DOI 10.26773/smj.220618

SportMont

ORIGINAL SCIENTIFIC PAPER

Establishing Levels of Perceived Benefits and Barriers from Exercising By Female Students at University of "Ss. Cyril & Methodius" – Skopje

Armend Kastrati[1], Seryozha Gontarev[2], Nazrije Gashi[1], Georgi Georgiev[2]

[1]University of Pristina "Hasan Pristina", Prishtina, Republic of Kosovo, [2]Ss. Cyril and Methodius University, Faculty of Physical Education, Sport and Health, Skopje, Republic of North Macedonia

Abstract

Many individuals are not engaged in sufficient physical activity due to low perceived benefits and high perceived barriers to exercise. Given the increasing incidence of obesity and obesity-related health disorders, this topic requires further exploration. The research goal was to establish what factors, according to students' perceptions, appear as the greatest benefits from and heaviest barriers for exercising, as well as establish the correlation between these perceived benefits and barriers, and the level of physical activity. Exercise Benefits/Barriers Scale was used to assess perceived benefits and barrier intensities to exercise in 514 female university students (mean age 19.3 years, SD=1.06), taken from several faculties at the University of "Ss. Cyril and Methodius" in Skopje. The research results show that the female respondents who study at the university perceive much more benefits than barriers to exercising. The calculated relation of benefits/barriers with this sample presents 1.39. The observed highest benefit that the female respondents have perceived is the "psychological benefit", followed by the advantage related to the improved physical performance, improvement of life quality, social interaction, and health prevention. Physical tension and lack of time were graded considerably higher against the other two subscales of assessing the perceived barriers to exercising. The respondents with high physical activity have significantly higher results in the scales and subscales of assessing the perceived benefits and lower results in the scales and subscales of assessing the perceived barriers to exercising than those with a moderate and low level of physical activity. The implications of the research in elaborating the strategies and educative programs for promoting physical activity show the importance of increasing the relation benefits/barriers with the female respondents. The applied interventions should help female students to overcome the feelings of discomfort of physical tension during exercising (reducing the perceived barriers) and to emphasize health and other benefits of regular exercising (increasing the expected benefits).

Keywords: *physical activity, female students, motivation, benefits, obstacles, healthy behavior*

Introduction

Physical activity is a complex behavior that is influenced by several internal and external factors such as socio-cultural, psycho-cognitive, and physical as well as social environment of the person. Explaining how factors influence the changes in behavior is crucial for elaborating interventions, strategies, and educative programs which will contribute to increasing the level of physical activity among young people (Sallis et al., 2000).

So far, the long-term success of strategies for increasing the physical activity with the female population has not been reached, and, to develop effective health strategies, an additional examination is required about the female motives for physical activity and the challenges they face during they try to stay active (Zunft et al., 1999). In this context, the per-

Correspondence:

S. Gontarev
Ss. Cyril and Methodius University, Skopje, Faculty of Physical Education, Sport, and Health, Str. Dimce Mircev no.3, 1000 Skopje, Republic of North Macedonia
E-mail: gontarevserjoza@gmail.com

ceived benefits and obstacles appear as important mediators in changing physical activity as a complex behavior (Nahas, Goldfine, & Collins, 2003).

Although the former research work suggests that the perceived barriers are essential in predicting health behavior (Janz & Becker, 1984), the later studies of El. Ansari and Phillips (2004) suggest that this issue is more complex, implying the relation of the perceived barriers and benefits as a better predictor ofthe direction which the behavior would take. Further, it should be taken into consideration that the psycho-social factors such as self-efficacy, demographic characteristics, age, the pressure on the individual from his/her peers, and some other factors, such as the knowledge, also play important roles in engaging and sticking to the interventions for changing the physical activity as a type of behavior (Rosenstock, Strecher, & Becker, 1988).

Despite having over 50 studies that have examined the change in health behavior, it has been established that the perceived barriers were the most powerful predictor of changing the health behavior (Janz & Becker, 1984), the perceived barriers to exercising have been not examined enough yet (Ransdell et al., 2004). Along with this, the limited number of studies that examined the perceived benefits and barriers for women when doing exercises often did not take into consideration different factors of development and specific environmental conditions within different phases of female lives – how they influence their interest in exercising and their ability to be more active (King et al., 2000; El Ansari, & Lovell, 2009; Frederick et al., 2020). Further, a specific characteristic of many developed countries is the relatively high percentage of the population that go to university, most of who are women (Leslie & Owen, 2001). Yet, apart from the limited studies which have examined the female university student population, it can be concluded that just between 28% and 50% of that population regularly participate in physical activity, as against the 40% and 68% of the male university student population (Irwin, 2004; Kgokong & Parker, 2020).

Also, the recent research works point out that almost a quarter of all students who start their studies gain considerable weight during the first semester – a fact suggesting the need for effective strategies to help those young people to keep their healthy body weight (Wengreen & Moncur, 2009). The university has a similar impact in promoting physical activity as the school does (Armstrong & McManus, 1994), that the models of physical activity remain stable up to five years after graduation from university (Sparling & Snow, 2002).

The purpose of this study was to examine the perceived exercise benefits and barriers of female university students, measured by the Exercise Benefits/Barriers Scale (EBBS) (Sechrist, Walker, & Pender, 1987). Findings from the current study should assist health and fitness practitioners, researchers as well as policymakers, to design more appropriate initiatives to better suit the individual needs of female university students to ultimately increase their PA levels. The specific objectives were to: (1) Describe the sample's general levels of perceived benefits and barriers to exercise; (2) Assess whether female university students had greater total perceived benefits or barriers to exercise; (3) Identify what female university students perceived to be the biggest benefits of exercise; (4) Assess what female university students perceived to be the biggest barriers toexercise; (5) Identify how female university students' perceptions of benefits from exerciserelated to their perceptions of barriers to exercise; and (6) Establishing the correlation between the perceived benefits and barriers and the level of physical activity.

Methods

Sample of respondents

The research has been conducted on a sample of 514 female respondents randomly selected from several faculties of the University of "Ss. Cyril and Methodius" in Skopje. The average age of the respondents was 19.3 years, (SD=1.06). The respondents were treated following the Helsinki Declaration (revision of Edinburgh 2000). The protocols were approved by the Ethics Committee (Number 549, 10.05.2021) at the Ss. Cyril and Methodius University of Skopje.

Sample of variables

The data are collected using the structured questionnaire method of research. The variables are defined based on questionnaires and were categorized into two groups:

Exercise Benefits/Barriers Scale (EBBS): The perceived benefits and barriersto exercising were established with the questionnaire EBBS (Sechrist, Walker, & Pender, 1987). The established internal consistency (alpha) of the scales for assessing the benefits and barriersof exercising in former research works ranges between 0.95 and 0.86, and the reliability established by the test-retest method is from 0.89 and 0.77 (Gyurcsik et al., 2006). With this sample of respondents the internal consistency of the assessing scale was 0.91, and for assessing the perceived obstacles to exercising from 0.83. All the determinations of the scale for assessing the perceived benefits and barriers to exercising were evaluated by the Lickert system of marks from 1 to 4 grades.

Physical Activity Questionnaire (IPAQ):In assessing the physical activity it was applied a short version of the standardized International Physical Activity Questionnaire (IPAQ). Based on the standard instruction and standardized algorithms for analyzing the total volume and number of days for assessing the physical activity, the students were classified into three categories, such as students having a high level, moderate level, and low level of physical activity (IPAQ Research committee, 2005).

Methods of processing the data

Each respondent was considered by calculating standardized results of the scales for assessing total benefits and total barriers, as well as the same, was done with each subscale (the total evaluation of the scales and subscales is the average value of the determinations which were included in the scale or subscale). This adjustment aimed to provide a direct comparison between the scales and subscales. The possible results ranged from 1 to 4; 4 is the highest perception of benefits and barriers. Research objective one (to describe the sample's general levels of perceived benefits and barriers to exercise) was achieved by computing the means of the individual EBBS items. Research objective two (whether female university students had greater total perceived benefits or barriers to exercise) was assessed by a single paired samples t-test.The third and fourth research objectives (what female university students perceived to be the biggest benefits and barriers of exercise) were assessed by multiple paired sample t-tests to identify any significant differences between subscales (10 comparisons for the benefits scale; 6 comparisons for the barriers scale). The Bonferroni method was used to correct critical p values ($p<0.005$ for the benefits scale; $p<0.008$ for the barriers scale), while maintaining an alpha of 0.05 to control against an inflated alpha and the increased possibility of type I errors due to these multiple comparisons. The fifth research objective (how female university students' perceptions of benefits from exercise related to their perceptions of barriers to ex-

ercise) was assessed by the calculation of correlations between each of the benefit sub-scales with each of the barrier subscales (20 correlations). Again, to control against potential type I error due to multiple comparisons, the Bonferroni method was used to correct critical p values ($p<0.002$) while maintaining an alpha of 0.05%. The sixth and final goal of the research was established by applying a one-factor analysis of the variance, and posthoc tests were applied (Bonferroni-tests). The data was processed by statistical packet SPSS for Windows Version 26.0 (IBM Corporation, New York, NY, United States).

Results

Table 1 presents the arithmetical means and standard deviations for each statement (item) from the scale for assessing the perceived benefits of exercising with the female respondents. Generally, the female respondents either agree or completely agree with most of the statements on this scale, namely they think many of the statements are benefits of regular exercise. However, concerning some statements, the female respondents show neutral results (for example "exercising improves the quality of my work", "exercising increases my mental alertness", "I have a feeling of welfare when I take exercises", and 'exercising enables me to do normal activities without getting tired"). The female respondents agree the lest with the statements: "exercising is a good way to meet new people", "I will live longer if I take exercises", "exercising helps me to reduce the tiring", "exercising provides me contacts with friends and persons I enjoy to be with", "exercising increases my acceptance by others", "exercising will keep me from having high blood pressure" and "exercising will help me to prevent heart attacks".

Table 1. The exercise benefits scale: mean and standard deviation of each questionnaire item.*

Perceived Benefit Items	M	SD
Life Enhancement Sub-scale		
25: My disposition is improved by exercise	3.09	0.72
26: Exercising helps me sleep better at night	3.27	0.68
29: Exercising helps me decrease fatigue	2.78	0.76
32: Exercising improves my self-concept	3.13	0.69
34: Exercising increases my mental alertness	3.03	0.70
35: Exercising allows me to carry out normal activities without becoming tired	3.00	0.68
36: Exercising improves the quality of my work	3.05	0.70
41: Exercising improves overall body functioning for me	3.26	0.65
Physical performance Sub-scale		
7: Exercise increases my muscle strength	3.38	0.68
15: Exercising increases my level of physical fitness	3.30	0.67
17: My muscle tone is improved with exercise.	3.23	0.69
18: Exercising improves the functioning of my cardiovascular system	3.21	0.70
22: Exercising increases my stamina	3.20	0.69
23: Exercising improves my flexibility	3.25	0.69
31: My physical endurance is improved by exercising	3.33	0.63
43: Exercising improves the way my body looks	3.42	0.71
Psychological Outlook Sub-scale		
1: I enjoy exercising	3.47	0.62
2: Exercising decreases feelings of stress and tension for me	3.51	0.62
3: Exercising improves my mental health	3.52	0.63
8: Exercisinggives me a sense of personal accomplishment	3.23	0.75
10: Exercising makes me feel relaxed	3.30	0.71
20: I have improved feelings of well-being from exercise	3.02	0.73
Social Interaction Sub-scale		
11: Exercising lets me have contact with friends and persons I enjoy	2.73	0.86
30: Exercising is a good way for me to meet new people	2.92	0.76
38: Exercising is good entertainment for me	3.20	0.67
39: Exercising increases my acceptance by others	2.66	0.83
Preventive Health Sub-scale		
5: I will prevent heart attacks by exercising	2.10	0.84
13: Exercising will keep me from having high blood pressure	2.10	0.84
27: I will live longer if I exercise	2.87	0.88
All Benefit items of all subscale	3.05	0.36

* Adapted from the Exercise Benefits/Barriers Scale (EBBS)

Table 2 presents arithmetical means and standard deviations for each statement of the scale for assessing the perceived barriers to exercising with female respondents. Generally, the respondents agree with many statements from the scale for assessing the perceived barriers to exercising. However, the respondents do not completely agree with some of the statements, which suggests that those statements do not function as barriers for them to do exercises (for example, "I think people in exercise clothes look funny", "my family members do not encourage me to exercise"). The female respondents agree the less with the statement: "I am too embarrassed to exercise", while most of them agree with the statements: "exercising takes too much of my time", "exercising tires me" and "places for me to exercise are too far away".

Table2. The exercise barriers scale: mean and standard deviation of each questionnaire item*

Perceived Barriers Items	M	SD
Exercise Milieu Sub-scale		
9: Places for me to exercise are too far away	2.47	0.89
12: I am too embarrassed to exercise	1.70	0.86
14: It costs too much money to exercise	2.15	0.84
16: Exercise facilities do not have convenient schedules for me	2.28	0.82
28: I think people in exercise clothes look funny	1.74	0.83
42: There are too few places for me to exercise	2.23	0.80
Time Expenditure Sub-scale		
4: Exercising takes too much of my time	2.41	0.81
24: Exercising takes too much time from family relationships	2.23	0.78
37: Exercising takes too much time from my family responsibilities	2.22	0.74
Physical Exertion Sub-scale		
6: Exercise tires me	2.49	0.83
19: I am fatigued by exercise	2.41	0.75
40: Exercising is hard work for me	2.10	0.77
Family Discouragement Sub-scale		
21: My spouse (or significant other) does not encourage exercising	2.15	0.89
33: My family members do not encourage me to exercise (lack of family support)	2.04	0.87
All Barriers items of all subscales	2.20	0.45

* Adapted from the Exercise Benefits/Barriers Scale (EBBS)

Findings to the second research objective showed that this sample of femaleuniversity students felt significantly higher perceived benefits (M=3.05, SD=0.45) than barriers (M=2.20, SD=0.45)to exercise ($t(513)=31.47$, $p<0.001$). This equated to a benefit/ barrier ratio of 1.39; the ratio being >1 demonstrated that these females perceived greater benefits than barriers (Table 3).

Table 3. Standardized perceived benefit and barrier sub-scale means and standard deviations and t-test values for multiple comparisons.

Sub-scale	Mean	SD	Sub-scale†				
			1	2	3	4	5
Benefits (M = 3.05. SD = 0.36)							
Psychological Outlook	3.34	0.45	--	0.004*	0.000*	0.000*	0.000*
Physical performance	3.29	0.46		--	0.000*	0.000*	0.000*
Life Enhancement	3.08	0.45			--	0.000*	0.000*
Social Interaction	2.88	0.54				--	0.000*
Preventive Health	2.66	0.50					--
Barriers (M = 2.20. SD = 0.45)							
Physical Exertion	2.33	0.57	--	0.094	0.000*	0.000*	
Time Expenditure	2.29	0.58		--	0.000*	0.000*	
Exercise Milieu	2.10	0.54			--	0.991	
Family Discouragement	2.10	0.70				--	

For all subscales; possible scores range from 1 to 4. where 4 represents the highest perception of both benefits and barriers; †Values in the cells of these columns are actual t-test values; * Indicates that the means of the subscales that are being compared were significantly different, using Bonferroni corrected critical p values for benefits ($p<0.005$) and for barriers ($p<0.008$).

Analyzing individually the subscales for assessing the perceived benefits from exercising (Table 3), there can be noticed that the dominant benefit of exercising which the female respondents perceive is the psychologic benefit (M=3.34), and then follow the benefit connected with improving the physical performances (M=3.29), improvement of life quality (M=3.08), social interaction (M=2.88) and health prevention (M=2.66). Statistically, significant differences are established between all the subscales for assessing the perceived benefits of exercising. It is only the subscales of psychologic benefit, the benefit related to improving physical performances and improving the life quality that showed arithmetic means higher than 3, which is a "real" consent that those subscales consisting of mere than one statement are considered by the sample as benefits from the exercising.

Inspection of Table 3 shows that the greatest barriers to exercising with this sample of female respondents are the physical tension, then follows the lack of time, the exercising environment, and the lack of family support. The physical tension and lack of time were evaluated considerably higher as compared to the other two subscales for assessing the barriers to exercising. There were no established statistically significant differences between the subscales physical tension and lack of time, the exercising environment, and lack of family support. Arithmetic means of all the four subscales for assessing the barriers to exercising varied between 2 and 3, which is equal to the answers "I agree" and "I do not agree" onthe EBBS scale of rating, which can be regarded as a neutral attitude of the respondents.

Table 4. Correlation coefficients between perceived barriers and benefits of exercise subscales

	Barrier Sub-scale			
Benefit Sub-scale	Exercise Milieu	Time Expenditure	Physical Exertion	Family Discouragement
Life Enhancement	-0.187*	-0.110	-0.192*	-0.167*
Physical performance	-0.337*	-0.189*	-0.219*	-0.260*
Psychological Outlook	-0.201*	-0.132	-0.255*	-0.168*
Social Interaction	0.047	0.024	-0.066	0.029
Preventive Health	0.257*	0.171*	0.143*	0.222*

* Significant correlations using Bonferroni corrected critical p value (p<0.002).

The analysis of the matrix of cross-correlation between the subscales for assessing the benefits and barriers to exercising (Table 4) presents a low and statistically significant negative correlation between the subscales of physical performances with all four subscales for assessing the barriers to exercising. The subscales "life quality" and "psychologic benefit" are in low and statistically significant negative correlations with the subscales of "living environment", "physical tension" and "lack of family support". At the same time, the subscale of "health prevention" is in a low and statistically significant positive correlation with all the four subscales of assessing benefits from exercising.

Aiming to establish if the values of the two scales, the five subscales of assessing the perceived benefits and the four subscales of assessing the perceived barriers to exercising differ between the respondents having a different level of physical activity (low, moderate, high), where one-factor analysis of variance was applied. The analysis results (Table 5) show that those respondents classified as highly active statistically have significantly higher results on the scales and more subscales (psychologic benefit, benefit connected with improving the physical performances, improving the life quality and the social interaction) of assessing the perceived benefits of exercising and lower results in the scales and subscales (physical tension, lack of time, environment of exercising and lack of family support) of assessing the barriers for exercising in comparison

Table 5. The difference in scales and subscales of assessing the perceived benefits and barriers to exercising among the respondents classified by different levels of physical activity

	Low (1)		**Moderate (2)**		**High (3)**		**F**	**Sig.**	**Post hoc pairwaise comparison***		
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**			**1-2**	**1-3**	**2-3**
Life Enhancement	2.97	0.44	3.03	0.38	3.18	0.51	9.15	0.000	ns	<	<
Physical performance	3.14	0.40	3.24	0.39	3.41	0.51	15.37	0.000	ns	<	<
Psychological Outlook	3.24	0.41	3.28	0.43	3.45	0.47	10.74	0.000	ns	<	<
Social Interaction	2.81	0.47	2.74	0.50	3.04	0.57	17.58	0.000	ns	<	<
Preventive Health	2.64	0.53	2.66	0.51	2.67	0.48	0.20	0.817	ns	ns	ns
All Benefit	2.96	0.31	2.99	0.32	3.15	0.39	15.48	0.000	ns	<	<
Exercise Milieu	2.30	0.58	2.08	0.51	2.01	0.51	11.08	0.000	>	>	ns
Time Expenditure	2.42	0.64	2.31	0.53	2.20	0.58	5.42	0.005	ns	>	ns
Physical Exertion	2.40	0.58	2.39	0.56	2.24	0.56	4.58	0.011	ns	>	>
Family Discouragement	2.31	0.74	2.12	0.63	1.96	0.70	9.19	0.000	ns	>	ns
All Barriers	2.36	0.53	2.23	0.41	2.10	0.42	12.07	0.000	>	>	>

*Example of pairwise comparison: the symbol > in column 1–2 indicates a significant difference (P<0.05) in the direction 1>2; ns: non-significant.

with those respondents classified as being moderate and low physically active. There were no established statistically significant differences between those respondents having a different level of physical activity only in the subscale of health prevention. With the respondents having a high level of physical activity, the correlation benefits/barriers was 1.50; with those respondents having moderate physical activity, the correlation benefits/ barriers was 1.34; whereas with those having a low level of physical activity. The correlation between benefits/barriers was 1.25.

Discussions

Proper physical activity plays a key role in the welfare and life quality (McAuley & Rudolph, 1995). Therefore, the university environment is of essential importance for promoting good physical health and behavior.However, the lack of enough data related to the perception and attitudes of the university student population about exercising puts a limit on designing effective interventions for promoting physical activity. This research aims to establish how university female students perceive the benefit of doing exercises and to establish what prevents them most often from having physical activities.

Regarding the first aim of the research, the results of our study show that the respondents either agree or completely agree with a great number of the statements from the scale of the perceived benefits, whereas they show neutral results or are close to accepting most of the statements from the scale of assessing the perceived barriers from exercising.

As for the benefits of doing exercises, the respondents agree the least with the statements: "exercising is a good way for me to meet new people", "I will live longer if I exercise", exercising helps me decrease fatigue", and "exercising lets me have contacts with friends and persons I enjoy", exercising is a good way for me to meet new people", exercising will keep me from having high blood pressure" and "exercising will prevent me from having heart attacks".

As for the barriers from having exercise, the respondents mainly agree with the statements: "exercising tires me", "places for me to exercise are too far", and exercising takes too much of my time", whereas they agree the least with the statements about the barriers: "I think people in exercise clothes look funny", my family members do not encourage me to exercise" and "I am too embarrassed to exercise".

As for the second goal of this study, the results point out that the respondents perceive more benefits rather than barriers from exercising, which also implies the correlation between benefits/barriers, which is 1.39. This corresponds with previous research works which showed that the perceived benefits were higher than the perceived barriers (Nahas, Goldfine & Collins, 2003).

Regarding the third goal, where the items of each subscale are analyzed in summing, the research results point that the dominant benefits from doing exercises that the respondent perceive is the psychologic benefit (better mental and psychologic welfare) and the benefit related to improving physical performances; whereas the benefits related to improving life quality, the social interaction and health prevention were ranged considerably lower.

The finding that benefits connected with the performance improvement (which covers improving physical readiness, muscular strength, cardiovascular functioning, endurance, flexibility, and physical appearance) are one of the most highly perceived benefits of exercising, which is not to be a surprise, because the importance of these qualities with the female respondents is constantly emphasized by a wide range of media canals (Kgokong & Parker, 2020). Similarly, the psychological benefit as dominant from exercising is following the research of Biddle and Bailey (1985), who established that the female respondents highly estimated the benefits related to mental and psychological welfare resulting from exercising. The surprising thing was that the respondents had the least perception of those benefits related to health, which implies that the university students population is not aware of the fact that exercising can help them in preventing and improving their health, which is contrary to the model of health belief (Janz & Becker, 1984), which to a large degree can influence the change of behavior of this population group. Therefore, in the future, this population group should be acquainted with the health benefits of exercising, through which an influence on positive behavior changes could be carried on.

The respondents' perception of having fewer benefits related to the factors of improving life quality and social interaction is contrary to the previous research, though they have been expected. Namely, the former research works (Wankel, 1980) and motivation theories (Deci & Ryan, 1980) suggest that the social issues are key motives for a person to continue doing physical activities. However, our sample presents a specific kind of population (students) which is different from the populations researched in former studies. Namely, at that age respondents have a greater opportunity for socialization, friendships, and communication, which is a constituent part of their university life. These various possibilities of socialization can "undermine" the noticed importance of social benefits that might result from exercising. The results are following the research works conducted on female respondents that did not bring recommendations for physical activity from universities in Great Britain, which also have perceived fewer benefits from the exercises related to these factors (Lovell et al., 2010).

Regarding the fourth goal, the research results point out that the lack of encouragement from the family is a barrier that prevents them the least from exercising. Although the research results suggest that the exercise environment does not appear as a significant barrier to exercising, which is inspiring, the isolated statements "Places for me to exercise are too far", which is a component of this subscale, is too highly ranged. This is following the research works of King et al. (1992), who determined that young old women have difficulties in doing exercises because of the limited reach to the spots. Further, the results of this research negate traditional attitudes that women have in situations when they feel embarrassed or uncomfortable (O'Neill & Reid, 1991; Gyurcsik et al., 2006). After all, our results can be generalized only to the university student population, which usually feel confident in their social context and have a greater possibility (and often for free) for access to exercise premises and chances for physical activity.

Based on the obtained data, there can be concluded that the subscale "lack of time" is ranged highly than the subscales of "exercise environment" and "lack of family support". Although our research points out that the lack of time is considered a neutral barrier, there still can be said that the lack of time is a bigger barrier than that of an exercise environment. This is following the studies of Gyurcsik et al., who examined the barriers to physical activity with 198 candidatestudents (Gyurcsik et al., 2006). Gyurcsik et al (2006) established that 52% of the

university students mentioned their social invitations overlapping the terms for exercising (for example "I was invited to a party") as a barrier to physical activity, and 74% pointed out that their loading at the university is too large to be able to get engaged into physical activity, which reveals that both aspects are, to some extent, barriers connected with the lack of time.

Gyurcsik et al. (2006) have established that the problems referring to the exercise environment as a barrier are pointed out by a small number of students; 3% of the students mention the lack of money as a barrier to exercising, and 6% point the transport as a barrier for exercising. To overcome this barrier, female students need to be educated about skills of efficacy in handling their time (time management). Student girls could spear some time from the time spent on the computer or in front of the television, or instead of going to the cafe with friends to go to some fitness center or sports hall and have equal fun.

Physical tension was by far the highest perceived barrier to exercising with the tested university population. This is following some of the former studies (Kgokong & Parker, 2020; Shaikh, Dandekar, & Hatolkar 2020). The perception of physical tension, as a major barrier to exercising, comes from the fact that physical activity is exhausting and tiresome activity, which is to a great extent an alarming signal. That can lead to a vicious circle: the more the students' physical activity decreases, the harder and harder it is going to be for them to engage in the recommended regular physical activity. The physical dis-activity will increase the physical tension as a barrier to exercising, which will cause a drop in their activity, and as a result their condition of physical readiness. The perception of the physical tension as the main barrier to exercising can also reflect a cultural or social problem. According to the theory of planned behavior (Ajzen & Madden, 1986), attitudes are influenced by the social norms which, on their part,have an impact on intentions, and consequently on behavior. If the social norm is the absence of desire to be physically active and not to enjoy the physiologic results accompanying physical activity (for example rapid heartbeat, increased sweating, feeling of activating), then the attitude of the person can become more negative, having the effect of decreased wish for exercising and finally this could influence the behavior as well.

As for the fifth research goal, the results show that most of the subscales for assessing the barriers are in negative correlation with the subscales of assessing the benefits. The subscales of "life quality" and 'psychological benefit" are in low and statistically significant negative correlation with the subscales of "exercise environment", "physical tension" and "lack of family support". At the same time, the subscale of "health prevention" is in a low and statistically significant correlation with all of the four subscales of assessing the barriers for exercising. Further, these relations suggest that the intervention that is focused on increasing the perceived benefits of physical activity can as well have a positive effect on the changes of some barriers.

Regarding the sixth research goal of assessing the relationship between the perceived benefits and barriers to the level of physical activity, the results showed that the respondents, having a high level of physical activity, display significantly higher results in the scales and subscales of assessing the perceived benefits and lower results in the scales and subscales of assessing the perceived barriers from exercises in comparison with the respondents of a moderate or low level of physical activity. This illustrates that these students showed a positive attitude towards exercising, which, on its part, resulted in positive health behavior (i.e.exercising). These results are following former research works which have presented that the higher the perceived benefits are, the more active the person is личност (El Ansari & Lovell, 2009).

Along with this, according to the socio-cognitive theory individuals tend to act in ways that they perceive as possible to lead to positive results, but avoid behavior that they expect to bring negative results (Young et al., 2014). Perhaps it is the physical activity that had influenced the students who became classified as highly physically active to have more satisfying results in the scales and subscales which were a constituent part of the EBBS questionnaire. In other words, the relationship between them can be two-way. Those students having exercises can have a good attitude towards the physical activity, because doing the regular physical activity themselves feel the benefits of it. This concept of learning through personal experience is a key moment in the change of behavior.

The research has some limits as well. The present research design was transversal, due to which the cause-and-effect relation could not be established. Another weakness of the study refers only to the female student population of the "Ss. Cyril and Methodius" University in Skopje. In the future, there should be organized surveys that would cover the whole student population of the Republic of North Macedonia, when individual treatments would be provided for the young living in rural, sub-rural, and urban regions, and the sample would include respondents from different ethnic communities, as well as the economic-social status, would be taken into consideration. Future studies will have to answer the question about how these different factors of benefits/barriers function in influencing each other and/or how the variables should be shaped. Longitudinal studies can also provide pieces of evidence about the directions of causality.

Conclusion

On the bases of obtained results, there can be concluded that the respondents who were tested in the present research perceived the exercise as more beneficial and far fewer barriers. The perceived correlation of benefits/barriers of 1.39 may appear insufficient to motivate these respondents to be more active. The initiatives on health education and promotion of physical activity at universities can have greater efficiency if the mentioned efforts are directed at the education of those respondents who do not take exercise to increase the correlation of benefits/barriers, which would stimulate them to maintain a physically active lifestyle which, on its part, will have a better effect on their health. For example, in the context of health and social partnership participation in South Africa, El Ansari and Phillips (2004) point out that people will much more take participation in programs and interventions if they believe that the benefits of such participation are much higher than their expenses (barriers) on the same. Involvement, devotion, and feeling of ownership have always been connected with high benefits and mostly with low expenses (barriers). For a favorable correlation between expenses and benefits, the benefits should be at least 80% higher than the expenses (El Ansari & Phillips, 2004; Lovell et al, 2010). There might be necessary a similarly high correlation of benefits/barriers for the exercising to be initiated and kept on regular terms of participation by the students' population in physical activity programs.

The implications of this study include the importance

of interventions that should have a twofold approach. Interventions could help in reducing the perceived barriers of "attention distraction" or "detaching" the student-girls from every perceived "unpleasantness" from the physical effort during having a physical activity (for example, by using cognitive strategies or music the respondents' attention is re-directed away from the inter-physical signs connected with the physical efforts). Along with this, interventions should be adapted into motivating the students to overcome the physical tension by providing education and the need of setting positive goals and focusing on the potential benefits of exercising. The interventions that are directed towards the one or (if possible) both targets can contribute to increasing the possibility of involving physical activity with this population group. In addition, the research results suggest that both the age and gender specificities of respondents should be taken into consideration when trying to get inside the attitudes toward exercising and physical activity.

Acknowledgments
There are no acknowledgements.

Conflicts of Interest
The authors declare no conflict of interest.

Received: 15 October 2021 | **Accepted:** 30 May 2022 | **Published:** 01 June 2022

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