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RESEARCH ARTICLE

PREVALENCE OF PHYSICAL ACTIVITY, AND PERCEIVED BARRIERS AMONG 6TH YEAR MEDICAL STUDENTSAT IN UMM AL-QURA UNIVERSITY IN MAKKAH AL-MUKARRAMAH, IN 2016.

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Abstract

Objectives of Study: To estimate prevalence of physical activity and to determine perceived barriers of physical activity among 6th year medical students.

Methodology: This cross-sectional study was conducted on 175 6th year medical students at Umm Al-Qura University in Makkah Al-Mukarramah during 2016.

Results: Only 13% had high physical activity, 45% had moderate physical activity, and 42% had a low grade of physical activity. Regarding benefits of physical activity, participants mostly agreed that "exercise improves my flexibility," with a mean score of 3.34, and "Exercising increases my level of physical fitness," with a mean score of 3.39. Regarding barriers for performing physical activity, participants mostly agreed that "There are few places to exercise," with a mean score of 1.88, and "Places for exercise are far away," with a mean score of 2.04. Participants' mean score regarding benefits of physical activity was 92.1±9.9 (out of maximum of 116), while that for barriers of physical activity were 34.9±6 (out of maximum of 56). The mean total score was 126.9±13 (out of maximum of 172) .Significant higher grade of physical activity was found among younger than 25 years old (p=0.040) and among single students (p=0.001).

Conclusions: Almost half of medical students have low grade physical activity. Grades of physical activity are better among younger medical students and those with normal BMI. Medical students' attitude toward physical activity is positive. The main stated benefits for physical activity are exercise improves my flexibility and increases level of physical fitness. The main perceived barriers are there are few places to exercise and places for exercise are far away.

Introduction:-

In the past few decades, Saudi Arabia has witnessed tremendous changes in life style and socio-economic status. Physical inactivity become one of the major public health problem in Saudi Arabia. A report about physiacl activity

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in KSA estimated that among male and female aged between 15-65 years old, more than 68% are with a low activity, about 16% are with moderate activity and 16% are with high activity (1).

During 1995-2000, the national epidemiological health survey was performed and included 17,395 Saudi males and females aged 30-70 years. It showed that females were more inactive than males (98.1% and 93.9%, respectively (2).

World wide, the leading cause of mortality are the non communicable diseases ncds and ksa has developed alarming increase of NCDs.(3)(4) Also, physical inactivity estimated as the 4th leading cause of death "account for 6% death globally".(5) However, physical activity play an important role in the primary prevention of NCDs.(6) Thus, physical activity is essential to maintaine health and well being for all age group.

Physical activity has been defined as "any bodily movement produced by the contraction of skeletal muscle that increase energy expenditure above the basal level".(6)

The minimum recommendation for physical activity by WHO are 150 minutes of moderate intensity aerobic physical activity per week or minimum of 75 minutes of vigorous intensity aerobic physical activity per week or equivalent combination of moderate intensity aerobic physical activity and vigorous intensity aerobic physical activity.(5)

Little is known about the barrier of physical activity among Saudi people. They may reflect environmental (external barriers) for example a lack of sport facilities, a lack of support from parents and friends and lack of time because of other responsibilities.(2,7) On the other context, perceived barriers may related to individual (personal, internal barriers), for example a lack of self-motivation, lack of skills and energy, fear of being injured. (2,7) In several studies of adolescents, perceived barriers were inversely related to the level of physical activity.

The importance of investigating such problems specifically among the medical students is related mainly to the fact that they are the future health-care providers and have a significant role in health promotion and dissemination of healthy lifestyle to the public. In addition, understanding common barriers to physical activity and initiating strategies to overcome them may help to raise the level of physical activity and to be part of their daily life. This study aimed to increase the awareness about the importance of physical activity, and to overcome the barriers of physical activity among 6th-year medical student in Makkah AL-Mukrramah. Therefore, the level of physical activity will be raised.

Methodology:-

This cross-sectional study was conducted among 6thyear medical students in Umm Al-Qura University in Makkah Al-Mukarramah during the academic year 2015-2016, 175 students were involved in the study. The questionnaire consisted of 3 main parts: **1.socio-demographic and personal characteristics (**age, gender, marital status, grade, weight, height, body mass index (BMI), cigarette smoking status, current chronic health problems). 2. **international physical activity questionnaire (ipaq)** (5)**.** The reliability and validity of the questionnaire were first tested in 2000 across 12 countries (14 sites). The findings suggest that it has acceptable properties for use in many settings, and is suitable for national population-based prevalence studies of participation in physical activity. (5) all participants were instructed to answer the questionnaire's four parts, which include the number of days per week and minutes per day spent on {1} vigorous intensity activity, {2} moderate intensity activity, {3} walking for at least 10 minutes at one time, and {4} hours spent sitting and/or lying down (excluding sleeping) per day. The physical activity score was calculated as the weekly time spent (in minutes) in moderate activities (including walking) plus twice the weekly time spent in vigorous activities. Individuals with a score of 0 were considered to be with "low" activity; those with scores of 10 to 149, were considered as "moderately active"; and those with a score of 150 or more, were considered as "highly active" to achieve health benefits.(5)

The exercise benefits/barriers scale (EBBS) (9):-

Barriers to performing physical activity were measured by this scale based on 43-items (14 items related to the barriers scale and 29 related to the benefits scale). This scale presents answer options of the likert type with rating levels varying from one (1) to four (4): strongly agree (4), agree (3), disagree (2), strongly disagree (1). When used together, the ebbs have a reverse score of the items of the barriers scale, ranging from 43 until 172. The scores for

the benefits scale range from 29 to 116 and those for the barriers scale range from 14 to 56, representing participants' perception of benefits and barriers, respectively.

The questionnaire sheets were given by the researcher to the group leaders with the list of selected student's names. Then, each group leader distributed the sheets to the students whose names were in the list during their break time, which were then collected back after being filled by students and finally were given back to the researcher. In case a selected student was absent, the procedure of data collection was repeated with that student on the next day, till all calculated sample size has been fulfilled.

Data was analyzed using the statistical package of social sciences (spss version 20). Descriptive statistics (i.e., frequency, percentage, mean and standard deviation) were calculated. Tests of significance, i.e., chi square test, independent unpaired t-test and analysis of variance (anova), were applied to identify differences in grades of physical activity and perceived barriers against physical activity according to students' personal characteristics. P–values less than 0.05 were considered as "statistically significant".

Limitations:-
This study exclusively comprised a specific group in the community (6^{th} year medical students), which limits the generalizability of results. The available time allocated for research was limited.

Results:-

Table (1) shows that 62.3% of participants were less than 25 years old. About half of them (52%) were males. Most of them (82.9%) were single. Almost one fifth of them (18.3%) were smokers. More than one fourth of participants (27.4%) were overweight while 12% were obese. Almost one tenth of them (9.7%) had chronic diseases. Regarding participants' overall academic grades, 13.7% had A, 30.3% had B, 44% had C, and 12% had D.

Figure (1) shows that 42% of participants had low grade of physical activity (95% CI: 38.3-45.7%), 45% had moderate physical activity (95% CI: 41.2-48.8%), while only 13% had high physical activity (95% CI: 10.5-15.5%).

Table (2) shows that, regarding benefits of physical activity, participants mostly agreed that "exercise improves my flexibility", with a mean score of 3.34 and "Exercising increases my level of physical fitness", with a mean score of 3.39. On the other hand, the participants least agreed with "Exercising increases my acceptance by others", with a mean score of 2.89 and "exercising is a good way for me to meet new people", with a mean score of 2.92.

Table(3) shows that, regarding barriers for performing physical activity, participants mostly agreed that "There are few places to exercise", with a mean score of 1.88 and "Places for exercise are far away", with a mean score of 2.04. On the other hand, the participants least agreed with "I think people in exercise clothes look funny", with a mean score of 2.98 and "I am too embarrassed to exercise", with a mean score of 2.96.

Table (4) shows that, after the summation of scores for the physical activity benefits' statements, participants' mean score regarding that total was 92.1+9.9 (out of a maximum of 116). Similarly, after the summation of scores for the physical activity barriers' statements, participants' mean score regarding that total was 34.9+6 (out of a maximum of 56). Therefore, their mean total score for physical activity was 126.9+13 (out of a maximum of 172).

Table (5) shows that participants' grades of physical activity differed significantly according to their age (p=0.040), with more percentage of higher grade among medical students younger than 25 years old. Moreover, participants' grades of physical activity differed significantly according to their BMI (p=0.046), with more percentage of higher grade among medical students with normal BMI. However, participants' grades of physical activity did not differ significantly according to their gender, marital status, smoking status, presence of a chronic disease or their overall academic grades.

Table (6) shows that medical student' total scores for benefits and barriers of physical activity did not differ according significantly to their personal characteristics. Also it shows that medical student' scores for benefits of physical activity did not differ according significantly to their personal characteristics. And shows that medical students' scores for barriers of physical activity differed significantly according to their marital status (p=0.001), with better scores among single students. However, their scores did not differ significantly according to their age groups, gender, smoking status, BMI, and presence of chronic disease or overall academic grades.

Table (1):- personal characteristics of study sample.

Personal characteristics	No.	%
Age groups		
1. <25 years	109	62.3
2. 25+ years	66	37.7
Gender		
3. Male	91	52.0
4. Female	84	48.0
Marital status		
5. Single	145	82.9
6. Married	30	17.1
Smoking status		
7. Nonsmoker	143	81.7
8. Smoker	32	18.3
Body mass index groups		
9. Normal	106	60.6
10. Overweight	48	27.4
11. Obese	21	12.0
Presence of a chronic disease		
12. Absent	158	90.3
13. Present	17	9.7
Overall academic grade		
14. A	24	13.7
15. B	53	30.3
16. C	77	44.0
17. D	21	12.0

Table (2-a):- medical students' attitude regarding benefits of physical activity.

	Strongly disagree		Disagree		Agree		Strongly agree		Mean
Statements	No.	%	No.	%	No.	%	No.	%	Score
I enjoy exercise	3	1.7	17	9.7	107	61.1	48	27.4	3.14
Exercise decreases feelings of stress and tension for me	1	0.6	12	6.9	106	60.6	56	32.0	3.24
Exercise improves my mental health	1	0.6	9	5.1	97	55.4	68	38.9	3.33
Exercising prevents heart attacks	7	4.0	16	9.1	96	54.9	56	32.0	3.15
Exercise increases muscle strength	1	0.6	4	2.3	108	61.7	62	35.4	3.32
Exercise gives me a sense of personal accomplishment	0	0.0	18	10.3	100	57.1	57	32.6	3.22
Exercising makes me feel relaxed	2	1.1	19	10.9	116	66.3	38	21.7	3.09
Exercising lets me have contact with friends and persons i enjoy	4	2.3	40	22.9	92	52.6	39	22.3	2.95
Exercising will keep me from having high blood pressure	2	1.1	15	8.6	98	56.0	60	34.3	3.23
Exercising increases my level of physical fitness	0	0.0	6	3.4	95	54.3	74	42.3	3.39
Exercise improves muscle tone	7	4.0	5	2.9	104	59.4	59	33.7	3.23
Exercising improves functioning of my cardiovascular system	2	1.1	6	3.4	100	57.1	67	38.3	3.33
I have improved feelings of wellbeing from exercise	1	0.6	16	9.1	105	60.0	53	30.3	3.20
Exercise increases my stamina	9	5.1	20	11.4	89	50.9	57	32.6	3.11
Exercise improves my flexibility	1	0.6	10	5.7	92	52.6	72	41.1	3.34

Exercise improves my disposition	6	3.4	17	9.7	108	61.7	44	25.1	3.09
Exercising helps me sleep better	1	0.6	16	9.1	111	63.4	47	26.9	3.17

Table (2-b):-medical students' attitude regarding benefits of physical activity (continued).

	Strongly disagree		Disagree		Agree		Strongly agree		Mean
Statements	No.	%	No.	%	No.	%	No.	%	Score
I will live longer if i exercise	2	1.1	24	13.7	107	61.1	42	24.0	3.08
Exercise helps me decrease fatigue	4	2.3	26	14.9	109	62.3	36	20.6	3.01
Exercising is a good way for me to meet new people	9	5.1	25	14.3	112	64.0	29	16.6	2.92
My physical endurance is improved by exercising	2	1.1	8	4.6	123	70.3	42	24.0	3.17
Exercising improves self-concept	2	1.1	11	6.3	115	65.7	47	26.9	3.18
Exercising increases my mental alertness	6	3.4	11	6.3	106	60.6	52	29.7	3.17
Exercise allows me to carry out normal activities without becoming tired	2	1.1	16	9.1	111	63.4	46	26.3	3.15
Exercise improves quality of work	5	2.9	17	9.7	114	65.1	39	22.3	3.07
Exercise is good entertainment	4	2.3	19	10.9	106	60.6	46	26.3	3.11
Exercising increases my acceptance by others	7	4.0	35	20.0	103	58.9	30	17.1	2.89
Exercise improves overall body functioning for me	3	1.7	9	5.1	96	54.9	67	38.3	3.30
Exercise improves the way my body looks	2	1.1	5	2.9	70	40.0	98	56.0	3.11

Table (3):- medical students' attitude regarding barriers against physical activity.

Statements	Strongly agree		Agree		Disagree		Strongly disagree		Mean
	No.	%	No.	%	No.	%	No.	%	Score
Exercising takes too much of my time	32	18.3	55	31.4	65	37.1	23	13.1	2.45
Exercise tires me	21	12.0	60	34.3	73	41.7	21	12.0	2.54
Places for exercise are far away	55	31.4	69	39.4	40	22.9	11	6.3	2.04
I am too embarrassed to exercise	7	4.0	37	21.1	87	49.7	44	25.1	2.96
It costs too much to exercise	33	18.9	72	41.1	50	28.6	20	11.4	2.33
Exercise facilities do not have convenient schedules for me	29	16.6	85	48.6	51	29.1	10	5.7	2.24
I am fatigued by exercise	16	9.1	50	28.6	88	50.3	21	12.0	2.65
My spouse (or significant other) does not encourage exercising	20	11.4	70	40.0	66	37.7	19	10.9	2.48
Exercise takes too much time from family relationships	16	9.1	62	35.4	80	45.7	17	9.7	2.56
I think people in exercise clothes look funny	6	3.4	36	20.6	86	49.1	46	26.3	2.98
My family members do not encourage me to exercise	17	9.7	61	34.9	70	40.0	27	15.4	2.61
Exercise takes too much time from my family responsibilities	23	13.1	55	31.4	77	44.0	20	11.4	2.54
Exercise is hard work for me	18	10.3	56	32.0	75	42.9	26	14.9	2.62
There are few places to exercise	60	34.3	81	46.3	29	16.6	5	2.9	1.88

Table (4):- medical students' total scores (mean+sd) regarding physical activity's benefits and barriers.

Categories	No. Of items	Maximum	Mean+sd
Benefits	29	116	92.1+9.9
Barriers	14	56	34.9+6.0
Total	43	172	126.9±13.0

Table (5):- medical students' grades of physical activity according to their personal characteristics.

	Low		Moderate		High		P
Personal characteristics	No.	%	No.	%	No.	%	Value
Age groups							
18. <25 years	45	41.3	45	41.3	19	17.4	χ^2=6.5
19. 25+ years	29	43.9	34	51.5	3	4.5	P=0.040
Gender							
20. Male	44	48.4	34	37.4	13	14.3	χ^2=4.6
21. Female	30	35.7	45	53.6	9	10.7	P=0.099
Marital status							
22. Single	61	42.1	65	44.8	19	13.1	χ^2=0.2
23. Married	13	43.3	14	46.7	3	10.0	P=0.897
Smoking status							
24. Nonsmoker	60	42.0	67	46.9	16	11.2	χ^2=6.5
25. Smoker	14	43.8	12	37.5	6	18.8	P=0.424
Body mass index groups							
26. Normal	39	36.8	48	45.3	19	17.9	
27. Overweight	22	45.8	23	47.9	3	6.3	χ^2=1.7
28. Obese	13	61.9	8	38.1	0	0.0	P=0.046
Presence of a chronic disease							
29. Absent	67	42.4	71	44.9	20	12.7	χ^2=0.03
30. Present	7	41.2	8	47.1	2	11.8	P=0.985
Overall academic grade							
31. A	11	45.8	12	50.0	1	4.2	
32. B	23	43.4	23	43.4	7	13.2	
33. C	34	44.2	33	42.9	10	13.0	χ^2=3.7
34. D	6	28.6	11	52.4	4	19.0	P=0.723

Table (6):-medical students' total scores for benefits and barriers of physical activity (mean+sd) according to their personal characteristics.

Personal characteristics	No.	Total scores for benefits and barriers		Scores for benefits		Scores for barriers	
		Mean+sd	P-value	Mean+sd	P-value	Mean+sd	P-value
Age groups							
35. <25 years	109	126.9+13.5	T=0.057	92.0+10.7	T=0.149	34.9+5.8	T=0.121
36. 25+ years	66	127.0+12.3	P=0.942	92.2+8.4	P=0.882	34.8+6.5	0.904
Gender							
37. Male	91	126.4+13.9	T=0.624	91.3+10.2	T=1.107	35.1+6.3	T=0.462
38. Female	84	127.6+12.0	P=0.533	92.9+9.5	P=0.270	34.7+5.8	0.645
Marital status							
39. Single	145	127.8+13.0	T=1.930	92.3+9.8	T=0.589	35.5+5.8	T=3.255
40. Married	30	122.8+12.6	P=0.055	91.1+10.6	P=0.557	31.7+5.6	0.001
Smoking status							
41. Nonsmoker	143	127.3+13.0	T=0.753	92.3+9.9	T=0.656	35.0+5.9	T=0.550
42. Smoker	32	125.4+13.0	P=0.452	91.0+9.8	P=0.513	34.3+6.6	0.583
Body mass index groups							
43. Normal	106	127.5+13.1		92.3+9.9		35.2+5.9	
44. Overweight	48	126.7+13.5	F=0.457	92.2+9.5	F=0.257	34.5+6.4	F=0.497

45. Obese	21	124.6+11.7	P=0.634	90.6+10.8	P=0.774	34.0+5.8	0.609
Presence of a chronic dise							
46. Absent	158	127.4+12.7	T=1.437	92.3+9.8	T=0.856	35.1+5.8	T=1.697
47. Present	17	122.6+15.1	P=0.153	90.1+11.1	P=0.393	32.5+7.5	0.091
Overall academic grade							
48. A	24	131.2+13.7		93.4+9.4		37.8+6.7	
49. B	53	126.3+11.7		91.6+9.3		34.7+5.4	
50. C	77	126.0+13.2	F=1.032	92.1+10.3	F=0.195	33.9+5.8	F=2.591
51. D	21	127.0+13.0	P=0.380	91.8+10.6	P=0.899	35.3+7.0	0.054

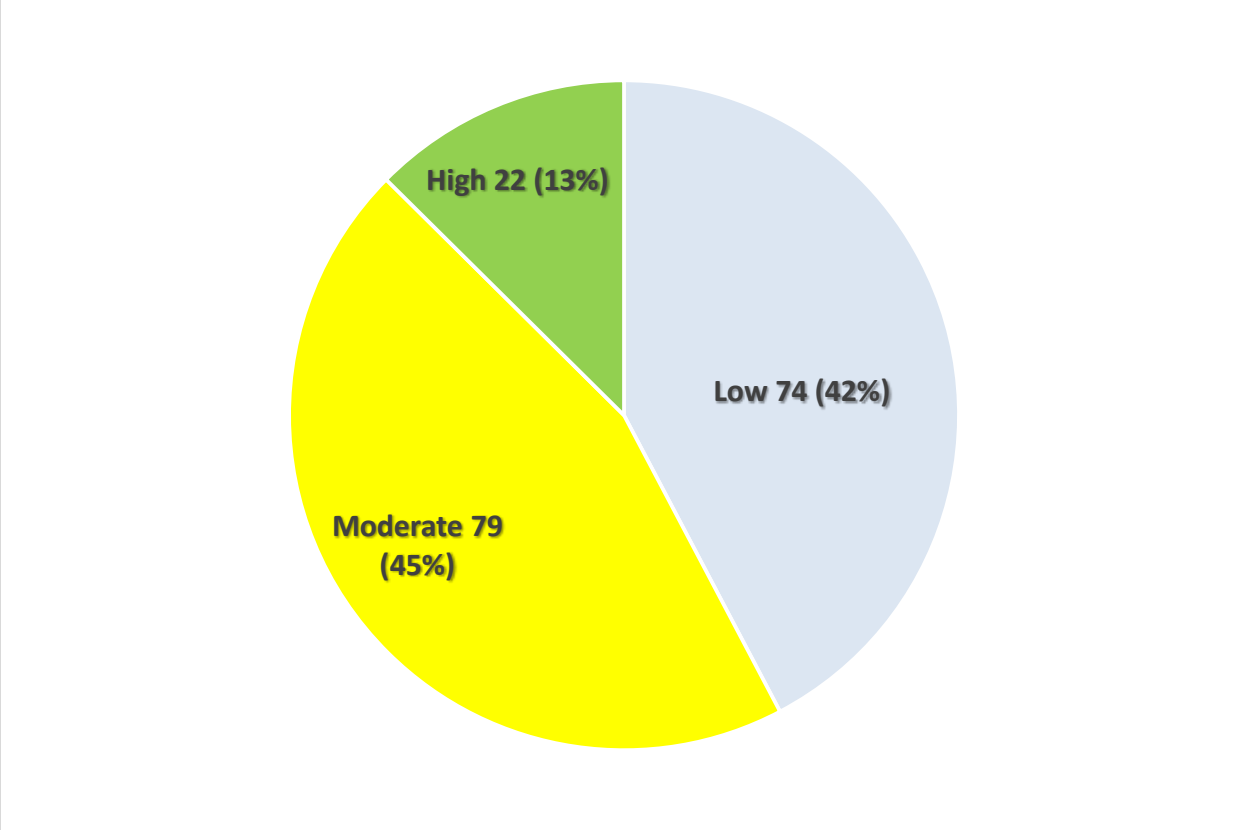

Figure (1):-grades of physical activity among medical students.

Discussion:-

Physical inactivity is a worldwide public health problem. Being physically active is an important component of a healthy lifestyle (49). Therefore, medical students, who will be the future physicians, should maintain their physical activity to keep healthy and continue as role models for their patients and to be able to motivate them regarding physical activity (50).

This study aimed to estimate the prevalence of physical activity and to determine perceived barriers to physical activity among 6th-year medical student, in Makkah Al-Mukarramah.

Results of the present study revealed that a relatively high proportion of medical students (18.3%) were smokers and 27.4% were overweight, while 12% were obese.

These findings may reflect the need to provide health education about the importance of adopting healthy lifestyle among medical students to keep healthy, and to continue as role models who can provide motivation and counseling for their patients (50).

Rao et al. (51) noted that, compared to other university students, medical students usually have better knowledge regarding healthy lifestyle and dietary habits. Nevertheless, there is no significant evidence to indicate that medical students' knowledge will be successfully interpreted into properly maintaining good health and physical activity.

Lobelo et al. (52) emphasized the association between healthier doctor habits and better patient counseling attitudes/practices of such habits, regarding smoking, nutrition, and many other habits.

Results of the present study are in agreement with those reported by several studies. In Saudi Arabia, Wali (53) reported that prevalence of smoking among medical students at King Abdul-Aziz College of Medicine, was 14%, while in Riyadh, Al-Haqwi et al. (54) reported that a prevalence rate of 19%. In Aseer Region, Saudi Arabia, Alzahrani et al. (55) reported that overweight and obesity among residents and postgraduate medical students were 36% and 23.2%, respectively.

In Pune, India, Fernandez et al. (56) reported that the proportion of overweight/obesity among medical students was 13.2%. In Malaysia, Gopalakrishnan et al. (57) found that 14.8% of medical students were overweight, while 5.2% were obese.

Estabrook (58) highlighted the importance of introducing health promotion educational programs into undergraduate medical students' curricula aiming to improve their wellness and health care seeking practices. This will emphasize that an essential part of becoming a physician is through taking care of oneself.

This study showed that 42% of medical students had low grade of physical activity, 45% had moderate physical activity, while only 13% had high physical activity.

These findings are in agreement with those of Awadalla et al. (5), who found that only 12.9% of Health Colleges' students in King Khalid University, southwestern Saudi Arabia, were performing high intensity activity.

Similarly, Anand et al. (59) reported that only 32.3% of medical students in Delhi, India adhered to the recommended guidelines regarding practicing physical activities. In Thailand, Wattanapisit et al. (49) reported that less than half of the participants (49.5%) were physically active.

The low prevalence of physical activity among medical students has been explained by Garry et al. (60), who noted that medical curricula usually miss the positive association between physical activity on health.

Ángyán et al. (61) explained the low physical activity among medical students by that it is possibly related to their heavy university study obligations that leave little time for practicing physical activities and sports. They recommended that medical curricula should direct students' attitude toward exercising.

Al-Hazzaa et al. (3) explained the low prevalence of physical activity among university students in Saudi Arabia by the students' great reliance on cars rather than walking or bicycling, even for short-distance travel, sedentary lifestyles and the limited quality physical education programs provided for students.

However, in Bangalore, India, Padmapriya et al. (62) reported that 84.5% of medical students were involved in high to moderate levels of physical activity meeting the IPAQ high active and moderate active category. In Canada, Holtz et al. (63) reported that final year medical students at the University of British Columbia largely met the Canadian Society for Exercise Physiology guidelines with strenuous physical activity rather than moderate physical activity.

It is to be noted that the variations in results of observed medical students' physical activities reported by different studies are difficult to compare due to marked differences in diverse guidelines.

Frank et al. (64) stressed that medical students' personal habits regarding physical activity are important predictors for their future counseling practices. Physicians who are physically inactive are less likely to provide exercise counseling to their patients, and even if they do so, they provide less credible role models for their patients to adhere to healthy behaviors.

Results of the present study revealed that medical students' attitude toward physical activity is generally positive. Regarding benefits of physical activity, the current study showed that participants mostly agreed that exercise improves flexibility and increases the level of physical fitness. However, they least agreed with were that exercising increases acceptance by others and it is a good way to meet new people. Medical students' scores for benefits of physical activity did not differ significantly according to their personal characteristics.

Rao et al. (51) stated that physical activity of medical students is significantly associated with their own attitudes toward health promotion and illness prevention. Therefore, positive attitudes toward physical activity are important for future health professionals. They added the main benefits of physical activity that were stated by medical students were to improve fitness, promote and maintain health, and to control body weight.

On the other hand, regarding barriers for performing physical activity, participants in the present study mostly agreed that there are few places to exercise and places for exercise are far away. Participants least agreed that people in exercise clothes look funny and being too embarrassed to exercise. Medical students' scores for barriers of physical activity differed significantly according to their marital status, with better scores among single students, but did not differ significantly according to their age groups, gender, smoking status, BMI, the presence of chronic disease or overall academic grades.

Findings of the present study are in agreement with those of Anand et al. (59) in Delhi, India, who reported that the attitude of the medical undergraduate students toward physical activity was quite favorable.

In King Khalid University, southwestern of Saudi Arabia, Awadalla et al. (5) reported several barriers against physical activity among university students, e.g., limited time, having other important academic priorities, lack of accessible and suitable sports place.

In Riyadh, Saudi Arabia, Al-Rafaee et al. (21) stated lack of time due to heavy university study schedule as a significant barrier to the physical activity.

Rao et al. (51) reported that lack of time and motivation were stated by more than half of medical students to be the most important barriers to the physical activity.

The importance of medical students' positive attitude toward physical exercise has been stressed by Lobelo et al. (52), who reported that medical students who consider exercise as beneficial with a high priority were more likely after graduation to counsel their patients on exercise.

Results of the present study showed that medical students' grades of physical activity differed significantly according to their age, with more percentage of high physical activity grades among younger medical students. Moreover, participants' grades of physical activity differed significantly according to their BMI, with more percentage of high physical activity grades among medical students with normal BMI. However, grades of physical activity did not differ significantly according to their gender, marital status, smoking status, the presence of a chronic disease or their overall academic grades.

Hull et al. (65) noted that physical activity tends to decrease as young adults age from 24 to 26 years old. Nevertheless, the marriage did not significantly change physical activity.

Labban (66) found that physical activity among Syrian university students was inversely associated with the prevalence of overweight/obesity.

Hosseinzadeh (67) described the relation between physical activity and obesity by that both physical activity and weight gain have inverse effects on each other. It is not clear which one can predict the other.

In Turkey, Nacar et al. (68) found that younger medical students were more active than older ones. Judge et al. (69) reported that among undergraduate university students in the Midwest United States, students' age was an important variable predicting physical activity patterns, as older males were more likely to be less involved in physical exercise training.

Judge et al. (69) reported that higher achieving students appear to have higher physical activity levels. This finding has been explained by Ayotte et al. (70), who stated that students with higher academic achievement usually have more intrinsic motivation to study and work harder, including the higher levels of physical activity in this population.

In agreement with the results of the present study, Awadalla et al. (5) reported that grades of physical activity did not differ significantly according to the gender of students at health college students in King Khalid University. However, Mohammed et al. (71) reported that prevalence of physical activity among university students was less among females (52%) than their male counterparts (81.2%).

The presence of the significant difference in physical activity according to gender among university students in general, while its absence among medical students may be because both male and female of medical students become equally burdened by their medical studies which usually oblige them to spend most of their daily activities through studying.

Awadalla et al. (5) noted that being a medical student was associated with a high risk of physical inactivity. Zhao et al. (72), in China, stressed that heavy academic studies constitute one of the main barriers to participation in physical activity among university students.

Mesquita et al. (73) reported that when compared with non-smokers, smokers were less physically active. On the other hand, physically active persons were less likely to initiate smoking and progress to regular smoking. Moreover, smokers were less likely than nonsmokers to participate in sports or engage in other regular exercise.

The observed low prevalence of physical activity among medical students should ring a warning bell since physical inactivity is responsible for several serious noncommunicable diseases, e.g., ischemic heart diseases, and type 2 diabetes mellitus, and it is also a cause of premature mortality (74).

Conclusions:-

Based on results of the present study, the following can be concluded:
Almost half of medical students have low grade physical activity. Their grades of physical activity are better among younger medical students and those with normal BMI.

In addition to physical inactivity, a relatively high proportion of medical students are smokers and overweight/obese. Medical students' attitude toward physical activity is generally positive.

The main stated benefits for physical activity are exercise improves my flexibility and increases level of physical fitness. On the other hand, the main perceived barriers are there are few places to exercise and places for exercise are far away. The authors recommended:

1. Introducing health promotion educational programs into the undergraduate medical students' curricula aiming to improve their wellness and health care seeking practices.
2. To provide playgrounds and a gymnasium hall suitable to practice sports and physical exercise at the university campus for boys and other ones at the university campus for girls. There should be expert trainers to help medical students exercise properly.
3. The smoking cessation program should cover university students to help students who smoker quit smoking.
4. To decrease the academic load on students to allow more time to participate in physical activity.
5. A larger study that includes students in all colleges to address the issue of physical activity/inactivity in Saudi Arabia at large.

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