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## Research Article

# Physical Activity Prescription for Chronic Diseases: Attitude and Role of Healthcare Professionals in Hospital Setting, Addis Ababa, Ethiopia -

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## ABSTRACT

**Introduction:** Physical inactivity is a fast growing public health problem and contributes to a variety of chronic diseases and health complications. Currently physical inactivity is one of the major causes of Non-Communicable Diseases (NCDs). NCDs cause more than 36 million deaths per year across the globe (comprising approximately 63% of all deaths) according to (WHO, 2013).

**Methods and materials:** A descriptive survey design was used to assess healthcare professionals' attitude towards physical activity counseling and prescription for non-communicable diseases in hospital setting. The sample hospitals were selected randomly based on the inclusion and exclusion criteria. The sample size was determined by using the formula for estimating a single population proportion.

**Results:** A total of 442 healthcare professionals from 7 government hospitals in Addis Ababa city were participated in the study. From these hospitals 387 healthcare professionals (physicians = 135, 34.9%, nurses = 218, 56.3% and physiotherapist = 34, 8.8%) were completed the questionnaire. Majority of HCPs (n = 385, 90.1%) agree to good physical activity habits of HCPs can encourage their patients to exercise and maintain good health (Table 1). Most of HCPs (88.5%) agree that exercise counseling/prescribing is important in the field of HCP practice, (76.5%) believed that only advise patients about PA if linked to current problem, (78.2%) HCPs agree that discussing the benefits of physically active lifestyle with patients is part of HCPs' role, while only (37.7%) of HCPs believe that exercise is as effective as medicine. In general most of healthcare professionals were had positive attitude towards counseling PA as preventative or management modality for chronic diseases.

**Conclusion:** Majority of HCPs agree to good physical activity habits of HCPs can encourage their patients to exercise and maintain good health. Most of HCPs agree that exercise counseling/prescribing is important in the field of HCPs' practice, and this study suggest that physicians were more likely to agree that they advised patients about PA only if it was linked to the current condition and if the patient ask about physical activity.

**Keywords:** Physical activity prescription/counseling; Non-communicable diseases; Healthcare professionals; Attitude; Role

## INTRODUCTION

There is evidence from different scientific research for the benefit of exercise in many forms of disease. It is effective, less cost, with a low side effect, and can have a positive environmental impact. Despite this, there remains a reluctance within the healthcare professionals to use PA as a treatment. This probably reflects a lack of knowledge and attitude among doctors of the benefits of exercise, and a lack of practical skills in the prescription of exercise for persons with chronic disease. Frequently, the risks of exercise are misunderstood and overestimated [1].

There are two ways in which the healthcare professionals can contribute to health benefits from PA [1]: increasing the overall participation rate in physical activity and hence reducing disease and counseling/prescribing physical exercise to manage illness and injuries. In both areas, the healthcare professionals has a key role in informing patients, giving guidance and linking with other services.

Healthcare professionals have inadequate training in non-pharmacological methods, which means that there is uncertainty about prescribing physical activity. Physical activity prescription is not a priority for healthcare professionals because other tasks are considered more important. The competences of healthcare professionals need to be utilized to achieve optimum teamwork in physical activity prescription/counseling. The healthcare professionals point out that the proper conditions have to be established in society and in the health service to increase the PAL among patients to manage and prevent chronic diseases [2].

There is sometimes a struggle about who should be can prescribe medicines, but when it comes to physical activity prescription/counseling there is opposite situation: it is a task that healthcare professionals would prefer not to perform. They have reservations about using PAP because they give priority to other tasks [2].

Most participants agreed that promoting PA was a key part of clinical practice in their work place. Physicians were more likely to agree that they advised patients about PA only if it was linked to the

presenting condition, while nurse parishioners and health visitors were more likely to advise most patients to improve their PA levels. In other way very few healthcare providers in agreed that they only discussed PA if the patient ask about physical activity [3].

According to Ribera et al. [4] active healthcare professionals promoted PA more frequently and perceived it to be more important than inactive healthcare professionals. In one study conducted on "Exercise behavior and attitudes among fourth-year medical students at the University of British Columbia" (2013), revealed that medical students participated in more PA were more likely to view PA counseling as highly relevant to their intended clinical practice. Participants appeared to have a positive attitude to PAP but reported a low level of knowledge about benefits of PAP and how PAP should be used [5]. Physicians' health matters and their personal PA practices affect their clinical PA attitudes and physical activity counseling/prescription practices. This relationship is strong and independent of many demographic variables, training and clinical practice factors [6].

Patients stating that they want and also expect the health care system to provide guidance on lifestyle behaviour and PA. Furthermore, doctors in the hospital setting seems to be the least interested in talking about changing lifestyle behaviour or giving counselling on PA for their patients [7].

One study indicates that with few doctors delivering physical activity advice to their patients, even when confident in their knowledge [8]. Physicians their own PA practices influence their attitudes towards PAP. Medical schools need to increase the number of students adopting and maintaining regular PA habits to increase the rates and quality of future PA prescription/counseling provided by physicians [9].

Physicians were more likely to agree that they advised patients about PA only if it was linked to the presenting condition, while nurse parishioners and health visitors were more likely to advise most patients to improve their PA levels. In other way very few healthcare providers agreed that they only discussed PA if the patient ask about physical activity [3].



According to the study of increasing population level of physical activity through primary care: GP; s knowledge, attitude and self-reported Practice [10] investigate that: Over three-quarters of responders believed that they had sufficient knowledge to give advice about PA and GP show that they would give advice to patients who were overweight more frequently than they would for any other conditions.

In the study of Perceptions of nurse practitioners regarding their role in physical activity and exercise prescription for older adults [9] suggest that health promotion related to physical activity and exercise is an integral part of the nurse practitioner role. Information about the extent to which healthcare professionals counsel patients about physical activity and exercise prescription has not been well documented. It is imperative that policymakers should consider physical activity and exercise counseling as a condition for reimbursement in primary care visits.

The purpose of this study was to determine self-perceived attitude and role of healthcare professionals to prescribe physical activity for their patients in healthcare setting.

## METHODS

Most evidence about healthcare professional's physical activity prescription behaviour comes from developed countries. Ethiopian healthcare professionals physical activity prescription/counseling attitude and role are unknown. Investigate this evidence is very important to inform future physical activity strategies, exercise as medicine, to prevent and treat non-communicable diseases relevant to Ethiopia.

A quantitative and descriptive design was used to assess Addis Ababa's healthcare professionals' physical activity counseling and prescription behavior for chronic (non-communicable) diseases in hospital setting. Descriptive research includes surveys and fact-finding enquiries of different kinds. The major purpose of descriptive research is to describe the state of affairs as it exists at present [11].

Ethiopia has a total of 9 regions and two administrative cities. Addis Ababa city is among those and the capital city of Ethiopia. Addis Ababa city would provide the setting for the study. Why the hospitals in Addis Ababa have been selected because a large number of patients and healthcare professionals found there. Therefore the study has been conducted in Addis Ababa city only.

Source population of the study were the registered healthcare professionals (medical doctors, nurses and physiotherapist) with any age and sex and currently on practice in the sample hospitals. Seven sample hospitals have been selected randomly from 12 hospitals. The sample hospitals were include: Black lion referral hospital, Federal police referral hospital, St. Paulos referral hospital, St. Petere's hospital, Zewditu hospital, Yekatit 12 hospital, and Trunesh Beijing General Hospital.

### Sample size and sampling procedure

The sample size was determined by using the formula for estimating a single population proportion. Sample size was calculated by taking the proportion of physical activity prescription/counseling which is 50% on healthcare professionals (medical doctors, nurses and physiotherapist) for chronic disease with 95% confidence level, 5% margin of error to get an optimum sample size that allowed the study to look into various aspect of physical activity prescription/counseling among healthcare professionals. Why have taken

population proportion 50% because there is no previous study in this area, in our country, and impossible to predict the population proportion on physical activity prescription/ counseling for chronic diseases among healthcare professionals. Based on the above assumptions, the formula is as follows [12]:

$$s = X^2NP(1-P) \div d^2(N-1) + X^2P(1-P)$$

s = required sample size

$X^2$  = the table value of chi - square for 1 degree of freedom at the desired confidence level

$$(3.841) \text{-----} 1.96 \times 1.96 = 3.8416$$

N = the population size

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

Based on this formula the maximum sample size would be 384, assume 85% would be return rate, then add 15%, the total sample would be 442. By using simple random technique and stratified sampling from the sample hospitals, the following samples have been drawn: Physicians = 175, Nurses = 225 and Physiotherapist = 34, totally 442 healthcare professionals were selected as sample subjects for this study.

### Measures and data collection instruments

Attitude and role towards physical activity prescription/ counseling of healthcare professionals were measured by five items in 4 points Liket scale, Strongly Disagree = 1 up to, Strongly Agree = 5:

- Good physical activity habits of the healthcare professionals can encourage their patients to exercise and maintain good health
- Exercise counseling/prescribing is important in healthcare professional practice
- Only advise patients about physical activity if linked to their current problem
- Discussing the benefits of a physically active lifestyle with patients is part of the healthcare professionals' role
- Healthcare professionals should be physically active to act as a role model for their patients [13] and [14].

And healthcare professional's physical activity habits were assessed by using the International Physical Activity Questionnaire [15,16].

### Pilot study

First the protocol was commented by experts (two medical doctors, two public health professionals, three sports science professionals and one physiotherapist) on the contents of the questionnaire, understanding and clarity of the questions. According to the comment the amendments were made.

Second a pilot study was conducted on three institutions: Debremarkos General Hospital, Jerusalem Higher Clinic and Debremarkos University, sample participants were 4th year medical (medical doctor) students from Debremarkos University Medical science college, Physicians, physiotherapist and nurses from Debremarkos General Hospital, Jerusalem Higher Clinic, totally 25



healthcare professionals. Based on the result of the pilot study have been checked any possible confusions or difficulties arising during completion of the questionnaire, then taking the feedback and determine the content validity of the questionnaire by applying the appropriate amendment. The participants from the pilot study were not included from the main study.

**RESULTS**

In this section the attitudes of healthcare professionals towards physical activity prescription or counseling are reported. This includes their attitude towards: good physical activity habits of HCPs, exercise counseling/prescribing is important in the field of HCP practice, only advise patients about PA if linked to current problem, discussing the benefits of physically active lifestyle with patients is part of HCPs' role and exercise is as effective as medicine were examined. For analysis the choices of strongly agree and Agree are sum to = Agree: strongly disagree + Disagree = Disagree.

Majority of HCPs (n = 385, 90.1%) agree to good physical activity habits of HCPs can encourage their patients to exercise and maintain good health (Table 1). Most of HCPs (88.5%) agree that exercise counseling/prescribing is important in the field of HCP practice, (76.5%) believed that only advise patients about PA if linked to current problem, (78.2%) HCPs agree that discussing the benefits of physically active lifestyle with patients is part of HCPs' role, while only (37.7%) of HCPs believe that exercise is as effective as medicine. In general most of healthcare professionals were had positive attitude towards counseling PA as preventative or management modality for chronic diseases.

Hypothesized that there is not a significant difference between male and female healthcare professionals on attitudes towards physical activity prescription /counseling. The result from chi-square analysis has reported that there was a significant difference between male and female HCPs (92.3% of female HCPs and 87.6% of male HCPs) were strongly agree on good physical activity habits of healthcare professionals can encourage to counsel PA for their patients ( $\chi^2 = 8.57, df = 2, p = .01$ ). Differences were observed on: exercising counseling is important in healthcare setting (84.5 % of female HCPs and 93.2% of male HCPs were strongly agree,  $\chi^2 = 8.16, df = 2, p = .04$ ). 42.4 % of female and 32.2% of male HCPs strongly agree on that exercise is as effective as medicine ( $\chi^2 = 10.63, df = 2, p = .04$ ). In those the above three variables there was a significant difference in statistically between male and female healthcare professionals but when look critically there was not a big figure difference regarding to their attitude towards prescribe/counseling physical activity. In other hand on the other two variables the chi-square analysis clearly demonstrate that there was not a significant difference between male and female HCPs on: advise patients about PA if linked to current problem and discussing the benefits of a physically active lifestyle with patients is part of the HCPs' role ( $\chi^2 = 5.31, df = 2, p = .15, (\chi^2 = 5.86, df = 2, p = .21, respectively)$  (Table 2).

We can also observe that the independent t-test analysis of male and female healthcare professionals' of attitude towards to prescribe/counsel physical activity. The result demonstrates that there was not a significance difference between male and female HCPs on their attitudes towards to prescribe/counseling physical activity for their patients in hospital setting.

Regarding to physical activity levels of HCPs' from IPAQ, computed MET-minutes per week then categorized in to three

different categories of physical activity levels: Low, Moderate and Vigorous as suggested in "International Physical Activity Questionnaire" (IPAQ, 2004, 2005). Our study revealed that the majority of (73.7%) of healthcare professionals reported moderate level of physical activity, only 2.8% of participants in the study were suggest that highly physically active and only 23.5% of the respondents were categorized as low physical activity level. In general above the three-fourth of participants were categorized as physically active and nearly one-third of the respondents categorized as low level of physical activity (Table 3, 4).

Personal physical activity levels was significantly and positively correlated with knowledge of HCPs to prescribe/counsel PA ( $r_s = .306, p = .000$ ) and confidence of HCPs to PPA ( $r_s = .266, p = .000$ ).

**Table 1:** Attitude toward PAP.

Items	SD	D	A	SA	M
Good PAH of the HCPs can encourage patients to exercise and maintain good health (n = 385)	-	9.9 %	54.8%	35.3%	3.25
Exercise counseling is important in my current field (n = 383)	.8%	10.7%	54.3%	34.2%	3.22
Advise patients about PA if linked to current problem(n = 386)	3.6%	19.9	45.9%	30.6%	3.03
Discussing the benefits of a physically active lifestyle with patients is part of the HCPs' role (n = 385)	2.1%	19.5%	46%	32.2%	3.09
Exercise is as effective as medicine(n = 387)	27.1%	35.1%	23.5%	14.2%	2.25

**Key note:** SD = Strongly Disagree; D = Disagree; A = Agree; SA = Strongly Agree; M = Mean

**Table 2:** Differences of female and male HCPs' Attitude from Chi-square analyses.

Variables	Female (%)		Male (%)		$\chi^2$	df	P
	D	A	D	A			
Good PAH of the HCPs can encourage to counsel PA	7.7	92.3	12.4	87.6	8.57	2	.014
Exercise counseling is important in current field	15.6	84.5	6.8	93.2	8.16	2	.043
Advise patients about PA if linked to current problem	19.2	80.9	28.8	71.2	5.31	2	.150
Discussing about PA is part of the HCPs' role	5.6	75.4	18.1	81.3	5.86	2	.210
Exercise is as effective as medicine	57.6	42.4	67.8	32.2	10.63	2	.014

Key notes: D = Disagree, A = Agree,  $\chi^2$  = Chi-square, p = significant level.

**Table 3:** Personal physical activity levels.

PLs	N	Percent of respondents
Low	83	23.5
Moderate	260	73.7
High	10	2.8

**Table 4:** Correlations of personal physical activity levels with knowledge, attitude and confidence.

Scale	PALS in MET minutes per week		P
	N	$r_s$	
Knowledge		.304**	.000
Attitude		-.049*	.338
Confidence		.266**	.000

\*\*Spearman Rho correlation is significant at the .01(2-tailed)  
\*Spearman Rho correlation is not significant at the .05 (2-tailed)



This indicates that, the more physically active the participants, they were had a greater knowledge and confidence to prescribe/counsel about physical activity for their patients. While personal physical activity levels was not significantly correlated with attitude ( $\rho = -0.048, p = .346$ ).

## DISCUSSION

In the present study, majority of HCPs ( $n = 387, 90.2\%$ ) agree to good physical activity habits of HCPs can encourage their patients to exercise and maintain good health. Most of HCPs (88.6%) agree that exercise counseling/prescribing is important in the field of HCPs' practice, in line with this over 93% of physicians understood the benefits of exercise [17] and (76.4%) believed that only advise patients about PA if linked to current problem in line with this result one study suggest that physicians were more likely to agree that they advised patients about PA only if it was linked to the current condition and very few healthcare providers agreed that they only discussed PA if the patient ask about physical activity [3], (78.3%). HCPs agree that discussing the benefits of physically active lifestyle with patients is part of HCPs' role. Previous study consistently revealed that almost all (96%) felt that it was a physician's responsibility to counsel patients about exercise [17] and [18] and health promotion related to physical activity and exercise is an integral part of the healthcare professionals role [19], while (37.7%) of HCPs did not believe that exercise is as effective as medicine but in other study the majority of participants (84%) agreed that exercise counseling is as valuable an intervention as prescribed medication [20].

In one study conducted on Exercise behavior and attitudes among fourth-year medical students at the University of British Columbia [21], revealed that medical students participated in more PA were more likely to agree PA counseling as highly relevant to their intended clinical practice. Overall, 69% of medical students believed PA counseling to be highly relevant to clinical practice, but 86% thought that their training in relation to physical activity prescription/counseling was less than extensive. A large majority of the healthcare providers (78%) agreed that there is a role for PA in primary and secondary (91.1%) prevention of chronic diseases [18]. The more physically active the healthcare professionals, the more frequently prescribe/counsel physical activity to their patients in their practice and they were had a greater knowledge and confidence to prescribe/counsel about physical activity for their patients [22].

## CONCLUSION

In the present study, majority of HCPs agree to good physical activity habits of HCPs can encourage their patients to exercise and maintain good health. Most of HCPs agree that exercise counseling/prescribing is important in the field of HCPs' practice, in line with this over 93% of physicians understood the benefits of exercise [17], and this study suggest that physicians were more likely to agree that they advised patients about PA only if it was linked to the current condition and very few healthcare providers agreed that they only discussed PA if the patient ask about physical activity. HCPs agree that discussing the benefits of physically active lifestyle with patients is part of HCPs' role. Previous study consistently revealed that almost all (96%) felt that it was a physician's responsibility to counsel patients about exercise [17] and [18] and health promotion related to physical activity and exercise is an integral part of the healthcare professionals role [19], while (37.7%) of HCPs did not believe that exercise is as effective as medicine. The current study have shown that most of

healthcare professionals not strongly agree on exercise is as effective as medicine. A large majority of the healthcare providers (78%) agreed that there is a role for PA in primary and secondary (91.1%) prevention of chronic diseases [18]. Generally the investigation of this study has large impact on healthcare professionals physical activity prescription practice, since it has shown that clearly about the gaps regarding to attitude and role of healthcare professionals to prescribe/counsel PA to their patients in healthcare setting. In addition to their attitude, confidence, knowledge and their physical activity level also have impact on their PA prescription/counseling practice [22].

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