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# Promoting Physical Activity at Primary Health Care Centers: Physician Attitude and Barriers, Jazan-Saudi Arabia

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**Abstract:** Objectives: To assess the attitude of primary health care physician regarding promoting regular physical activity; to identify the perceived barriers which can affect promoting regular physical activity and to identify the factors associated with promoting regular physical activity.

Subjects and methods: This is a cross-sectional study carried out from March 2017 to Jun 2018. Self-administered questionnaires were administered to primary health care physicians.

Results: The study included 140 (60.1%) males and 93 (39.9%) females with a total number of 233 physicians. Most of physicians had positive attitudes towards promoting physical activity in PHC as above 80 % of them either agreed or strongly agreed on the positive statements of Likert scale. The highly prevalent barriers of effective physical activity promotion as perceived by the participants were insufficient educational materials (79.4%), lack of compliance of patients (78.5%), lack of standard protocols (76.4%), and lack of available education for health professionals regarding physical activity promotion (75.5%). There were no significant differences between males and females regarding the overall attitude score and all items of the Likert scale.

Conclusions: This study shows that the majority of PHC physicians, regardless their age, sex, nationality, marital status, years of experience and job titles had highly positive attitude towards promoting physical activity in PHCCs.

Keywords: Physical activity, Physicians, Primary health care, barriers

#### Introduction:

Physical activity is defined as any movement produced by skeletal muscles that result in energy expenditure beyond resting expenditure. Exercise is a subset of physical activity that is planned, structured, repetitive, and purposeful in the sense that improvement or maintenance of physical fitness is the goal<sup>(1)</sup>.

Recent recommendations of physical activity encourage a 30 minutes of moderate intensity activity, 5 days per week or 20 minutes of vigorous activity 3 days per week<sup>(1)</sup>. Many studies have been conducted in Saudi Arabia to assess the physical activity showed that physical inactivity is more prevalent among the Saudi population which reflects a major public health problem, as confirmed by the high population-attributable

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risk of physical inactivity compared with many industrial countries<sup>(2)</sup>. Non-communicable diseases (NCDS) are considered as a dangerous bluster in developing countries. There is some NCDS are consider at the top ten cause of death in Saudi Arabia such as, diabetes mellitus, hypertension and cardiovascular disease. There is increase in the prevalence of these disease due to decreased physical activity and changes in dietary patterns.<sup>(3)</sup>.

Physical inactivity is responsible for 6-10% of the deaths related to NCDs worldwide and is recognized as the fourth leading cause of death worldwide as 31% of the world's population is not meeting the international physical activity recommendations of engaging in 150 minutes of moderate-to-vigorous physical activity per week <sup>(4)</sup>.

The Centers for Disease Control and Prevention has suggested that every grown-up practice at direct power for 30 minutes or more on most days of the week, yet around 20% of grown-ups practice at that level, and no less than 40% are inactive.<sup>(5)</sup> The primary health care physicians has been recognized as an appropriate personnel for promoting physical activity.<sup>(6)</sup>

Regular physical activity protects against cardiovascular diseases and other NCDs,<sup>(7)</sup> moreover, physical activity can achieve better result on NCDs risk factors than those attained with drugs. Also, physical activity can be considered one of the important essential components of major global initiatives to improve health.<sup>(8)</sup>

In developing countries, the primary health care physicians (PCPs) do a strong influence on patients' behaviors<sup>(9)</sup>. Physical activity can be effectively promoted in healthcare settings<sup>(10-11)</sup>

Promoting of physical activity and counseling about a healthy lifestyle among individuals is one of the physician's important tasks. Primary health care physicians are particularly well placed for health promotion: Early enquiry about patients' lifestyles, provision of information, and counseling concerning risk factors. <sup>(12-13)</sup>

The present study aims to investigate the issue of promoting regular physical activity at primary health care centers and assessing physician's attitudes and barriers for promoting physical activities in Jazan, Saudi Arabia.

#### Subjects and methods

#### Study design

Analytic cross sectional design was conducted among primary healthcare physicians in Jazan Region, during 2017. Jazan City is considered the provincial capital of Jazan region, which located in south-western part of Saudi Arabia. In Jazan, there are 179 primary health care centers with 479 physicians working under the authority of Ministry of health.

#### **Population and Sampling:**

A sample size of  $\geq$ 224 was calculated with an estimated probability of 50% for PCPs` attitude to promote physical activity in PHCC, 95% confidence level, and 5% margins of error. The list of PHC physicians (n=479) in Jazan Region was taken from Health Affairs Office Directorate. The stratified random sampling technique with proportional allocation from all provinces (strata) was used. The samplewas randomly selected by using the simple random sampling method from the different strata (province).

#### Data collection tool

Self-administered reliable and valid questionnaire was used to collect the data with permission to use the questionnaire from the corresponding author through an E-mail<sup>(14)</sup>. The final version of the questionnaire included 25 items that were classified into three sections. Section one contained socioeconomic background characteristics questions (6 characteristics). The second section includes attitude of physicians towards promoting physical activity (10 questions). The third part asked questions on barriers perceived by physicians in promoting physical activity to their patients (9 questions).

The Likert's attitude items (n=10) were worded so that agreement reflects positive attitude towards promoting physical activity in PHC (positive statements), whereas other items were worded so that agreement reflects negative attitude (negative statements). All items were scored so that high scores reflect positive attitude regarding promotion of physical activity in PHC. Each positive statement was given a score of 5, 4, 3, 2 or 1 for strongly agreed, agree, neutral, disagree and strongly disagree, respectively. On the other hand the score were reversed for negative statements. So each item response had a score that ranged from 1.0 to 5 and the total attitude score of all items/physician was 50.

#### **Ethical issues**

Approval was taken from the Research Committee at King Fahd Central Hospital in Jazan Region. Permission letter was taken from Ministry of health to conduct the study. In addition, field work was approved by Directorate of primary Health care centers, Jazan Region. Informed consent from each physician to participate in the study was obtained.

#### Statistical analysis

The Statistical Package for Social Sciences (SPSS) software program version 20.0 was used for data analysis. Descriptive statistics were computed to explore the data. Chi square test was used to test the significance of differences between the participants regarding the categorical variables. Student's t-test and

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one way ANOVA were conducted to assess the significance of differences for the continuous variables. Statistical significance was set at  $\alpha$ =0.05.

#### Results

The study included 233 physicians; 140 (60.1%) males and 93 (39.9%) females. Most of them were married (65.2%), residents in family medicine (85%) with non-Saudi nationality (65.2%). Based on their age categories, almost half of the participants (51.9%) aged between 25 and 34 years whereas 31% aged between 35and 44 years. About 53% of the physicians had 1-5 years of experience in primary health care field and 62% had 6-10 years of experience.

Most of physicians had positive attitudes towards promoting physical activity in PHC as above 80 % of physicians either agreed or strongly agreed on the positive statements of Likert scale.

The highly prevalent barriers of effective physical activity promotion as perceived by the participants were insufficient educational materials (79.4%), lack of compliance of patients (78.5%), lack of standard protocols (76.4%), and lack of available education for health professionals regarding physical activity promotion (75.5%). As Figure (1) shows



Figure-1: Percentage of Barriers for promoting physical activity in PHC based on physicians' Perceptions (n, 233)

	Rai	nge	Maar	CD
	Minimum	Maximum	wiean	50
Health promotion is an important part of primary care work.	3.00	5.00	4.81	0.42
Promoting physical activity is important in primary care.	2.00	5.00	4.77	0.47
Advice to increase physical activity is more effective when linked to an individual's presenting problem.	2.00	5.00	4.42	0.68
I can be effective in promoting health	2.00	5.00	4.42	0.63
I can be effective in persuading some patients to increase physical activity.	2.00	5.00	4.29	0.61
I have sufficient knowledge to advice patients about physical activity.	1.00	5.00	4.14	0.80
I think any amount of physical activity is beneficial to health.	1.00	5.00	4.05	0.96
I think only vigorous/strenuous Activity is beneficial to health	1.00	5.00	2.27	0.95
I try to encourage as many patients as possible to increase their physical activity.	2.00	5.00	4.49	0.64
I, only, discuss physical activity if the patient mentions it.	1.00	5.00	2.07	0.96
Total attitude score	31.00	50.00	39.76	3.38

Table (1) Particij	pants attitudes'	score towards	promotion of	phy	sical activit	y in	PHCCs
· · /						/	

Table (1) shows; illustrates that all statements of the attitudes' score towards promotion of physical activity in PHCCs had levels>4 (out of five) except 2 items. PHC physicians who thought that vigorous or strenuous activity is, only, beneficial to health had a mean of  $2.27\pm0.95$  and those who would discuss physical activity if the patient requested it had a mean of  $2.07\pm0.96$ .

	× ð	,				
	t-value <sup>*</sup>	Р				
	Males		Fema	ales		
Gender	Mean SD <sup>‡</sup>	Mear	n <b>S</b> D			
	39.721	3.260	39.806	3.563	- 0.188	0.851
	Saudi	Non-Saudi				
Nationality	Mean SD	Mear	n SD			
	39.222	3.517	40.039	3.283	-1.765	0.079
Marital status	Single		Marı	ried		
	Mean SD	Mean SD				
	39.842	4.352	39.738	3.171	0.172	0.863
	*					

Table (2) Factors associated with participants' attitude towards physical activity promotion in PHCCs.

(significant items)

SD: Standard deviation

Student's t-test

Table (2) shows; illustrates that the total attitude score towards physical activity promotion in PHCCs was not significantly differ among physicians according to gender, nationality and marital status. Similarly.

Table (3) Attitude score towards promoting physical activity according to years of experience and jobtitle of physicians

	Number	Mean	SD <sup>♠</sup>	F-ratio	Р
Age category in years:					
25-34	121	39.4	3.6		
35-44	72	40.4	3.1		0.091
45-54	24	38.8	3.3		
>55	16	40.4	2.4	2.2	
Job title:					
House officer	34	39.7	4.5		
Resident	195	39.7	3.2		
Registrar, senior Registrar or	4	41.2	2.1		
Consultant				0.4	0.671
Years of experience:					
1-5	124	39.2	3.6		
6-10	61	40.4	3.0		

	Number	Mean	SD <sup>♠</sup>	F-ratio	Р
11-15	21	39.7	3.0		
16-20	15	41.0	3.4		
>21	12	40.4	2.4	2.1	0.071

SD: Standard deviation

Table (3) shows; illustrates no significant differences between different categories of age, job title and years of experience regarding total attitude score towards physical activity promotion in PHCCs.

### Table (4) Barriers of promoting physical activity in PHC centers according to physician`s gender

		Ma	le	Fen		
	Statomonto	(n=1	40)	(n=	93)	P value <sup>*</sup>
	Statements	Yes	No	Yes	No	
		N (%)	N (%)	N (%)	N(%)	
1	Lack of time to promote physical activity	61(43.6)	79(56.4)	43(46.2)	50(53.8)	0.689
2	Insufficient knowledge and training	54(38.6)	86(61.8)	39(41.9)	54(58.1)	0.608
3	Difficulty to access to training	91(65)	49(35)	41(44.1)	52(55.9)	0.002
4	Lack of success in the counseling role	53(37.9)	87(62.1)	27(29)	66(71)	0.165
5	insufficient Educational materials for patients	108(77.1)	32(22.1)	77(82.8)	16(17.2)	0.296
6	lack of education for health professionals	104(74.3)	36(25.7)	72(77.4)	21(22.6)	0.586
7	Lack of resources	96(68.6)	44(31.4)	68(73.1)	25(26.9)	0.457
8	Patients ignore recommendations	108(77.1)	32(22.9)	75(80.6)	18(19.4)	0.524
9	Lack of standard protocols	111(79.3)	29(20.7)	67(72)	26(28)	0.202

<sup>\*</sup>Chi-Square test

Table (4) shows; There were no significant differences between males and female physicians regarding all perceived barriers to conduct physical promotion in PHC centers with the exception of difficulty to attend physical activity training as 65% of males compared to 44.1% of females reported it, p=0.002.

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			N	rears	sorexpe	rience ir	IPAC	N 1			
	1-5 N (%)	6-10 N (%)	11-15 N (%)	16-20 N (%)	≥ 21 N (%)	1-5 N (%)	6-10 N (%)	N0 11-15 N (%)	16-20 N (%)	≥ 21 N (%)	P value <sup>*</sup>
1) Lack of time to promote physical activity	64 (51.6)	18 (29.5)	11 (52.4)	7 (46.7)	4 (33.3)	60 (48.4)	43 (70.5)	10 (47.6)	8 (53.3)	8 (66.7)	0.055
2) Insufficient knowledge and training	59 (47.6)	17 (27.9)	10 (47.6)	5 (33.3)	2 (16.7)	65 (52.4)	44 (72.1)	11 (52.4)	10 (66.7)	10 (83.3)	0.073
3) Difficulty to access to training	67 (54)	29 (47.5)	17 (81)	12 (80)	7 (58.3)	57 (46)	32 (52.5)	4 (19)	3 (20)	5 (41.7)	0.029
4) Lack of success in the counseling role	51 (41.1)	12 (19.7)	8 (38.1)	5 (33.3)	4 (33.3)	73 (58.9)	49 (80.3)	13 (61.9)	10 (66.7)	8 (66.7)	0.075
5) insufficient Educational materials for patients	97 (78.2)	48 (78.7)	17 (81)	13 (86.7)	10 (83.3)	27 (21.8)	13 (21.3)	4 (19)	2 (13.3)	2 (16.7)	0.945
6) lack of education for health professionals	97 (78.2	42 (68.9)	15 (71.4)	11 (73.3)	11 (91.7)	27 (21.8)	19 (31.1)	6 (28.6)	4 (26.7)	1 (8.3)	0.422
7) Lack of resources	96 (77.4)	33 (54.1)	12 (57.1)	14 (93.3)	9 (75)	28 (22.6)	28 (45.9)	9 (42.9)	1 (6.7)	3 (25)	0.003
8) Patients ignore recommendations	95 (76.6)	49 (80.3)	17 (81)	14 (93.3)	8 (66.7)	29 (23.4)	12 (19.7)	4 (19)	1 (6.7)	4 (33.3)	0.491
9) Lack of standard protocols	95 (76.6)	43 (70.5)	17 (81)	12 (80)	11 (91.7)	29 (23.4)	18 (29.5)	4 (19)	3 (20)	1 (8.3)	0.544

Table (5) Barriers for promoting physical activity in PHC centers according to physicians` years of

<sup>\*</sup>Chi-Squaretest

Table (5) shows; There were no significant association between participants` years of experience in PHC and barriers for promoting physical activity in PHCCs with the exception of difficult access to training and lack of resources, p-values were 0.029 and 0.003, respectively.

	House Officer		Resident		≥Registrar			
	Yes	No	Yes	No	Yes	No	X <sup>2</sup>	P-value <sup>*</sup>
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)		
1) Lack of time to promote	22	12	80	115	2	2	67	0.076
physical activity	(64.7)	(35.3)	(41.0)	(59.0)	(50.0)	(50.0)	0.7	0.020
2) Insufficient knowledge and	16	18	74	121	3	1	3.0	0.774
training	(47.1)	(52.9)	(37.9)	(62.1)	(75.0)	(25.0)	3.0	0.224
3) Difficulty to access to	21	13	108	87	3	1	0.0	0.667
training	(61.8)	(38.2)	(55.4)	(44.6)	(75.0)	(25.0)	0.9	0.007
4) Lack of success in the	14	20	63	132	3	1	2 00	0.114
counseling role	(41.2)	(58.8)	(32.3)	(67.7)	(75.0)	(25.0)	5.90	0.114
5) Insufficient Educational	30	4	152	43	3	1	2.0	0 30 7
materials for patients	(88.2)	(11.8)	(77.9)	(22.1)	(75.0)	(25.0)	2.0	0.392
6) Lack of education for health	31	3	142	53	3	1	50	0.047
professionals	(91.2)	(8.8)	(72.8)	(27.2)	(75.0)	(25.0)	5.0	0.047
7) Lack of recourses	30	4	131	64	3	1	66	0.027
/) Lack of resources	(88.2)	(11.8)	(67.2)	(32.8)	(75.0)	(25.0)	0.0	0.027
8) Patients ignore	27	7	153	42	3	1	0.2	1 000
recommendations	(79.4)	(20.6)	(78.5)	(21.5)	(75.0)	(25.0)	0.5	1.000
0) Lack of standard protocols	26	8	148	47	4	0,0	0.7	0 703
9) Lack of standard protocols	(76.5)	(23.5)	(75.9)	(24.1)	(100)	(0.0)	0.7	0.793

Table (6) Barriers for	promoting physical a	activity in PHC centers	according to pl	ıvsicians`i	ob title
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<sup>\*</sup>Chi-Squaretest

Table (6) shows; There significant association between lack of time, Lack of education for health professionals and lack of resources from one side and promoting physical activity in PHC centers, p-values were 0.026, 0.047 and 0.027, respectively as shown in table 6.

#### Discussion

The literatures <sup>(15)</sup> indicated that although physicians had positive attitudes towards health promotion in general, there was a discrepancy between the potential and the implementation of preventive services in primary care settings. In Germany-despite well-known benefits of physical activity, only about half of the physicians, advised at least half of their patients about physical activity and less than a quarter of physicians provided written material or referred patients to other health/ lifestyle experts<sup>(15)</sup>.

In general, comparing findings with other nations is difficult due to differences in health care systems that provide different opportunities for health promotion. However, some similarities between the present study and studies from other countries were found. Findings in this study of a generally positive attitude of the physicians towards physical activity promotion, for example, are consistent with previous studies from North America and United Kingdom<sup>(16, 17)</sup>.

This study found that 94% of PCPs believed that advice to increase physical activity is more effective when linked to an individual's presenting problem. Previous studies addressed the provision of physical activity counseling in primary care settings provided variable estimates, and proportions differed by patient risk and mode of data collection. For example, a previous study <sup>(18)</sup> showed that advice on physical activity generally occurred more frequently in patients with diagnosis of cardiovascular disease or hypertension, compared to overweight individuals and patients with sedentary life-style.

PHC physicians who thought that vigorous or strenuous activity is, only, beneficial to health and those who would discuss physical activity if the patient requested it had lower attitude scores in comparison with other statements of the Likert scale. These results are consistent with the high positive attitude of the participants towards promoting physical activities in the PHC because the two statements are negative ones.

Unfortunately, many barriers exist to physical activity promotion. The highly prevalent barriers of effective physical activity promotion as perceived by the participants were insufficient educational materials, lack of compliance of patients, lack of standard protocols, and lack of available education for health professionals regarding physical activity promotion and lack of time. Another important barrier that many PCPs discussed was lack of ancillary resources such as registered health educators and financial incentives. The results of the present study are consistent with that of Yahia et al, 2017<sup>(19)</sup>, where insufficient time; health education materials; guideline and referral system were the main barriers for effective obesity management in PHC.

PCPs reported lack of time as one of the major barriers to discuss physical activity promotion in PHC centers. In the literature, the PCPs may have a desire to help patients but insufficient time to do so. The patients presented with multiple complaints during the 12-minutes, on average, patient visits, and patients

usually had other co-morbidities such as diabetes and hypertension. Time constraints did not allow for the PCPs to discuss physical activity promotion. The patients may have urgent health complaints and uncontrolled chronic diseases that required more immediate attention <sup>(20)</sup>.

These results revealed a need for more education of PCPs in various areas of physical activity management because insufficient knowledge and training were perceived by 40% and 57% of the participants, respectively, PCPs could benefit from increased strategies, such as motivational interviewing, to help patients overcome their lack of motivation <sup>(21, 22)</sup>.

Poor compliance of patients to medical advice, were reported by 79% of physicians; and ineffective behavior therapy (Counseling), reported by 34% of the study group; However, the differences in the frequency distributions of these 2 variables were insignificant between junior and senior physicians; and males and female ones. If PCPs had more skill in motivating their patients, PCPs' intention to address physical activity promotion might increase <sup>(23)</sup>.

PCPs may not be appropriately educating their patients about the full spectrum of available and effective physical activity promotion. This may be due to low perceived effectiveness, safety concerns, and specific patient characteristics required. When considering the Chronic Care Model <sup>(23)</sup>, patients cannot be fully informed and engaged members in the decision-making process if they do not have fully informed and engaged PCPs <sup>(24)</sup>.

In conclusion, this study showed that the majority of PHC physicians, regardless their age, sex, nationality, marital status, years of experience and job titles had highly positive attitude towards promoting physical activity in PHCCs. However, many barriers impacts application of such activities. Poor compliance of patients to medical advice, were reported by most of physicians; and ineffective behavior therapy (Counseling), reported by almost a third of them. Therefore, standard protocols for physical activity promotion should be available in primary health care centers and continued education focused on helping PCPs to overcome identified knowledge gaps in the area physical activity promotion is recommended.

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## تعزيز النشاط البدني في مراكز الرعاية الصحية الأولية " موقف الطبيب والحواجز " جازان - المملكة العربية السعودية

الملخص: هدف البحث إلى تقييم موقف طبيب الرعاية الصحية الأولية فيما يتعلق بالنشاط البدني المنتظم؛ لتحديد العوائق المدركة التي يمكن أن تؤثر على تعزيز النشاط البدني المنتظم ولتحديد العوامل المرتبطة بتعزيز النشاط البدني المنتظم.

المواضيع والطرق: هذه دراسة مستعرضة أجريت ما بين الفترة من مارس 2017 إلى يونيو 2018م. مشتملة على استبيانات تدار ذاتيا بين أطباء الرعاية الصحية الأولية.

النتائج: اشتملت الدراسة على عدد 140 من الأطباء بنسبة (60.1%) من ذكور و 93 بنسبة (39.9%) إناث بإجمالي عدد 233 طبيباً. كان لدى معظم الأطباء مواقف إيجابية تجاه تعزيز النشاط البدني في الرعاية الصحية الأولية، حيث إن نسبة ال80% منهم " وافقوا " أو " وافقوا بشدة " على البيانات الإيجابية لمقياس (Liker). وقد تمثلت الحواجز العالية الانتشار لتعزيز النشاط البدني الفعال كما يراها المشاركون في: المواد التعليمية غير الكافية بنسبة (79.4%)، وعدم امتثال المرضى نسبة (78.5%)، ونقص البروتوكولات القياسية نسبة (76.4%)، ونقص التعليم المتاح للعاملين في مجال الصحة فيما يتعلق بالترويج للنشاط البدني نسبة (75.5%). بيد أنه لم تكن هنالك فوارق ذات دلالة إحصائية بين الذكور والإناث بشأن درجة الموقف العام وجميع البنود من مقياس (Liker).

الاستنتاجات: توضح هذه الدراسة أن غالبية أطباء الرعاية الصحية الأولية، بغض النظر عن اختلافهم في: الأعمار، الجنس، الجنسية، الحالة الاجتماعية، سنوات الخبرة والمسميات الوظيفية لديهم موقف إيجابي للغاية تجاه تعزيز النشاط البدني في مراكز الرعاية الصحية الأولية.

**الكلمات المفتاحية:** النشاط البدني، الأطباء، الرعاية الصحية الأولية، الحواجز.