

Physical Activity and Its Effects among Medical Students at Majmaah University-Saudi Arabia

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ABSTRACT

Background/Introduction: Many studies that were published in other countries talked about physical activity in their nations, but there is a lack of research about physical activity in Saudi Arabia particularly among medical students. Thus, this study focuses on physical activity among medical students at Majmaah University.

Objective: To study physical activity and its effects among medical students at Majmaah University, Saudi Arabia.

Methodology: This is a cross-sectional study done on medical students at Majmaah University in Saudi Arabia. A pre-tested, close-ended interview-based questionnaire was used to collect the data and analyse the information.

Results: It was found that physical activity among the students was slightly prevalent compared to the double number of inactive students. A positive statistical association was found between physical activity and students' ideas that it is possible during the study of medicine. Also, academic performance was found to be not affected by physical activity, and that was statistically proved from participants' GPA which appeared to be similar for both groups who physically active and not. The most common barrier preventing them was lacking time. Furthermore, it was found that most of all participants whether they were physically active or not, agreed that there are effects of physical activity on psychological condition in which it promotes happiness, relieves stress.

Conclusion: We recommend the medical students to be physically active according to WHO recommendation, not just for its healthy effects, but also for its positive effect on mood, that helps the student's ability to study.

Key words: Activity, Medical students, Effect

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INTRODUCTION

Physical activity (PA) has a wide concept as it includes any movement of a human's body that requires energy whether it is intentional or not is considered as PA. WHO defines physical activity "as any bodily movement produced by skeletal muscles that require energy expenditure" [1]. The physical activity and healthy lifestyle are major ways of maintenance and promotion of an individual's health and wellbeing. Furthermore, it prevents of musculoskeletal disorders such as back pains, and prevent metabolic disorder that associated with a sedentary lifestyle as coronary heart disease, diabetes, and hypertension, etc. [2]. Aerobic exercises such as walking,

jogging, swimming, and running, etc. are examples of intentional PA that require energy expenditure.

Nowadays physical activity in Saudi Arabia is becoming popular in the community, and health education programs have increased the awareness of its impact on the health. Otherwise, still there are some barriers to physical activity which represent the cause of a high percentage of obesity among the Saudis population. Such as increase passive transportation instead of active transportation, availability of cars, busy lifestyle, people's beliefs, and culture. Many studies that were published in other countries talked about physical activity in their nations, but there is a lack of research about physical activity in Saudi Arabia particularly among medical students. Thus, this study focuses on physical activity among medical students at Majmaah University as they are facing a busy lifestyle.

OBJECTIVES

General objectives

To study physical activity and its effects among medical students at Majmaah University- Saudi Arabia.

Specific objectives

To determine the prevalence of physical activity practice among medical students at MU.

To determine the effects of PA on medical students' academic performance at MU.

To determine the barriers to PA among medical students at MU.

To determine the effects of PA on psychological conditions among medical students at MU.

METHODOLOGY

Study design

This is an observational (Descriptive study), cross-sectional study (prevalence).

Study area

Majmaah University is a governmental general university, located in Majmaah city in Saudi Arabia; it contains colleges, each specialized on education of a major that related to it. The university has a medical college, which specialized on education of medicine. The place where medical student gets their knowledge, and our study will be conducted.

Target population

The study population will be medical students who study at Majmaah University.

Duration of the study

The study will be done within 6 months from the ethical approval obtained from Deanship of Scientific Research, Majmaah University.

Data collection

The data will be collected by filling a pre-written question papers that has choice answers.

Data analysis

All the data will be entered into the statistical software SPSS version 25.0 and will be analyzed, presented by researchers in tables and graphs and statistical tests applied accordingly.

Ethical considerations

The study will acquire ethical approval from Majmaah University ethics committee. Permission will be obtained from the Majmaah University. Data will be kept

confidential and will be used only for the purpose of this study.

Inclusion and exclusion criteria

All the male students at Majmaah University will be included in the study sample. While girls' students are excluded.

RESULTS

Figure 1 shows the prevalence of physical activity among medical students which were calculated depending on the days, time, and the type of physical activity to evaluate whether they are meeting to WHO recommendations or not. The prevalence of physically active students who met WHO recommendations were 52 (33.8%), while majority of the students were inactive representing 66.2% (n=102).

Physically Active

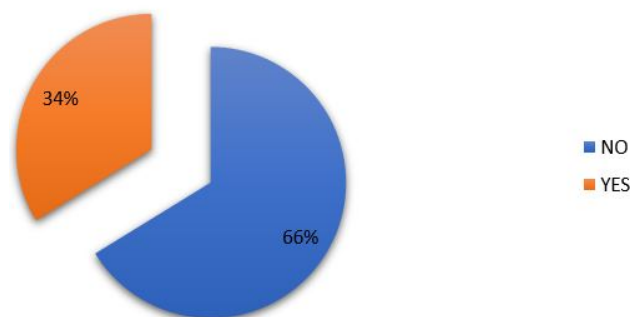


Figure 1: The prevalence of physical activity among participants.

Table 1 shows the prevalence of physical activity among medical students at Majmaah University. Out of 154 students 43.5% (n=67) consider their physical activity to be mild, while 33.8% (n=52) consider themselves as moderately active, while 13% (n=20) consider themselves as not active at all. Regarding the types of physical activity that the students do, "walking or jogging" was the highest representing 48.1% (n=74), while 10.4% (n=16) prefer to play football or volleyball. On the other hand, 27.9% (n=43) of the students were not interested in the types of physical activity which were mentioned. Regarding the days those students exercise per week, 39% (n=60) of the students do physical activity at least 1-2 days regularly per week, while 16.2% (n=25) of the students do physical activity at least 3-4 days regularly per week, while 33.8% (n=52) of the students didn't do physical activity regularly.

When we asked the students about how much they spend time on physical activity, 29.2% (n=45) of the students were spending about at least 10-30 minutes on doing exercise daily, while 26.6% (n=41) were spending at least 30-60 minutes on doing exercise daily, and 33.8% (n=52) were not spending time on physical activity.

Table 1: PA among medical students at MU.

Variables	Number	Percent (%)
Consider yourself physically active		
Mild	67	43.50%
Moderate	52	33.80%
High	15	9.70%
No PA	20	13.00%
Type of physical activity		
Walking or jogging.	74	48.10%
Playing football, volleyball.	16	10.40%
Muscle building.	10	6.50%
Swimming.	3	1.90%
Walking, jogging, and playing football and volleyball.	8	5.20%
None of them.	43	27.90%
Number of days of doing PA per week		
1-2 days	60	39.00%
3-4 days	25	16.20%
5-6 days	14	9.10%
7 days	3	1.90%
No physical activity	52	33.80%
Time spending on physical activity		
10-30 minutes	45	29.20%
30-60 minutes	41	26.60%
<1 hour	16	10.40%
No physical activity	52	33.80%
Total	154	100%

Table 2 shows the effect of physical activity on the academic performance of the medical students at Majmaah University. Out of 154 participants, in which 63.8% (n=44) of them who have GPAs between 5-4.1 were physically inactive. In contrast, there were 36.2% (n=25) of them physically active. Likewise, participants

who have GPAs between 4-3.1 were quite similar, constituting 64.8% (n=46) of them were physically inactive while the rest 35.2% (n=25) were physically active. Which seen here that most students who have high GPAs were inactive.

Table 2: Effects of PA on the academic performance of the medical students at MU.

Variables	Physical activity		Total (% of all sample)	p value
	Frequency (proportion %)			
	Yes	No		
	GPA			0.283
5-4.1	25 (36.2%)	44 (63.8%)	69 (44.8%)	
4-3.1	25 (35.2%)	46 (64.8%)	71 (46.1%)	
3-2	2 (14.3%)	12 (85.7%)	14 (9.1 %)	

Table 3 shows the relation between physical activity and academic performance. Regarding participant's opinion about physical activity with academic performances, out of 61 participants who thought that physical activity

increases their academic performances, there were 68.9% (n=42) of them physically inactive and 31.1% (n=19) physically active. Which means physically inactive student admit that physical activity helps them, but they

didn't try for some reason. Similarly, out of 44 participants who thought physical activity decrease their academic performance, there were 68.2% (n=30) of them physically inactive, and the remaining proportion 31.8% (n=14) were physically active. A statistically significant association was observed between the prevalence of physical activity and participant's consideration regarding physical activity during the study of medicine (p=0.00), showing that 70 participants considered it as possible in which 74.3% (n=52) of them were physically

inactive, and 25.7% (n=18) were physically active. 46 of the participants considered it as appropriate in which the majority of them were physically active 60.9% (n=28) while the remaining portion 39.1% (n=18) were physically inactive. So, it shows again that most of the participants who weren't physically active agreed with the idea of physical activity during the study of medicine, but there may be other barriers preventing them.

Table 3: Relation between physical activity and academic performance.

Variables	PHYSICAL ACTIVITY Frequency (proportion %)		Total (% of all sample)	P value
	Yes	No		
Doing physical activity				
Increase your academic performance	19 (31.1%)	42 (68.9%)	61 (39.6%)	0.666
Decrease your academic performance	14 (31.8%)	30 (68.2%)	44 (28.6%)	
Do not change any thing	19 (38.8%)	30 (61.2%)	49 (31.8%)	
Physical activity during the study of medicine				
Appropriate	28 (60.9%)	18 (39.1%)	46 (29.9%)	0
Inappropriate	4 (14.8%)	23 (85.2%)	27 (17.5%)	
Possible	18 (25.7%)	52 (74.3%)	70 (45.5%)	
Impossible	2 (18.2%)	9 (81.8%)	11 (7.1%)	

Table 4 shows the barriers to physical activity among medical students at Majmaah University. The participants were asked if they were physically active before being medical students and then were asked if they are physically active now, to see if the college of medicine preventing them. Out of 154 participants, 79.2% (n=122) were physically active before being medical students and about half of them were still physically active even after being medical students (42.2%, n=65), while the other half of them (37%, n=57) stopped being physically active after being medical students. This gives us a clue that there may be reasons preventing them after they are being medical students.

that prevent them from doing physical activity, the majority of the students consider "lack of time" as the barrier that preventing them from doing physical activity (49.9%, n=76), while 15.6% (n=24) of medical students consider "academic pressure" during college is the main barrier that preventing them, while 12.3%(n=19) consider "regular habits like sleeping(nap), hang out, etc." as the main barriers that prevent them. finally, the financial factor wasn't represented as a barrier for the student from doing physical activity. So, lack of time may be the reason behind preventing the student from continuing physical activity as they faced it after entering medical college.

Regarding asking medical students about the barriers

Table 4: The barriers to PA among medical students at MU.

Variables	Physically active before being medical student		Total	p value		
	Yes	No				
Physically active now	Yes	65 (42.2%)	13 (8.4%)	78 (50.6%)	0.203	
	No	57 (37%)	19 (12.3%)			76 (49.4%)
	Total	122(79.2%)	32(20.8%)			154(100%)
The barriers that prevent you from doing exercises		Number	%			
Lack of time		76	49.40%			
Academic pressure		24	15.60%			
Habits e.g. sleeping(nap), hang out, etc.		19	12.30%			
Not interested		11	7.10%			

Lack of time & Academic pressure	5	3.20%
Lack of time, Academic pressure and Habits	13	8.40%
Financial	0	0%
Other barriers	6	3.90%
Total	154	100%

Table 5 shows the effect of physical activity on psychological conditions of medical students at Majmaah University. Out of 154 participants, 94.8% (n=146) thought that physical activity relieves stress, in which out of physically inactive students (n=102) there were 65.8% (n=96) agreed with that answer and out of physically active students (n=52) all of them agreed except two students. Similarly, most of all the participants 94.2% (n=145) consider physical activity as a solution to get rid of bad feelings, in which 64.8% (n=94) of them were physically inactive and 35.2% (n=51) were physically active. According to the previous two questions mostly all the participants whether they were physically active or not agreed that there are effects of physical activity on

psychological condition in case of stress and bad feelings. When we asked the participants regarding if they ever felt of depression or sadness then that changed after doing physical activity. There were 58.5% (n=90) of all participants who felt a change, which 62.2% (n=56) of them were physically inactive and 37.8% (n=34) were physically active. On the other hand, 41.6% (n=64) of participants felt no change and answered with no, of which 71.9% (n=46) of them were physically inactive, and 28.1% (n=18) were physically active. So, on this question the participant split into two groups one of them agree and the other not.

Table 5: Effect of PA on psychological conditions of medical students at MU.

Variable		Physically Active		Total (% of all sample) n (154)	P value
		Yes	No		
Physical activity relieves stress	Yes	50(34.2%)	96(65.8%)	146(94.8%)	0.718
	No	2(25%)	6(75%)	8(5.8%)	
Physical activity is a solution to get rid of bad feelings	Yes	51(35.2%)	94(64.8%)	145(94.2%)	0.274
	No	1(11.1%)	8(88.9%)	9(5.8%)	
Felt depressed or sad, and that changed after doing exercise	Yes	34(37.8%)	56(62.2%)	90(58.5%)	0.212
	No	18(28.1%)	46(71.9%)	64(41.6%)	

DISCUSSION

This study aims to evaluate the prevalence of physical activity among medical students in Majmaah University and its effects on academic performance and psychological condition and to determine the barriers of physical activity among medical students. There were 154 participants, all of them are male. Most of the students are in the 22-24 age group. The prevalence of physical activity was 33.8% (n=52). The most common type of activity was walking or jogging 48.1% (n=74). 39.1% of the participants exercise in 1-2 days per week (n=60). Regarding time spending, the highest proportion of the students spend 10-30 minutes during exercise. The majority of medical students were physically inactive (102) 66.2%, of which 52 students are not doing physical activity at all, where the remaining they are doing the physical activity, but they did not meet WHO recommendations. A similar study was done at King Saud University among medical students, Riyadh, showing that 47.2% were physically active.3 Another study was conducted in India, showing that a high level of physical activity was observed in 41.3% of medical students [3,4]. Regarding the effects of physical activity on academic

performance, 69 students had GPAs between 4.1-5, of which 63.8% of them were physically inactive. No significant association was observed between physical activity and GPA of the students according to our sample. Most students think that physical activity increases academic performance by 59.8% (n=61). Even inactive students, there were 42 inactive students out of 102 thinks that physical activity will increase academic performance. A significant association was observed between the possibility of doing PA during medicine and the prevalence of PA, show that 50.9% of inactive students found it possible (n=52), while 17.6% of inactive students found it appropriate (n=18) but they are inactive though. Our results contradict results of study was conducted in Pakistan showing that physical activity was significantly associated with the academic performance [5]. Also, the study conducted in Riyadh, King Saud University medical students shows a positive significant association between physical activity habits and high academic achievement [3].

In our study 122(79.2%) of participants were active before medical school among these 65(42.2%) are physically active now in contrast 32(20.8%) were

inactive before medical school and 13(8.4%) are physically active now. No significant association was observed between physical activity before and during medical school. Among the barriers that were preventing the participants from doing exercise lack of time was the first 76(49.4%) a similar study was done in King Khaled University and showed that time limitations (51.3%) were the major barrier among the inactive participant [6]. Also, a study done in Al-Jouf university showed time limitation was the most frequent barrier toward physical activity 143(84.1%) [7]. Academic pressure was the second most important barrier followed by habits such as sleeping and hang out 24(15.6%) and 19(12.3%) respectively. Whereas were Have other important priorities the second most frequent barrier among Al-Jouf university 79 (46.5%) [7], and lack of accessible and suitable sports places (31.1%) in King Khaled university. There was a study conducted at the University of Malaya showed that 38(62.3%) of participants consider no time is the main barrier showing that lack of time is the main barrier for most of medical students [8].

Most participants were thinking that physical activity relieves stress 146(94.8%) but only around a third of them were physically active 50(34.2%). Only 8(5.8%) were thinking physical activity does not have a role in relieving stress and 2(25%) of them were physically active. 145(94.2%) of participants consider physical activity as a solution to get rid of bad feelings and 51(35.2%) of these were physically active and the remaining of them were not. 9(5.8%) of the participants thought it is not a solution to get rid of bad feelings and only 1(11.1%) of them were physically active. In our study showed that 90(58.5%) of the participants felt depressed or sad and relieved after doing exercise showing that exercise is a good solution for depression and sadness, so it is important during academic pressure. In our study 123(79.9%) Said they feel happy after physical activity, 4(2.6%) feel sad and the other 27(17.5%) said there is no mood change before and after physical activity.

CONCLUSION

This study tried to identify the prevalence of physical activity among medical students at Majmaah University, and consequently its effect in their academic performance and psychological condition, and lastly the barriers that preventing inactive students from doing physical activity. It was found that physical activity among the students was slightly prevalent compared to the double number of inactive students, and that done after calculating the days, time, and the type of physical activity according to World Health Organization recommendations. A positive statistical association was found between physical activity and students' ideas that it is possible during the study of medicine. Also, academic performance was found to be not affected by physical activity, neither by increases nor decreases it, and that was statistically proved from participants' Grade Point Average which appeared to be similar for both groups

who physically active and not, also participants' opinions of its effect on academic performance was divided equally with the options. Also, it was found that students who were physically active before they entered medical college, half of them still do physical activity and the other half stopped to do, and the most common barrier preventing them was found to be lack of time. Furthermore, it was found that most of all participants whether they were physically active or not, agreed that there are effects of physical activity on psychological condition in which it changes the mood to happiness, relieves stress and helps to get rid of bad feelings. Finally, half of the participants admit that physical activity is a solution for sadness and depression.

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Also, the authors would like to acknowledge the Deanship of Scientific Research and the Deanship of Community Services of Majmaah University, Kingdom of Saudi Arabia for supporting this work.

CONFLICT OF INTEREST

Nil.

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REFERENCES

1. World health organization. Physical activity. 2018
2. Arzu D, Tuzun EH, Eker L. Perceived barriers to physical activity in university students. *J Sports Sci Med* 2006; 5:615.
3. Al-Drees A, Abdulghani H, Irshad M, et al. Physical activity and academic achievement among the medical students: A cross-sectional study. *Medical Teacher* 2016; 38:S66-S72.
4. Padmapriya K, Krishna P, Rasu T. Prevalence and patterns of physical activity among medical students in Bangalore, India. *Europe PMC*. 2013; 5:606-610

5. Satti M, Khan T, Qurat-ul-ain Q, et al. Association of physical activity and sleep quality with academic performance among fourth-year MBBS students of Rawalpindi medical university. *Cureus* 2019.
6. Awadalla NJ, Aboelyazed AE, Hassanein MA, et al. Assessment of physical inactivity and perceived barriers to physical activity among health college students, south-western Saudi Arabia. *East Mediterr Health J* 2014; 20:596-604.
7. Abdel-Salam D, Abdel-Khalek E. Pattern and barriers of physical activity among medical students of Al-Jouf University, Saudi Arabia. *J High Institute Public Health* 2016; 46:41-48.
8. Asousi M. Physical activity among preclinical medical students at the University of Malaya, Malaysia. *J Nutritional Health Food Sci* 2016; 4:1-8.