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Exercise Counseling by Primary Care Physicians in Jordan—A Preliminary Study

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Abstract

Despite the value of physical activity and exercise to patients, little is known about the perception and practices of Jordanian primary care physicians (PCPs) regarding counseling patients about exercise. This study was aimed at assessing counseling about exercise by PCPs in Jordan. A cross-sectional study targeting a random sample of physicians from family medicine, internal medicine and general practice in academic, public, and private sectors. Chi-square test of independence was used to assess the association of perceptions and practices of physicians regarding exercise counseling with their specialty. Logistic regression models were used to examine the association of demographic information with selected items of perception and practice. A total of 218 physicians participated in the study. They were mainly males (67%), family medicine physicians (42.2%), and had a mean age of 33.7 ($\pm$9.87) years. Most physicians believed that less than half of patients will start exercising (91.3%) or will continue exercising if they were repeatedly counseled at follow-up visits (85.4%). Family medicine physicians counseled more patients, more frequently, and their desire to counsel more patients was significantly higher than other physicians ($P = .002$).

The Perceptions and practices of Jordanian PCPs toward exercise counseling for their patients were found positive; however the desire to counsel more patients was low. Lack of patients' motivation to practice exercise, time constraint and limited resources were the most frequently reported barriers to counseling. Further investigation on how to overcome such barriers is recommended.

Keywords

Jordan, primary care, physical exercise, counseling

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Introduction

Adopting the healthy lifestyle is known to improve the wellbeing of individuals, and to reduce the risks of developing chronic and emergent diseases. Primary care physicians (PCPs) play a crucial role through advice and counseling patients about the healthy lifestyle.[1]

A well-known healthy behavior that reduces the risk of chronic diseases is regular physical exercise. Exercise has been shown to have *many health benefits on various body systems*, including the heart, lungs, joints, and brain. Examples of chronic diseases incidences that can be prevented or reduced by physical exercise are coronary artery disease, hypertension, stroke, diabetes mellitus, arthritis, and depression.[2]

Despite the prosperous effects of physical exercise on the human health and wellbeing, many people don't meet the recommendations for the proper physical exercise. While many individuals don't achieve the recommended duration of physical exercise, others demonstrate a complete absence of any form of an effective exercise. A national study in Jordan that included 3,196 participants, found that only 12.5% of Jordanian adults were physically active, although 55.9% were aware of the recommended exercise levels.[3] An analysis of the 2003 to 2004 and 2005 to 2006 cycles of the National Health and Nutrition Examination Survey (NHANES) showed that the proportion of sufficiently active American adults was $9.7 \pm 0.7\%$ when a 10-minute bout was required, and $44.8 \pm 1.3\%$

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when a 10-minute bout was not required.[4] This was based on the new guidelines of the U.S Department of Health and Human Services (DHHS) 2018 and American College of Sports Medicine (ACSM's) 2011 physical activity guidelines for Americans with and without the 10-minute minimum bout requirement.[4] Further, the Australian National Health Survey conducted in 2004 to 2005 indicated that only 30% of those aged 15 years and above satisfied physical activity guidelines, and 70% of Australians did not participate in enough exercise.[5] The National Australian Physical Activity (NAPA) Guidelines for adults recommend at least 30 minutes of moderate-intensity physical exercise (including brisk walking) on most days of the week with each session lasting at least 10 minutes.[6] These findings highlight the increasing need for an effective health promotion strategies and programs to promote physical exercise within populations of many countries around the world.

PCPs have the position to recommend and advice individuals about the necessity of exercise, emphasizing its relationship with healthy life. Their advice should be informative to include the appropriate duration, frequency, and intensity of exercise, in addition to any modifications based on pre-existing conditions or any medical needs. Moreover, PCPs should be prompted to continuously monitor patients for their progress on physical exercise.[7-10]

Despite the significant impact PCPs could produce by counseling patients on exercise, patients are not responding by increasing exercise efforts. PCPs may struggle to provide exercise counseling due to barriers such as, the uncertainty about the effectiveness of counseling, lack of time during the office visit, inadequate training and reimbursement issues.[2] Another barrier included protocols within the electronic medical record system was also reported by physicians.[7] There are no studies yet that have assessed the current situation of counseling patients about exercise by PCPs in Jordan. Therefore, we aimed to study and to explore reported barriers noted by Jordanian PCPs to counseling their patients on exercise.

Methods

Study Design and Population

This is a self-reported cross-sectional study that was conducted between August 2019 and February 2020. The target population was PCPs practicing in the ministry of health, academic institutions, and the private sector in Jordan. PCPs in this study included family medicine physicians, internal medicine physicians, and general practitioners. For random selection of participants, researchers randomly selected 35 comprehensive primary health center out of the 95 centers from the ministry of health (109 physicians), and another 66 physicians from 35 private centers. For the academic institutions, there are only two medical colleges in Jordan that have residency training programs in family medicine and internal medicine, they were both included in the study (43 physicians).

Physicians in the targeted clinics were approached and offered to participate in the study. Among a total of 261 physicians, 218 had agreed to participate, forming 83.5% response rate.

This study obtained an ethical approval from the Institutional Review Board at Jordan University of Science and Technology.

Study Instrument

The survey consisted of 19 questions created to assess the perceptions and practices of PCPs regarding exercise and exercise counseling. The questionnaire was adopted from a similar Canadian study that assessed exercise counseling by Canadian physicians.[8] Questions related to demographic information and characteristics of participants comprised of 5 questions (Gender, Age, Years of Experience, Specialty, and Body Mass Index; obtained from self-reported weight and height), 2 questions were related to the type and frequency of exercise of the participant, 6 questions were related to participants' perception about exercise counseling, 4 questions were related to participants' practice of exercise counseling, and 1 question was about barriers of exercise counseling.

Data Analysis

Descriptive statistical analysis was used to describe items included in the survey. Numbers and means were used to describe the categorical and continuous variables, respectively. Chi-square test of independence was used to assess the association between items related to perceptions and practices of exercise counseling and physicians' specialties.

Logistic regression models were used to examine if demographic information (independent variables) can significantly predict participants' frequency of exercise, perceptions about the importance of counseling, and percentage of patients currently counseled and desire to counsel (dependent variables). Moreover, types and frequency of exercise activity practiced by physicians was used as independent variables to predict perceptions about the importance of counseling, and percentage of patients currently counseled and desire to counsel.

A *P*-value of .05 was considered statistically significant. Data were analyzed using IBM SPSS version 24 (Armonk, NY: IBM Corp).

Results

This study included a total of 218 PCPs (two-thirds were male doctors). Their age ranged from 25 to 70 years with a mean (±SD) of 33.7 (±9.87) years. Most participants were

Table 1. Physicians' Demographics and Self-Exercise Practices.

Characteristics	Number (%)
Gender	
Male	146 (67%)
Female	72 (33%)
***Age (±SD)**	33.7 (±9.87)
***BMI (±SD)**	22.96 (±4.56)
Specialty	
Family medicine	92 (42.2%)
Internal medicine	61 (28.0%)
General practice	65 (29.8%)
Years of practice	
Less than a year	47 (21.6%)
Between 1 and 4 years	61 (28.0%)
Between 4 and 10 years	64 (29.4%)
More than 10 years	46 (21.1%)
Exercise frequency	
Don't exercise	95 (43.6%)
1-2 times/week	80 (36.7%)
3-5 times/week	37 (17.0%)
Daily	6 (2.8%)
Exercise type	
Aerobic (brisk walking, jogging, etc.)	98 (45.0%)
Balancing (standing on one-foot, Tai chi)	3 (1.4%)
Stretching (calf stretch, yoga)	5 (2.3%)
Strength (lifting weights)	14 (6.4%)
Other	7 (3.2%)

*continuous variables.

family medicine physicians (42.2%). About half of participants exercise more than once per week (53.7%), but 43.6% don't exercise at all. The most common type of exercise was aerobic exercises (45%). Characteristics of participants are shown in Table 1.

Table 2 demonstrates the perceptions of PCPs about exercise counseling. Most physicians believed that less than half of patients will start exercising (91.3%) or will continue exercising, if they were repeatedly counseled at follow- up visits (85.4%). Although most of participating physicians viewed themselves as moderately or very knowledgeable (59.7%) and qualified (56.4%) regarding exercise counseling, there was about one out of 10 participants who thought that exercise counseling in general or counseling at follow-up visits are not important or slightly important, (10.6%) and (10.1%), respectively.

Although most items of perceptions were not significantly associated with the specialty of participants, except for the importance of counseling ($P = .005$), general practitioners had the highest percentage of viewing themselves as very knowledgeable and qualified compared to family and internal medicine physicians. However, their perception about the importance of counseling at initial and follow-up visits was the lowest.

As illustrated in Table 3, the desire of most physicians to counsel high percentage of patients was found low (70.1% said they desire to counsel less than half of their patients). Compared to other physicians, general practitioners desired to counsel the lowest number of patients. Family medicine physicians significantly counseled more patients, more frequently, and had an increased desire to counsel more patients than internists and general practitioners ($P = .002$).

PCPs reported several barriers and the lack of motivation among patients was the most commonly reported barrier (66.1% of PCPs) (Table 4). Also noted, PCP barriers were time constraints (54.0%) and limited resources (53.2%).

In logistic regression models-Table 5, age was positively associated with exercising 1 to 2 times weekly [OR = 1.043, 95% CI = 1.001-1.086, $P = .046$], and female physicians were more likely to exercise 1 to 2 times weekly [OR = 2.455, 95% CI = 1.032-5.841, $P = .042$]. Further, the desire of family medicine physicians to counsel 51% to 75% of patients was 3.7 times more than general practitioners [OR = 3.784, 95% CI = 1.481-9.854, $P = .006$]. Other relationships were not statistically significant in the models.

Discussion

Most physicians in this study perceived themselves as knowledgeable and qualified in providing exercise counseling to their patients, Nonetheless, their counseling practices showed otherwise. Most of them counseled only a small proportion of patients and even though, didn't counsel them often. Comparable levels of exercise counseling were reported by Gnanendran et al 2011 and Kennedy and Meeuwisse 2003. Although physicians in these two studies showed a great desire to counsel patients, they used to do it rarely or occasionally.[8,11]

In Kennedy and Meeuwisse study, physicians believed that most patients would not begin or continue exercise even if counseling was provided initially and at follow-up visits, the same beliefs were reported by participants of this study. Lack of patient's motivation to exercise, time constraint, limited resources, and other "barriers to counseling" may explain why physicians had such beliefs.

Barriers to counseling reported in this study were also mentioned in other studies.[2,8,9,11,12] "Lack of time" was reported second after low patients' motivation. Lack of time decreases the likelihood of healthcare professionals to provide exercise counseling. This likelihood significantly decreases as the number of patients seen per day increases.[13,14]

A small percentage (approximately 10%) of PCPs in this study believed that exercise was not important or was slightly important to patients. Indeed, the ample evidence of the holistic and rewarding positive effects of exercise, should exclude no one from exercise counseling.[15]

Table 2. The Association of Physician's Specialty with their Perceptions on Exercise Counseling.

Perceptions on Exercise Counseling		Specialty			Total N (%)	*P-Value*
		Family Medicine N (%)	Internal Medicine N (%)	General Practice N (%)		
What is the percentage of patients that you think will start exercising if you provide them with exercise counseling?	0-25%	53 (57.6%)	35 (57.4%)	47 (72.3%)	135 (61.9%)	.075
	26-50%	32 (34.8%)	17 (27.9%)	15 (23.1%)	64 (29.4%)	
	51-75%	5 (5.4%)	9 (14.8%)	3 (4.6%)	17 (7.8%)	
	76-100%	2 (2.2%)	0 (0%)	0 (0%)	2 (.9%)	
What is the percentage of patients that you believe will continue exercising if you counsel them about exercise with follow-up visits?	0-25%	48 (52.2%)	39 (63.9%)	35 (53.8%)	122 (56.0%)	.10
	26-50%	31 (33.7%)	10 (16.4%)	23 (35.4%)	64 (29.4%)	
	51-75%	13 (14.1%)	12 (19.7%)	6 (9.2%)	31 (14.2%)	
	76-100%	0 (0%)	0 (0%)	1 (1.5%)	1 (.5%)	
How knowledgeable are you in exercise counseling?	Not knowledgeable	2 (2.2%)	5 (8.2%)	6 (9.2%)	13 (6.0%)	.127
	Slightly knowledgeable	28 (30.4%)	24 (39.3%)	23 (35.4%)	75 (34.4%)	
	Moderately knowledgeable	50 (54.3%)	21 (34.4%)	24 (36.9%)	95 (43.6%)	
	Very knowledgeable	12 (13.0%)	11 (18.0%)	12 (18.5%)	35 (16.1%)	
How qualified do you believe you are in exercise counseling?	Not qualified	6 (6.5%)	8 (13.1%)	13 (20.0%)	27 (12.4%)	.071
	Slightly qualified	33 (35.9%)	17 (27.9%)	18 (27.7%)	68 (31.2%)	
	Moderately qualified	45 (48.9%)	27 (44.3%)	22 (33.8%)	94 (43.1%)	
	Very qualified	8 (8.7%)	9 (14.8%)	12 (18.5%)	29 (13.3%)	
How important is it for you to counsel patients regarding exercise?	Not important	3 (3.3%)	1 (1.6%)	4 (6.2%)	8 (3.7%)	.005
	Slightly important	1 (1.1%)	5 (8.2%)	9 (13.8%)	15 (6.9%)	
	Important	16 (17.4%)	20 (32.8%)	19 (29.2%)	55 (25.7%)	
	Very important	44 (47.8%)	25 (41.0%)	24 (36.9%)	93 (42.7%)	
	Extremely important	28 (30.4%)	10 (16.4%)	9 (13.8%)	47 (21.6%)	
How important do you feel is it to follow-up with your patients following exercise counseling?	Not important	2 (2.2%)	2 (3.3%)	2 (3.1%)	6 (2.8%)	.359
	Slightly important	5 (5.4%)	4 (6.6%)	7 (10.8%)	16 (7.3%)	
	Important	25 (27.2%)	22 (36.1%)	19 (29.2%)	66 (30.3%)	
	Very important	38 (41.3%)	28 (45.9%)	28 (43.1%)	94 (43.1%)	
	Extremely important	22 (23.9%)	5 (8.2%)	9 (13.8%)	36 (16.5%)	

Table 3. The Association of Physicians' Specialty with their Practice of Exercise Counseling.

Practice of Exercise Counseling		Specialty			Total N (%)	*P*-Value
		Family Medicine N (%)	Internal Medicine N (%)	General Practice N (%)		
What is the percentage of patients you currently counsel about exercise?	0-25%	57 (62.0%)	46 (75.4%)	52 (80.0%)	155 (71.1%)	.105
	26-50%	28 (30.4%)	12 (19.7%)	12 (18.5%)	52 (23.9%)	
	51-75%	7 (7.6%)	3 (4.9%)	1 (1.5%)	11 (5.0%)	
	76-100%	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
What is the percentage of patients you desire to counsel about exercise?	0-25%	31 (33.7%)	27 (44.3%)	33 (50.8%)	91 (41.7%)	.002
	26-50%	20 (21.7%)	21 (34.4%)	21 (32.3%)	62 (28.4%)	
	51-75%	41 (44.6%)	13 (21.3%)	11 (16.9%)	65 (29.8%)	
	76-100%	0 (0%)	0 (0%)	0 (0%)	0 (0%)	
How often do you counsel patients on exercise?	Never	1 (1.1%)	2 (3.3%)	3 (4.6%)	6 (2.8%)	.08
	Sometimes	28 (30.4%)	26 (42.6%)	31 (47.7%)	85 (39.0%)	
	Most of the time	47 (51.1%)	19 (31.1%)	23 (35.4%)	89 (40.8%)	
	Always	16 (17.4%)	14 (23.0%)	8 (12.3%)	38 (17.4%)	
Do you follow-up with patients after exercise counseling?	Never	12 (13.0%)	12 (19.7%)	12 (18.5%)	36 (16.5%)	.448
	Sometimes	46 (50.0%)	34 (55.7%)	31 (47.7%)	111 (50.9%)	
	Most of the time	31 (33.7%)	12 (19.7%)	17 (26.2%)	60 (27.5%)	
	Always	3 (3.3%)	3 (4.9%)	5 (7.7%)	11 (5.0%)	

It would be interesting though to explore why some physicians think that exercise counseling is not important and thus is not necessarily to be provided. Yet, most physicians believed in the importance of exercise counseling but didn't show a desire to counsel more patients, which is worrying, the main drive for this attitude is possibly driven by their belief that patients lack the motivation to exercise and thus, their desire to counsel them fades.

Reddeman et al 2019 study concluded that patients' actions toward physical activity don't solely rely on the recommendations from their physicians, but rather on patients' self-motivation, which can be ignited by a more patient-centered advice from the PCPs.[16]

In this study, none of the examined factors, including physician's frequency of exercise, were statistically significant, while Reed et al0 1991.[10] study showed that the desire

Table 4. Barriers to Exercise Counseling.

Barrier	[+]Number
Patients lack motivations	144 (66.1%)
Time constraint/insufficient time	118 (54.0%)
Limited resources	116 (53.2%)
Patient prefers drugs	78 (35.8%)
Patient who are well bound	69 (31.7%)
Lack of knowledge	57 (26.1%)
No specific guidelines	52 (23.9%)
Lack of evidence	26 (11.9%)
Others	51 (23.4%)

[+]participants can report more than one barrier.

Table 5. Multivariate Analysis for the Relationship of Physicians' Characteristics with Personal Exercise and Exercise Counseling.

Significant Relationships	Odds Ratio	95% Confidence Interval		*P*-Value
How often do you exercise weekly? (outcome: 1-2 times)				
Female	2.455	1.032	5.841	.042
Male	1			
How often do you exercise weekly? (outcome: 1-2 times)				
Age	1.043	1.001	1.086	.046
What is the percentage of patients you desire to counsel about exercise? (outcome: 51 – 75%)				
Family medicine physicians	3.784	1.481	9.854	.006
Internal medicine physicians	NS			
General practitioners	1			

Only significant relations are shown.
NS: not significant.

to counsel more patients could be associated with physicians self-exercise practices, years of experience and the possession of a follow-up plans.

Also, Lobelo and de Quevedo 2014 study, which reviewed a total of 47 pertinent articles published between 1979 and 2012 showed that healthcare providers, including physicians, who are physically active are more likely to counsel patients about exercise and physical activity,[17] this sparks the call to target PCPs in physical exercise programs, which will not only benefit healthcare professionals but pours into the favor of exercise counseling to patients; an approach that could be cost-effective.

The comparison of different PCPs in the current study indicated a higher propensity of family medicine physicians toward providing exercise counseling. Unlike other PCPs in Jordan, family medicine is a pure outpatient practice which begins with four years of residency training, the trainees will get exposed to a wide and extensive experience in primary health care.[18] Family physicians are trained at the postgraduate level to provide care and address most common conditions in the context of patients' families, and in community settings.[19]

Suggested recommendations to improve skills of PCPs in delivering effective exercise counseling may include implementing exercise counseling training at graduate and undergraduate medical education, imposing courses related to exercise counseling as part of the continuing education, including questions on exercise counseling in exams, and requesting documentation of physical counseling in patients' treatment plan.

Limitations

The collected sample didn't include an equal number of PCPs from genders, age groups, and specialties. The survey could have also included other aspects of counseling, such as method of instruction and length of counseling. A larger sample from all health sectors of practice is recommended to compare the level and quality of counseling based on the place of practice.

Conclusion

The perceptions and practices of Jordanian PCPs toward exercise counseling to their patients were positive in this study. However, physician's desire to counsel more patients was low. Most frequently reported barriers to counseling included lack of patient's motivation to practice exercise, time constraint and limited resources. Patient's motivation could be improved by developing a trusting relationship between patients and their physicians, increasing awareness about the benefits of exercise, while setting achievable goals for the patient. The positive relationship between the physicians' self-exercise practices and their increased willingness to counsel patients on exercise could be further explored.

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