 32% Stress scores according to Lovibond & Lovibond, 1995). However, when the results were compared with a normative sample (Jovanović et al., 2014), only the result on the Stress subscale slightly exceeded the theoretical cut-off score and could be conditionally considered mild. Additionally, scores on Stress and Depression were slightly, but still statistically significantly higher than in the comparative student sample in Serbia (Jovanović et al., 2014). This result may indicate that participants were slightly emotionally affected by the emergency state and lockdown in which the examination was conducted. However, the sample in this study covered a significantly higher age range compared to the student population. Therefore, this comparison must be “taken with a grain of salt”. The student sample was used for comparison because it is a sample on which DASS–21 was validated in Serbia. However, it should be borne in mind that the student sample is certainly not fully comparable with the adult sample from this study. Furthermore, when we take into account the percentage of respondents whose scores is higher than what can be considered normal according to the norms of the scale (Lovibond & Lovibond, 1995), we cannot be certain that similar results would not be obtained in usual circumstances that cannot be considered extraordinary.

Overall, the results are not entirely in line with the expectations of mental health experts when it comes to the psychological consequences of the COVID–19 pandemic (Holmes et al., 2020; WHO, 2020). International research, conducted at the same stage of pandemic development, indicated a higher level of emotional disturbance. For example, a study with a general population sample in China during lockdown showed that more than 70% of participants reported moderate or high symptoms of various mental health issues (OCD, interpersonal sensitivity, phobias, and psychoticism) (Tian et al., 2020). A study conducted in the United Kingdom during the first six weeks of nationwide social distancing measures indicated that mean levels of depression, anxiety, and stress significantly exceeded population norms (Jia et al., 2020).
Contrary to our expectations, results of this study indicate that respondent age was negatively related to mental health indicators. It appears that the lockdown affected younger respondents more emotionally. This is in line with findings from several studies worldwide (e.g., Lai et al., 2020, Huang & Zhao, 2020). Specifically, Qiu et al. (2020) found that individuals between 18 and 30 years of age expressed the highest posttraumatic distress index scores. Some researchers explain these results by the frequent use of social media and greater exposure to a more considerable amount of information about the virus, including fake news, which may trigger stress more easily (Bao et al., 2020; Kumar & Somani, 2020). Carstensen, Shavit, and Barnes (2020) also found that older participants reported more positive and less negative emotions during the first phase of the COVID–19 pandemic in the USA. However, these authors did not consider that the reason for this was limited exposure to stressors or a lack of awareness of potential risks. These authors advocate a theory according to which older people report better emotional experiences than younger, due to life experience in which they have learned to deal with stressful events and the motivation to focus on the here– and –now instead of worrying about the future (Carstensen et al., 2020). Nevertheless, it is important to keep in mind that many people expect to start building a career and start a family during their twenties or early thirties. Hence, they can perceive the lockdown and social distancing as more stressful.

When it comes to coping mechanisms that have proven to be constructive in terms of mental health outcomes, the results are also in line with theoretical expectations. Namely, Avoidant coping mechanisms that are reflected in denial, substance abuse, and behavioral disengagement are related to poorer mental health outcomes, as confirmed in this study (Baumstarck, 2017; Carver, 1997; Eisenberg et al., 2012). On the other hand, the results of the two previous studies indicate that Emotion-focused coping can be both a constructive and a non-constructive coping mechanism, depending on the controllability of the stressor (Genc et al., 2013).

In this study, Emotion-focused coping was a predictor of higher levels of anxiety. A piece of information we do not possess but one that would be useful in discussing this result is how (un)controllable did the participants consider the state of emergency due to the pandemic to be. It would also be useful to identify specific Emotion-focused but anxiety-related strategies, given that we can find different mechanisms among strategies focused on emotions (e.g., Positive reframing and Emotional support).

On the other hand, Problem-focused coping emerged as a constructive mechanism for overcoming stress, both in this research and in most other studies (Monzani et al., 2015). This group of strategies, consisting of Planning, Instrumental Support, and Active Coping, was negatively related to anxiety and depression. Respondents who were more focused on actively managing the stressor itself in the lockdown situation were less anxious and depressed. Problem-focused coping engages individual goal-oriented behavior and puts the person in an active position in the stressful situation. The general rule that can be
deduced from the presented results is that activity, as opposed to passivity and indulgence, is an essential component of a constructive emotional response to a stressor.

As a type of health behavior, physical exercise has proven to be a useful coping strategy. It has been associated with positive mental health outcomes, including lower degrees of anxiety, depression, and stress. An interesting result of our study is that the level of physical exercise during the lockdown situation was a predictor of better mental health, regardless of how physically active the respondent was before the state of emergency was introduced. In an acute situation, physical exercise in itself seems to be a strategy for overcoming stress, which is not an unexpected finding. According to Ingledew et al., (1996), physical exercises should be included in stress coping scales due to their frequency but also positive results in stress management. Regular and continuous exercise has commonly been associated with better mental health (Chekroud et al., 2018; Jacob et al., 2020). However, in our study, the organization of physical activity during the lockdown was a significant coping strategy even when the level of earlier physical activity was kept under control. After Bonferroni’s correction of significance levels in the research, physical exercise did lose importance, but it still acted as a moderator in the relationship between Emotion-focused coping and anxiety. Physical exercising in interaction with Emotion-focused coping was associated with a lower level of anxiety. The importance of physical exercise in mental health protection during the 2020 COVID–19 social distancing measures has also been confirmed in recent studies (e.g., Jacob et al., 2020). In order to devise more concrete and informative recommendations in this field, it is necessary to further examine what type and intensity of physical exercise (in terms of effort) contributes most to positive effects on mental health.

The main advantage of this research is that it represents a current study on the way people react to and overcome this situation of vulnerability that has affected the whole world and can affect various aspects of an individual’s life. It offers useful answers to the question of what we as individuals can do to protect our mental health. The main limitation of this study is the fact that these data should be monitored, checked, and compared with data obtained at different stages of the pandemic, which can have different impacts on an individual’s response.

We can conclude that in the first phase of the COVID–19 pandemic in Serbia, there were no significant increases in anxiety, depression, and stress compared to the norm. A slightly higher score on the stress scale was certainly expected in the emergency state in which the examination was performed. The results of previous studies in the field of stress coping mechanisms were confirmed in our study. Therefore, classical knowledge in this area can be considered applicable in the crisis caused by the COVID–19 pandemic. Physical activity can be considered an additional adaptive coping strategy, as it predicts better outcomes in the context of mental health during the 2020 COVID–19-induced lockdown.
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Aktivnost je važna: fizičko vežbanje i prevladavanje stresa za vreme vanrednog stanja izazvanog COVID–19 pandemijom 2020. godine

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Novije studije su pokazale da je socijalna izolacija zbog pandemije COVID–19 značajno uticala na mentalno i fizičko zdravlje ljudi širom sveta. Međutim, ostaje nepoznato da li fizička aktivnost može poboljšati mentalno zdravlje u vreme vanrednog stanja. Cilj ove studije je da se ispita značaj fizičkog vežbanja i strategija prevladavanja stresa (prevladavanje usmereno na problem, emocije i izbegavanje) u odnosu na indikatore mentalnog zdravlja (depresiju, anksioznost i neodređeni stres) u uslovima socijalne izolacije tokom karantina usled pandemije COVID–19 u Srbiji. Uzorak se sastojao od 680 odraslih osoba (66% žena) prosečne starosti 35.91 godina (SD = 12.45). Rezultati ukazuju na značajnu povezanost između vežbanja i niže stresne reakcije i potvrđuju već poznatu korisnost strategija prevladavanja stresa usmerenih na problem. Izbegavanje i prevladavanje usmereno na emocije su bili povezani sa lošijim ishodima po mentalno zdravlje. Međutim, kao moderator, fizička aktivnost smanjuje nivo anksioznosti kod osoba koje su skloni prevladavanju usmerenom na emocije.

Ključne reči: fizička aktivnost, COVID–19-karantin, prevladavanje stresa, mentalno zdravlje

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