

Perception Of Physical Exercise During The Covid-19 Pandemic Period

Ernest Šabić¹, Nijaz Skender¹, Natalija Kurtović¹, Milan Nešić²,

¹ (University of Bihać, Faculty of Pedagogy, Bosnia and Herzegovina)

² (University Educons, Faculty of Sport and Tourism Novi Sad, Serbia)

Absrtact:

The current circumstances of people's lives on a global scale have drastically changed with the appearance of the Covid-19 pandemic. One of the areas that has faced changes more intensively is regular physical exercise. The already clearly recognized trend of a steady decline in physical activity at all ages intensified with the advent of the pandemic. Recent research conducted in the region, as well as in BiH, shows that a larger number of people, who were physically active before the pandemic, have stagnated or significantly reduced physical activity in general, and physical exercise in particular. The research is conceived as an empirical non-experimental study, with the aim of identifying the perception of physical exercise during the pandemic in people who occasionally and / or regularly engage in some of the organized forms of sports recreation in their place of residence. The sample included 233 respondents, both gender (m = 102; f = 131) from the area of Una-Sana Canton who are regular or occasional users of organized physical exercise services in sports and recreational organizations in this area. The results showed that in most people there was a decrease in the amount of physical exercise, which had consequences for their perception of quality of life.

Key Word: physical exercise, pandemic, Covid-19

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I. Introduction

Contemporary scientific views, as well as experiences from sports / sports-recreational practice, have clearly positioned the determination of the positive impact of physical activities on the bio-psycho-social aspects of human health. Special physical exercise, as an articulated and organizationally determined form of physical activities. Thus, the context of the positive impact of engaging in sports and recreational activities on human health today can be considered an axiom¹². Maintaining health, which promotes the concept of a healthy lifestyle, includes regular physical activity.

Physical activity is inevitably linked to the notion of quality of life. Today's prevailing attitudes treat this concept as a multidimensional (comprehensive) construct of people's urban existence³. Through the emphasized complexity, the synergistic relationship of determining factors of quality of life (physical health, psychological state, social interaction, personal beliefs, religious affiliations, levels of independence and autonomy in social functioning, etc.) is brought to the fore²⁵. Which means that the quality of life of an individual depends on the interactivity of the mentioned existential factors. In this sense, the World Health Organization²⁷ defined at the end of the twentieth century that the concept of quality of life is interpreted as a personal perception of individual life position, determined through the context of cultural and value system in which the individual lives (in relation to accepted goals, expectations, standards and interests).

The global world has faced a global health crisis in the past two years. A pandemic caused by the SARS-CoV.2 virus (Covid-19) was declared by the World Health Organization on March 11, 2020²⁹. With its appearance, as well as the speed of its spread, it generated a serious threat to the entire humanity. Primarily in terms of health, but also in the context of all other aspects of life (economy, social functioning, etc.). Currently, there is no state or state organization in the world that has not been affected by some of the influences of Covid-19 (economic, social, humanitarian, health, environmental, security, political, etc.)¹³. In this respect, the world community has faced a specific security crisis that poses a real threat to the survival and functioning of almost all countries.

Primarily in terms of declining physical abilities as a result of a significant decrease in movement and physical activity in general. Also, there has been an increase in difficulties that can be classified in the sphere of psychological functioning of people (increased distress, anxiety, fears, dissatisfaction, increased aggression, etc.)¹⁷. In addition to these negative consequences, there is an increased reduction in social functioning

(loneliness, job uncertainty, reduced possibility of direct social interaction, replacement of real life with virtual, etc.)¹⁶.

Regular physical activity / exercise during the pandemic period experienced a significant reduction in most people. This has greatly reduced their usual benefits and effects. Among other things, the measures to prevent the spread of the pandemic in the population, where the restriction of human movement and isolation (so-called lockdown) are predominant, contributed the most to that. As a consequence, it created negative feedback and reduced satisfaction with the quality of life of the largest part of the population. Especially for those who nurture regular physical exercise as an integral part of lifestyle and healthy living habits.

In that context, this study also aimed to determine the individual attitude towards physical activities of people in the urban environment during the pandemic period.

II. Methods

The research was conceived as an empirical non-experimental study. The goal was to determine the perception of physical exercise during the pandemic in people who occasionally and / or regularly engage in some of the organized forms of sports recreation in their place of residence. The sample of respondents included a total of 233 people, both gender (M = 102 / 43.8%; F = 131 / 56.2%) from the area of Una-Sana Canton who are regular or occasional users of organized physical exercise services in sports and recreational organizations in this area. Regarding the age structure, the respondents were subsampled through four strata using the appropriate statistical procedure (Visual Binning): (1) from 20-30 years (N = 59 / 25.3%), (2) from 31-40 years (N = 65 / 27.9%), (3) 41-49 years (N = 57 / 24.5%) and (4) 50 and older (52 / 22.3%).

A questionnaire used in a similar research in the area of the city of Banja Luka was used to collect empirical material¹². Its construct is characterized by two parts: (1) a set of independent variables that identified individual personal characteristics of respondents (gender, age, working status), as well as item indicators (the first set of dependent variables) that assessed some characteristics of physical exercise that correspond to the individual's experience of quality of life; and (2) a set of dependent variables created in the form of a five-point six-item ordinal scale by which respondents performed a self-assessment of certain domains of quality of life associated with physical activity.

All empirical data were processed by adequate statistical procedures (descriptive and comparative). The frequency distribution (absolute and relative) was calculated for variables that expressed the property of nominal item indicators. For variables that were predominantly arranged in the form of ordinal scalar quantities, the arithmetic mean was calculated. This approach enabled the application of appropriate comparative statistical procedures, primarily contingency analysis (chi square test) and one-factor analysis of variance (ANOVA). Statistical processing was performed using the application program SPSS.21, while statistical inferences were performed with a significance level of 0.05 ($p < .05$).

III. Results

The analysis of the set of independent variables indicates that the research sample is predominantly composed of respondents who, in relation to the age structure, belong to the working part of the population. The chronological age range ranged from 20 to 65 age, with the majority of respondents (81.5%) being employed. Regarding the distribution in the subsample classified by gender criteria, no statistically significant differences were observed (Table 1). However, in the context of age, there is a certain difference in the distribution among subsamples, where it is noticeable that among the employed people is dominated by respondents who are in the so-called. "Best years" (between 30 and 50 = 48.7%), while the unemployed are observed under the age of 30 (12.4%) (Table 2).

Table 1: Characteristics of the sample of respondents - working status and gender

Gender	Working status			Σ
	employed	unemployed	pensioner	
men	84	15	3	102
	36,1%	6,4%	1,3%	43,8%
women	106	23	2	131
	45,5%	9,9%	0,9%	56,2%
Σ	190	38	5	233
	81,5%	16,3%	2,1%	100,0%

$Chi = 0,833$ $df = 2$ $Sig. = 0,660$

Table 2: Characteristics of the sample of respondents - working status and age

Gender	Working status			Σ
	employed	unemployed	pensioner	
20-30	30	29	0	59
	12,9%	12,4%	0,0%	25,3%
31-40	56	9	0	65
	24,0%	3,9%	0,0%	27,9%
41-49	57	0	0	57
	24,5%	0,0%	0,0%	24,5%
Over 50	47	0	5	52
	20,2%	0,0%	2,1%	22,3%
Σ	190	38	5	233
	81,5%	16,3%	2,1%	100,0%

Chi = 86,787 df = 6 Sig. = 0,000

As in this case we are talking about the part of the population that can be said to be most intensively exposed to various influences of the work and living environment, it was expedient to determine their attitude towards physical exercise. This content of life habits, in the context of our research, was associated with the perception of general quality of life. It was noticed that the majority of respondents (54.5%) before the outbreak of the Covid-19 pandemic occasionally practiced some form of physical exercise, which is in line with the characteristics of the sample (persons who are users of sports and recreational programs in the place of residence). About a third of them exercised 2-3 times a week (33.9%), while only 11.6% of the persons included in the research sample were regularly physically active through the process of practicing sports and recreational programs. In the context of gender differentiation, it was identified that women (40.8%) dominated among occasional exercisers, while regular physical exercise (as a dominant factor in healthy living habits) mostly characterized male respondents (9%) (Table 3). This distribution of results also showed the statistical significance of the differences (Sig. = 0.000).

Table 3: Attitude towards physical exercise before a pandemic - gender differentiation

Gender	Attitude towards physical exercise before a pandemic			Σ
	periodically	2-3 times weekly	everyday	
men	32	49	21	102
	13,7%	21,0%	9,0%	43,8%
women	95	30	6	131
	40,8%	12,9%	2,6%	56,2%
Σ	127	79	27	233
	54,5%	33,9%	11,6%	100,0%

Chi = 42,510 df = 2 Sig. = 0,000

In the light of the previous observation, the results related to the individual perception of personal attitude towards sports recreation, ie physical exercise, as a factor of personal lifestyle, can also be interpreted. It is noticed that the majority of respondents perceive themselves as a moderate recreational athlete in good physical shape (63.1%). When people who consider themselves active recreationists in excellent physical shape (15.5%) are added to this, it can be stated that the majority of respondents recognize physical exercise as a useful content of everyday life habits. Similarly, as a recognizable factor in the quality of life. There is a very small number of active athletes among the respondents (2.1%), which was expected (considering that the participants in competitive sports satisfy their needs for physical exercises at a much higher and more intensive level, within sports clubs). Gender of respondents in this context proved to be a significant determinant of differentiation in distribution. Passive sports fans are dominated by females (13.3%), as well as moderate recreational sports (38.2%). Men are more represented in the part of the sample that considers themselves very

active recreational athletes in excellent physical shape (10.7%). The active athletes in the sample were exclusively men. This distribution of results also showed the statistical significance of the differences (Sig. = 0.000) (Table 4).

Table 4: Perception of personal attitude towards physical exercise / recreation – gender

Gender	Perception of personal attitude towards physical exercise				Σ
	passive sports / recreation lover	moderate recreationalist of solid physical condition	a strong recreational athlete in excellent physical shape	active sportist	
men	14 6,0%	58 24,9%	25 10,7%	5 2,1%	102 43,8%
women	31 13,3%	89 38,2%	11 4,7%	0 0,0%	131 56,2%
Σ	45 19,3%	147 63,1%	36 15,5%	5 2,1%	233 100,0%

Chi = 22,075 df = 3 Sig. = 0,000

The period of the pandemic had an impact on the attitude of the respondents towards physical exercise and the exercise, until then, of the accepted habits of sports recreation. It is noticed that in most of them (64%) there was a decrease in the volume of physical exercise (recreation) during the pandemic period. Of that, a larger number of those who significantly reduced exercise (38.2%) compared to respondents who had a smaller decline in the exercise of recreational content (25.8%). In 36.1% of the entities in the sample, there were no changes compared to the period before the pandemic. In this context, gender differentiation has been shown to be a significant difference factor (Table 5). Also, no statistically significant differences were observed in relation to the characteristics of subsampling by age criteria (Table 6).

Table 5: Attitude towards physical exercise during a pandemic - gender differentiation

Gender	Current attitude towards physical exercise			Σ
	significantly reduced exercise	slightly reduced exercise	nothing has changed since the earlier period	
men	32 13,7%	29 12,4%	41 17,6%	102 43,8%
women	57 24,5%	31 13,3%	43 18,5%	131 56,2%
Σ	89 38,2%	60 25,8%	84 36,1%	233 100,0%

Chi = 3,613 df = 2 Sig. = 0,164

Table 6: Attitude towards physical exercise during a pandemic - gender differentiation

Years of life	Current attitude towards physical exercise			Σ
	significantly reduced exercise	slightly reduced exercise	nothing has changed since the earlier period	
20-30	23 9,9%	13 5,6%	23 9,9%	59 25,3%
31-40	23 9,9%	18 7,7%	24 10,3%	65 27,9%
41-49	17 7,3%	18 7,7%	22 9,4%	57 24,5%
over 50	26 11,2%	11 4,7%	15 6,4%	52 22,3%
Σ	89	60	84	233

Perception Of Physical Exercise During The Covid-19 Pandemic Period

38,2%	25,8%	36,1%	100,0%
<i>Chi = 5,643 df = 6 Sig. = 0,464</i>			

Previous analyzes have shown that the time of the pandemic affected the changes in the approach to physical exercise / recreation in the respondents. As it is about people who have the contents of sports recreation, to a greater or lesser extent, incorporated into their lifestyle, it was necessary to determine which contents of physical activities dominate in the pandemic period. It is noticed that a smaller number of respondents (13.3%) experienced a complete reduction in physical exercise (stopped exercising). Those who continued with regular physical activities were mainly oriented towards recreational walking (43.3%), ie walking as the content of a sports and recreational program (18%). Also, a smaller number of respondents use exercise programs in the gym (14.6%), when the conditions of anti-pandemic measures allow it, while 10.7% of respondents exercise at home (using instructions from the Internet). In this context, too, the gender of the respondents proved to be a significant determinant of differentiation in the sample, with an identified statistical difference (Sig. = 0.000). Among the respondents who predominantly practice walking and / or walking, most are women (39.5%), as well as exercising at home (6.4%). Men are more represented in the use of programs in gyms (11.6%) (Table 7).

Table 7: Current contents of physical activities - gender differentiation

Gender	Current forms of physical activity / recreation					Σ
	Doesn't exercise at all	gym/fitness	mostly walking	exclusively walking	exercising at home	
men	14 6,0%	27 11,6%	34 14,6%	17 7,3%	10 4,3%	102 43,8%
women	17 7,3%	7 3,0%	67 28,8%	25 10,7%	15 6,4%	131 56,2%
Σ	31 13,3%	34 14,6%	101 43,3%	42 18,0%	25 10,7%	233 100,0%

Chi = 22,754 df = 4 Sig. = 0,000

Identification of the perception of physical exercise in the context of self - assessment of quality of life was performed using a mini scale. Arranged as a six-item five-level self-assessment scale, based on a number of domains of perceptions of quality of life (PQL) scale¹⁰⁻¹¹⁻¹² allowed respondents to evaluate individual indicators that contextually belong to the domains of quality life, and are related to determinants that correspond to regular physical activity / recreation. The intensity of the estimation value was determined by calculating the scalar mean. The results show that respondents moderately positively value their engagement in physical exercise / recreation, which can be explained by the relative decrease in satisfaction with the quality of life during a pandemic. It is noticeable that in this context, lower scalar values are observed in females in almost all items. In this sense, it can be assumed that women were more affected by the pandemic period, given that they assess their quality of life and, in connection with it, the quality of their physical activities with lower scores. Differences, at the level of statistical significance, are observed in the following items: the level of daily physical activities (Sig. =, 001) and the regularity of sports and recreational activities (Sig. =, 000) (Table 8).

Table 8: Physical exercise in the context of quality of life perception – gender

Item scale indicator		Mean	F	Sig.
	M	3,15		
1) Level of daily physical activity	W	2,76	10,967	0,001
	Σ	2,93		
	M	2,81		
2) Regularity of engaging in sports and recreational activities	W	2,16	19,839	0,000
	Σ	2,45		

3) Sleep and rest	M	3,47	1,425	0,207
	W	3,31		
	Σ	3,38		
4) Quality and regularity of daily meals	M	3,67	0,890	0,983
	W	3,66		
	Σ	3,67		
5) General work capacity	M	3,64	0,857	0,442
	W	3,68		
	Σ	3,33		
6) Opportunities for recreation in the city	yes	3,33	0,457	0,500
	no	3,23		
	Σ	3,27		
Scale as a whole:		3,23	8,117	0,005

One Way ANOVA

IV. Discussion

The SARS.CoV-2 virus, the cause of the Covid 19 pandemic, is classified as a group of respiratory viruses (CoV). Its basic characteristic is that it attacks the human respiratory system as intensively as possible. Symptoms can vary from milder forms (close to the common cold) to severe cases of pneumonia ²⁰. Recent research shows that health complications do not stop only at the respiratory system, but also occur in other organ systems of diseased people (heart, blood vessels, kidneys, digestive tract, etc.) ^{18 · 26}. Although a fully effective cure for this disease has not yet been identified, and there is no single standardized medical protocol for prevention and treatment, high-safety medical science is of the view that increased risk factors for severe disease may consider: (a) the presence of chronic diseases and (b) the age over 65 years ¹⁵. This does not mean that severe forms of Covid-19 cannot affect younger people ^{8 · 1}.

Different modalities of treatment of this disease certainly had an impact on the quality of life of people during the pandemic. One of the most widely used is the recommendation of strict rest and a drastic reduction in physical activity. In a time interval of at least 14 days (in some treatment models up to 28 days), consequently, potential threats were created to reduce the ability of the organism of patients to resist some other viral infections. Which was reflected in an increased risk of weakening other important body systems (immune, respiratory, cardiovascular, musculoskeletal, etc.) ^{9 · 6}. Restrictions on movement and social contacts have significantly affected the feeling of declining quality of life in most people.

New circumstances have drastically changed people's lives on a global scale, with the emergence of the Covid-19 pandemic. One of the areas that has more intensely "felt" these changes are physical activities, and especially physical exercise (as an articulated, organizationally determined and time-framed physical activity). As the trend of constant decline in physical activity at all ages has been noticed in recent decades ^{22 · 23}, life under a pandemic has intensified this problem even more. Some pre-pandemic studies ²¹, as well as data from the World Health Organization ²⁸, show a trend of high physical inactivity in a number of countries in the Eastern European region (one in five adults is included in the small or no physical activity). Also, in EU countries, two thirds of the adult population does not reach the recommended level of physical activity (on average, only 31% of people meet the minimum criteria for physical activity that can be considered regular). This trend is even more pronounced during the pandemic period. Recent research conducted in the region, as well as Bosnia and Herzegovina ^{2 · 13 · 24} shows that a large number of people who were physically active before the pandemic, stagnated or a significant reduction in physical activity in general, and physical exercise in particular. Which proved to be consistent in our research as well. They are predominantly reflected in the appearance of the stress syndrome (confusion, feelings of loneliness, boredom, anger and aggression, etc.). It was also noticed that the number of injuries increases after the continuation of regular physical exercise in the post-quarantine period (especially in athletes, but also in active recreationists) ¹². Such findings unequivocally support the well-known views on the importance of regular and continuous physical activity. In the pandemic, and especially in the post-pandemic period, regular physical activity, and especially continuous physical exercise, is a significant means of mitigating its negative effects on human health ⁴. In this context, they can be a specific and useful quality of life corrector ^{19 · 14 · 7}.

V. Conclusions

Physical activity is one of the determinants of quality of life. Especially the segment that refers to regular physical exercise that is structurally incorporated into the concept of active and healthy lifestyle. Persons who have recognized the benefits of regular sports and / or sports and recreational activities, and incorporated them into their way of life, can be considered a responsible part of the population. Unfortunately, they make up a smaller part of the population, which is also the case in the Una-Sana Canton. It is especially important to emphasize this issue when it comes to people aged 30 to 60, because they are considered a predominantly active part of society, and as such are emphasized as carriers of general economic and social stability in a particular environment.

In that sense, understanding the internal factors that encourage people to participate in sports and recreational activities and programs, so to exercise regularly, can be a significant factor in promoting and promoting a healthy lifestyle. It is known that in people, with increasing age, there is a tendency to stop playing sports and / or reduce the activities of sports and recreational nature. Therefore, it is very important, through various organizational and marketing activities, public promotion, as well as research activities, to provide continuous encouragement among the population to engage in regular physical exercise. Especially among middle-aged and elderly people. Sports and recreational programs, as a form of regular physical exercise, are an important segment of a healthy lifestyle that are, among other benefits, a strong preventive, but also an improving factor in maintaining health and raising general working ability. Regular and systematic practice of various sports and recreational programs, especially in an unparalleled living and working environment, creates conditions for a positive impact on several dimensions of quality of life (physical, psychological, social, economic, etc.).

The constant "struggle" of the kinesiology profession, aimed at the affirmation of sports recreation as an indispensable part of a healthy lifestyle, was significantly disrupted by the outbreak of the Covid-19 pandemic. For the already relatively small part of the population that regularly engages in physical exercise, as well as for all other people, the period of the pandemic (which has been going on for too long, with a tendency to continue to spread) has left visible consequences. In general, there is a marked decrease in physical activity of people, especially physical exercise, in people of both gender. Therefore, the need to identify current trends in physical exercise / recreation of citizens (as a whole and / or some part of it) is a very important professional and scientific issue, especially in periods when the dynamics of the normal functioning of the social environment is disturbed.

In the research conducted in the Una-Sana Canton, during the period of active presence of the Covid-19 virus pandemic, the determination was in the context of individual assessment / self-assessment of some aspects of physical exercise / recreation related to general quality of life. An empirical non-experimental study was conducted on a sample of 233 respondents of both gender, whose stratification was based on the fact that they are regular or occasional users of organized physical exercise services in sports and recreational organizations in this area. The goal was determined through the identification of the perception of physical exercise during the pandemic in persons who occasionally and / or regularly engage in some of the organized forms of sports recreation in their place of residence. The results showed that there is a declining trend, until then regular, physical exercise in their place of residence compared to the period before the pandemic. It was also noticed that there was a relative change in the content of physical activities, which was conditioned, first of all, by the anti-pandemic measures. In this period, walking, ie recreational walking, was differentiated as the dominant content of physical activity. There is also a trend towards moving regular physical exercise towards occasional exercise (1-2 times a week). In this context, it has been found that the attitude towards exercise moves in the relations of significant or smaller reduction of the volume in relation to the period before the pandemic. When it comes to the perception of general quality of life, it was found that the respondents have a lower level of satisfaction with the indicators - the level of daily physical activity and regularity of sports and recreational activities, while the other observed domains show the intensity of moderately positive perception.

Based on the above, it can be concluded that this study contributed to the confirmation of the negative impact of the pandemic caused by the Covid-19 virus on human life, where the area of Una-Sana Canton is no exception. Therefore, more intensive emphasis on the value of physical exercise, finding and affirmation of new modalities of application of sports and recreational content in the population (especially in the working population) should be one of the priority tasks, both practitioners and researchers in the field of kinesiology in the future. The results of this study may be the basis for further similar research.

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Ernest Šabić, et. al. "Perception Of Physical Exercise During The Covid-19 Pandemic Period." *IOSR Journal of Sports and Physical Education (IOSR-JSPE)*, 8(4) (2021): 45-52.