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### RESEARCH ARTICLE

#### KNOWLEDGE, ATTITUDE AND PRACTICE OF PHYSICAL ACTIVITY AMONG MALE STUDENTS AT TAIBAH UNIVERSITY IN AL-MADINAH AL-MUNAWARAH, SAUDI ARABIA

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#### Abstract

Physical activity (PA) is an important component of sound health and is inversely related morbidity and mortality. There has been a gap of data about this issue among adolescents and university students in Saudi Arabia. The authors conducted a University-based cross-sectional study at Taibah University during October and November 2014 to study the knowledge, attitude, and practice (KAP) of physical activity among a random sample of students. A multi-stage random sampling technique was applied where 200 students were chosen randomly from two faculties (Medicine and Engineering). The study Students were asked to fill a predesigned structured questionnaire. The questionnaire included socio-demographic and KAP data about physical activity. Appropriate statistical analyses were performed where knowledge was compared as good, fair and poor, while attitude was analyzed and compared on 5-points Likert scale. Results revealed that low percent of the studied students to have had good knowledge about the benefits of PA with a significant high percent was among medical students (36%) compared to only 20% found among engineering students. Most of the students had a favorable attitude towards PA with the higher attitude scale for most of the studied attitude items was among engineering students. A relatively low percent of students reported practice of high intensity and moderate intensity PA with no significant differences were found between medical engineering students. Also, the number and duration of weekly walking session showed no significant differences in the studied medical and engineering students. More efforts and intervention studies are need regarding the importance of physical activity in the university campus and to include all the university students.

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**Introduction:-**

Physical activity is defined as any bodily movement produced by skeletal muscles that require energy expenditure. Physical inactivity has been identified as the fourth leading risk factor for global mortality causing an estimated 3.2 million deaths globally.<sup>[1]</sup>

There is evidence that intensity of physical activity is inversely and linearly associated with mortality, when someone participates in at least 60 minutes of physical activity every day, multiple health benefits accrue.<sup>[2-3]</sup> Regular physical activity builds healthy bones and muscles, improves muscular strength and endurance, reduces the risk for developing chronic disease.<sup>[4-5]</sup> The impact of physical activity improves self-esteem, and reduces stress and anxiety.<sup>[6]</sup>

Physical activity patterns during college years are important influences on habitual physical activity during the full span of the adult life and, consequently, have significant implications for short- and long- term health outcomes.<sup>[7]</sup>

Early studies revealed that regular physical activity (expending > 2000 kcal [8400 kJ] per week) was associated with an average increase in life expectancy of 1 to 2 years by the age of 80 and that the benefits were linear even at lower levels of energy expenditure. Subsequent studies have shown that an average energy expenditure of about 1000 kcal (4200 kJ) per week is associated with a 20%–30% reduction in all-cause mortality.<sup>[4]</sup>

Previous studies in Saudi Arabia showed a very low physical inactivity and that is the inactivity was more in females than in males.<sup>[8-10]</sup> Many categories are effecting the increasing of physical inactivity such as gender, education levels (decreased with the increasing of education levels), and the region (i.e more in the central area and less in the southern region). Further, active individuals exhibited lower values of BMI and waist circumference.<sup>[8-9]</sup>

This research was carried out at Taibah University to study the knowledge, attitude and practice of physical activity among University students, and generally the research was done upon increasing awareness of the students towards physical activity and its importance.

**Subjects and Methods:-****Study type, setting and sampling:-**

Cross section study was conducted at Taibah University, Al-MedinahAl-Munawarh, Saudi Arabia during the period from October to November of 2014, to assess the knowledge, attitude and practice of physical activity among University students. A multistage random sample was taken, and the final stage sample included 200 students from medical and engineering faculties (100 medical students and 100 engineering students), where 50 students were invited to participate from the first and second year students from these two faculties.

**Data collection and tools:-**

The included students were asked to fill a predesigned structured questionnaire. The questionnaire was developed according to the finding previous studies and has been reviewed and validated the supervisor of the research. A pilot study was also performed on 30 students from both faculties before the process of data collection. The questionnaire included questions about identification characteristics including age, sex, height, weight, educational level and department and family income. The questionnaires also included data about knowledge, attitude and practice. The questionnaire was distributed manually to medical and engineering students at Taibah University.

**Measurements of knowledge and attitude:-**

The knowledge was based on 10 with 3 answers for each question (yes, no and do not know). For simplification "no" and "don't know" were grouped as "no". The knowledge for physical activity was assessed and categorized into good, fair and poor according to knowledge score given for each of its component. Good knowledge was defined if the student's answered by "yes" was more than 75%, fair knowledge was between (50-75%), and finally poor knowledge was less than 50 %. The attitude towards physical was assessed using Likert response scale from 1-5 (1=totally disagree; 2=disagree; 3=neutral; 4=agree; 5=totally agree). The attitude was included 8 statements representing all aspects concerning physical activity. The knowledge was performed by using closed questions. Attitude data was presented using Likert response scale.

**Statistical analysis:-**

Data entry and statistical analysis was performed using the Statistical Package for the Social Science program (SPSS), version 16.0 (Chicago, IL). Data was presented using means and standard deviation and frequency number and percent according to type of variable. Chi square test was used to compare the studied categorical variables between medical and engineering students, and student's t test was used to compare the continuous variables, with p values of less than 0.05 was used to indicate statistically significant differences.

**Ethical consideration:-**

Permissions were obtained from the officials of medical and engineering faculties after approval of the proposal and data collection tools. Participants were provided with full explanation with the emphasis on the right of the subject not to participate. Data privacy and confidentiality were also taken into consideration as the questionnaire was without name, and data were entered and analyzed by the researchers only.

**Results:-**

Out of the invited 240 students, only 200 students filled and returned the questionnaire with a response rate of 83.3%. The identification criteria are presented in Table 1. The mean age of the studied students was  $21.3 \pm 1.7$  years, half of them were medical students and other half were engineering students. More than half of the studied student (56%) reported that their family income is more than 10,000 SR, while the other half is distributed between other three categories. Table 2 presented the knowledge of students about health effects of physical activity. One-fourth of the studied students have good knowledge about the health effects of physical activity. This level was increased to become 36% in medical and decreased to become 20% among students of engineering faculty. No significant differences were observed between students according to their mother and father education, although the level of good knowledge was higher among students with highly educated father and mother.

**Table1:- Characteristics of studied students**

Characteristics	N=200
Student age in years, mean $\pm$ SD ( range)	21.3 $\pm$ 1.7 (18 -32 )
Faculty	
Medical	100 (50%)
Engineering	100 (50%)
Family income	
$\leq$ 3000 SR	20 (11% )
> 3000- 5000 SR	25 ( 13% )
> 5000- 10000 SR	42 ( 20% )
> 10000 SR	95 ( 56% )

**Table 2:- Knowledge of studied students about physical activity by characteristics.**

	Level of knowledge			P. value
	Good n (%)	Fair n (%)	Poor n (%)	
All subjects	56 (25)	114 (70)	17 (5)	-
Faculty				
Medical	36 (36)	54(54)	4(4)	0.02
Engineering	20 (20)	61(61)	13(13)	
Mother education				
Less than secondary	15 (23)	51 (44)	4 (24)	0.1
Secondary	11 (20)	19 (16.5)	8 (47)	
University and higher	30 (49)	45(39)	5 (29)	
Father education				
Less than secondary	12(21)	30 (27)	6 (35)	0.3
Secondary	13(23)	27(23)	4 (23)	
University and higher	31(54)	58(51)	7 (41)	

Table 3 presented the percent distribution of the studied scale of physical activity items among the studied students by faculty. There have been statistically significant differences between medical and engineering students regarding most of the studied items with the higher percent's of disagree were among the engineering students.

**Table 3:-**Frequency distribution of the studied students by physical activity attitude scale.

Attitude items**	Faculty	1%	2%	3%	4%	5%	PValue*
Mod Physical Activity is essential for health	Medicine	25.0	33.0	17.0	21.0	4.0	<.001*
	Engineering	35.0	23.0	19.0	19.0	4.0	
Physical Activity decrease tension and anxiety	Medicine	53.0	38.0	9.0	.0	0	0.01*
	Engineering	61.0	31.0	6.0	1.0	0	
Enjoyment by Physical Activity with others	Medicine	44.0	46.0	5.0	3.0	1.0	0.01*
	Engineering	49.0	34.0	13.0	4.0	0.0	
High intense Physical Activity is essential for fitness	Medicine	8.0	46.0	29.0	11.0	6.0	0.01*
	Engineering	22.0	42.0	23.0	9.0	4.0	
Physical Activity lead to stress relief and relaxation	Medicine	2.0	5.0	5.0	43.0	45.0	0.002*
	Engineering	7.0	6.0	8.0	39.0	40.0	
Physical Activity improve general health	Medicine	7.0	32.0	12.0	41.0	8.0	0.01*
	Engineering	13.0	32.0	10.0	35.0	6.0	
Physical Activity lead to satisfaction	Medicine	46.0	38.0	11.0	2.0	3.0	0.80
	Engineering	49.0	31.0	12.0	5.0	3.0	
High intense Physical Activity not essential for gen Health	Medicine	68.0	27.0	4.0	0.0	1.0	0.20
	Engineering	68.0	21.0	9.0	1.0	1.0	

\*Significant

\*\*1= totally disagree; 2= disagree 3= neutral; 4= agree; 5= totally agree

Table 4 presented the practice of high intensity physical activity among the studied students. Although no statistically significant differences between the students of two faculties, the percent of engineering students practice heavy weight lifting, high speed bicycle and swimming was higher among them, while football and basketball practice was higher among medical students.

**Table 4:-**Practice of high intensity physical activity by the studied faculties

High intensity physical activity	Medical students* (n=91)		Engineering students*(n= 94)		P value
	No	%	No	%	
Heavy weight lifting or land plough	22	22	27	27	0.45
High speed bicycle ride or running	17	17	20	20	0.53
Football or basketball	44	44	31	31	0.10
Swimming or skipping rope	8	8	16	16	0.35

\* Missing data of 9 medical students and 5 engineering students.

Table 5 presented the practice of moderate intensity physical activity among the studied students. The percent of medical students practicing light lifting was higher among them compared with students of engineering faculty. The practice of other moderate physical activity was high among engineering students but without statistically significant differences.

**Table 5:-**Practice of moderate intensity physical activity by the studied faculties

High intensity physical activity	Medical students* (n=91)		Engineering students* (n= 94)		P value
	No	%	No	%	
Light weight lifting	49	49	39	39	0.36
Riding bicycle with usual speed	6	6	8	8	0.86
Volley ball or Bing bong	21	21	25	25	0.80
Manual house sweep or washing	8	19	21	21	0.76

\* Missing data of 9 medical students and 5 engineering students.

Table 6 showed the distribution of the studied students by their walking practice. There has been no significant difference between medical and engineering students regarding the mean number of walking session per week. It was  $3.50 \pm 2.6$  among medical students and  $3.50 \pm 2.6$  among engineering students. Also the mean number of hours of waking per session showed no statistically significant differences, although the mean number of hours of walking was higher among medical students ( $3.50 \pm 2.6$ ) compared to that in engineering students ( $1.20 \pm 3.1$ )

**Table 6:-** Practice of walking among the study students .

	Medical students*(n=91)	Engineering students*(n= 94)	P value
Number of days of walking per week	3.50 ± 2.6	3.50 ± 2.6 2.7	0.20
Number of hours of walking per session	3.50 ± 2.6	1.20 ± 3.1	0.40

\* Missing data of 9 medical students and 5 engineering students.

### Discussion:-

Sports and physical activity are important during adolescent years, and they are more important when the individual must spend time in inactivity. These forms of activity contribute also to mental health by offering opportunities, first, to express aggressions that do not find an outlet because of restrictions of school; second, to be constructive or creative; and third to relax and thus ease the tensions created by everyday living.<sup>[11]</sup>

The present study aimed to study knowledge, attitude and practice of physical activity among Taibah University students. The findings revealed that only One-fourth of the studied students have good knowledge about the health effects of physical activity with the level was increased to 36% in medical and decreased to 20% among students of engineering faculty. The level of knowledge, however, was found to increase in the students of both faculties by increasing the educational level of their parents. As the studied students were of 1<sup>st</sup> and 2<sup>nd</sup> grades, these findings the level of knowledge the students received during the secondary school period. These findings appeared consistent with the findings of a recent study carried out in India and included 161 eligible sixth semester medical undergraduate students.<sup>[11]</sup> The study reported that Knowledge regarding different types of exercise was fairly low among the study participants. Only 9.3% of the students were aware of the recommended level of the physical activity and its impact of health. Good level of knowledge of the health benefits of regular physical activity are required to achieve these, but do not promote activity in a way that will have an impact on the population level

The present study revealed a very favorable attitude towards physical activity for some studied attitude items. For other items, there have been favorable attitudes towards physical activity with statistically significant differences between medical and engineering students. Similar results were also obtained in the previous Indian study where the attitude of the participants toward the physical activity was favorable; yet only one-third (32.3%) subjects adhered to recommended guidelines. In that study, boys (39.8%) were found to be significantly more active than girls (20.6%).<sup>[12]</sup> Also, in a Canadian study including 546 4<sup>th</sup> medical students showed that attitudes toward healthy living were related to physical activity levels, and students who engaged in more strenuous physical activity were more likely to perceive exercise counseling as being highly relevant to their health. Overall, 69% of students perceived exercise counseling to be highly relevant, but 86% thought that their training in this area was less than extensive.<sup>[13]</sup>

The practice of physical activity in the current study showed significant variation among the studied students. However, the percent of practice amongst them was low for some types of physical activity and did not exceed 50 % for other types. The walking session number and time per week showed no significant differences in the studied medical and engineering students.

Previous studies in Saudi Arabia showed a very low physical inactivity and that is the inactivity was more in females than in males.<sup>[8-10]</sup> Many categories are effecting the increasing of physical inactivity such as gender, education levels (decreased with the increasing of education levels), and the region (i,e more in the central area and less in the southern region). Further, active individuals exhibited lower values of BMI and waist circumference.<sup>[8-9]</sup> Moreover, the previous Western studies reported that most physicians, residents, and medical students do not believe they are adequately prepared to create exercise prescriptions for their patients.<sup>[14-17]</sup> In the United States, medical student exercise behavior has also been shown to positively correlate with their attitudes about exercise prescription.<sup>[18]</sup> It is very important to increase the level of adolescent participation in physical activity.

The present study was the first to study the knowledge, attitude and practice in Taibah University and may be considered as the nucleus of other more studies about physical activity in the University. The response rate was relatively high and this consolidates the obtained results. However, the study sampling was a relatively of low size and included only junior students from two faculties of first and second years. Also, the study did not include female students and the study was restricted to male students. But all these limitations in this study were attributed to the limited resources and time as this study was a practical part of the medical research course curriculum we followed during the study year 2014/15. Accordingly, we recommend the researchers in the university to carry out a large

well designed research to study this important issue in more details and on large sample including junior and senior students, as well as male and female students, from several faculties.

In summary, the present study revealed a low level of e knowledge and practice regarding the physical activity among the studied junior students in the faculty of medicine and engineering. The attitude of the studied students towards physical activity was favorable for some studied items compared with the results of similar studies. There is a need to provide an enabling environment for promoting the physical activity among the university students. Also, more efforts and studies are needed in the university campus regarding this important issue, and to include both junior and senior students of several faculties in these studies.

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