

ORIGINAL SCIENTIFIC PAPER

Gender Differences in Physical Activity, Physical Fitness and Well-being of Students During The Lock-Down Due to Covid-19 Pandemic

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Abstract

Restricting movement for the population and the impact of preventative measures due to the COVID-19 pandemic have spurred research interests in analyzing the healthy lifestyle of the student population. The aim of the study was to examine gender differences between students in physical activity, and the perceptions of physical fitness and well-being during lock-down due to COVID-19. The sample consisted of male (n=268; 25.9%; age 22.56±2.12) and female students (n=768; 74.1%; age 22.12±1.73) at the University of Sarajevo (UNSA). The questionnaire included questions and scales constructed to measure: physical activity, physical fitness, and the acute effects on well-being. χ^2 independence test were used to determine gender differences ($p<0.05$). Prior to the declaration of the COVID-19, there was a significant difference in the level of regular physical activity between male and female students at UNSA ($p<0.01$). The data indicated that at that time 65% of male students were regularly physically active, while 45% of female students had regular physical activity. During the lock-down measures at UNSA: 46% of male and 40% of female students reported being regularly physically active and no significant differences were found in relation to gender ($p>0.05$); 65% of male and 58% of female students reported a decline in physical fitness and significant gender differences were found ($p<0.05$). After exercising male students reported better concentration and mood, more energy and motivation, and less nervousness in the range of 62–79%, while female students reported better concentration and mood, more energy and motivation, and less nervousness in the range of 62–81%. No significant differences were found in the physical activity acute effects on students' well-being in relation to gender ($p>0.05$). Although gender differences in physical activity disappeared during the early phase of COVID-19 and lockdown measures, a more pronounced decrease in physical fitness was present in female students. The reported physical activity had equally positive acute effects on students' well-being.

Keywords: Lock-Down, Active Lifestyle, Physical Exercise

Introduction

Insufficient physical activity is a serious health concern among university students (Irwin, 2004). In different countries, some research has shown that male students were often more physically active than female students (Olfert, et al. 2019; Iglesias López,

Cuesta Santa Teresa, & Sáez Crespo, 2014; J. Bergier, B. Bergier, & Tsos, 2016; Bergier et al. 2018). The active lifestyle is a set of behaviors, actions or habits that make a unified whole (Sharkey & Gaskill, 2007). Also, some results indicate that men and women respond differently to PA (Hands, Larkin, Cantell, & Rose, 2016).

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At the start of the COVID-19 pandemic in Bosnia and Herzegovina in March 2020, the entity governments issued an order to close higher education institutions to prevent the spread of the new coronavirus among the student population, while the educational process continued through distance learning. Such restrictive measures of lock-down referred to the ban on group gatherings of people and the closure of all sports or fitness centers, sometimes with full lock-down measures during the weekends which referred to the restriction on leaving home. The COVID-19 pandemic has a strong impact on all aspects of society, including physical and mental health (Holmes et al. 2020; Ahorsu, Imani, Saffari, Griffiths, & Pakpour, 2020). The average level of physical activity in men and women was significantly reduced during the early phase of the Covid-19 pandemic (Atiković et al. 2020). Adverse effects of sedentary behavior can be partially prevented by any reduction in inactivity and increase in physical activity, even below the recommended guidelines, and thus achieve significant health benefits (Hall, Laddu, Phillips, Lavie, & Arena, 2021). The frequency of physical activity is linearly related to the most dimensions of well-being (Peralta et al. 2021).

It can be assumed that collective understanding will develop response to the COVID-19 pandemic, which is in the interest of both personal and social health. In such times of crisis, whether real or perceived, it is also important to point out all the benefits in empowering people to actively maintain their health. At the same time, physical activity, physical fitness and well-being should be in focus. Restricting movement for the population and the impact of preventative measures due to the coronavirus pandemic (COVID-19) have spurred research interests in analyzing the active lifestyle of the student population. The aim of the study was to examine gender differences between students in physical activity, and the perceptions of physical fitness and well-being during lock-down due to COVID-19.

Methods

The sample consisted of male students ($n=268$; 25.9%; age 22.56 ± 2.12) and female students ($n=768$; 74.1%; age 22.12 ± 1.73) from the University of Sarajevo (UNSA), Bosnia and Herzegovina. The sample of respondents was selected by random selection. During this research, students attended the I, II and III cycle of studies.

The questionnaire used in the research is the work of professors from the Faculty of Sport and Physical Education, University

of Montenegro. It was adapted to the circumstances caused by the COVID-19 pandemic. The questions were related to: the implementation of regular physical activity (in the period before the Covid-19 pandemic and in the period during the lock-down measures); the perception of declining physical fitness, and the perception of well-being after physical exercise during lock-down measures (better concentration, better mood, less nervousness, more energy, and more motivation). The scale of perception was used in the dichotomous format of the answer (the answer "Yes" is scored with 1; "No" with 0). Respondents completed questionnaires using the Google Forms (from May 5th to 24th 2020), and the results were automatically exported to a Google spreadsheet. The link was shared on the website by all faculties of the UNSA. The answers to the questions referred to the period of partial closure in which limited movement was allowed without group gatherings, as well as complete closure sometimes during the weekend, which referred to the restriction of leaving home.

Computer data entry and processing of survey questionnaires was realized using the office program Excel and SPSS 21 (Chicago, IL, USA). The responses are presented in percentage values (%) and in relation to gender. Pearson χ^2 independence test was used to determine gender differences. The level of statistical significance was set at $p < 0.05$.

Results

Prior to the declaration of the COVID-19, there was a significant difference in the level of regular physical activity between male and female students at UNSA ($p < .01$). The data indicated that at that time 65% of male students were regularly physically active, while 45% of female students had regular physical activity. During the lock-down measures at UNSA: 46% of male students and 40% of female students reported being regularly physically active and no significant differences were found in relation to gender ($p > .05$); 65% of male students and 58% of female students reported a decline in physical fitness and significant gender differences were found ($p < .05$) (Table 1). After exercising male students reported better concentration and mood, more energy and motivation, and less nervousness in the range of 62–79%, while female students reported better concentration and mood, more energy and motivation, and less nervousness in the range of 62–81%. No significant differences were found in the physical activity acute effects on students' well-being in relation to gender ($p > .05$) (Table 2).

Table 1. Gender differences in regular physical activity and physical fitness of students

	% Male	% Female	χ^2	Sig.
I practiced regularly physical activity before COVID-19	65.3	45.4	31.335	.000**
I practiced regularly physical activity during lock-down	46.4	40.5	2.349	.125
I feel a weakening of physical fitness during lock-down	58.1	65.5	4.739	.029*

Legend: % - percentage values; χ^2 - Pearson Chi-Square test; Sig. - statistically significant; ** $p < 0.01$; * $p < 0.05$.

Table 2. The perception of well-being during lock-down

After physical activity, I feel more:	% Male students	% Female students	χ^2	Sig.
Better concentration	62.6	62.6	3.421	.064
Better mood	77.4	80.8	.038	.846
Less nervousness	78.7	77.9	.563	.453
More energy	65.4	62.1	2.582	.108
More motivation	64.9	64.9	.459	.498

Legend: % - percentage values; χ^2 - Pearson Chi-Square test; Sig. - statistically significant; ** $p < 0.01$; * $p < 0.05$.

Discussion

There are legitimate concerns that the health crisis caused by the COVID-19 pandemic could negatively effect on students' physical

activity, physical fitness and well-being regardless of gender. The total physical activity in the student population may indicate its reduced level during the crisis period of the COVID-19 pandemic, that

concerned partial closure in which limited movement was allowed without group gatherings, as well as complete closure related to the restrictions on leaving home. It is understandable that the declining trend of physical activity is accompanied by a decline in physical fitness. However, female students appear to have a more pronounced problem with maintaining a sufficient level of physical fitness.

The trend of decreasing physical activity levels during COVID-19 is understandably given that sports and leisure facilities were closed and physical activity were suspended to prevent the spread of the new coronavirus. The early phase of the pandemic and measures to restrict movement were a surprising factor in the lives of students.

There is a reasonable assumption that physical activity may be useful as a protective mechanism against the risk of developing a possible negative well-being during such a crisis. However, such claims need to be further investigated. There is knowledge that moderate-intensity physical exercise improves mental function, which is not the case with high-intensity exercises (Kashihara, Maruyama, Murota, & Nakahara, 2009). It is already known that pandemics can lead to increased stress, anxiety, worry, and paranoia over potential infection (Roy et al. 2020). The same, combined with a sedentary lifestyle and poor eating habits, can become a more serious form of stress that can cause negative changes and thus jeopardize the normal functioning of the human body (Panahi & Tremblay, 2018). Also, sports and physical activities are the most important for combining the problem of weight gain (Montesano & Mazzeo, 2019). Positive acute effects on well-being justify the strong potential of physical activity in various life situations.

In all future similar crisis situations, it is necessary to find alternative ways of acting in the direction of raising the awareness of the student population with the aim of a physically active lifestyle. Given that this research was conducted during a very early phase of movement restrictions, the population certainly found themselves in the conditions of real and perceived danger. Socially responsible institutions tried to make correct but also sometimes very rigorous decisions. In every time of crisis, it is necessary to go through a period of getting used to new living and working conditions. After accepting the new conditions of life and action, adaptation and active action may follow. Specific practical recommendations may be that in similar situations of limited movement, it is important to remain physically active or to become more physically active, which is important regardless of gender.

The limitation of this study was the non-standardized questionnaire, which was improvised due to the urgency of the research in order to be able to respond quickly. Also, information of the type, duration, and intensity of physical activity was not available in this study. In future similar emergencies, it is possible to form a crisis group at the university level, formed by experts in the field of sports and physical education, and which would be ready to respond effectively and offer the best solutions for exercising and maintaining physical fitness.

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Conflict of Interest

The authors declare that there is no conflicts of interest.

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