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Exercise Prescription for Non-Communicable Diseases: Knowledge and Practice Among Healthcare Providers

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Abstract

Introduction: *Exercise prescription (EP) use as medicine is an effective approach. It is the cornerstone to prevent and manage non-communicable diseases (NCDs). The purpose of this study was to investigate the knowledge, confidence and practice of healthcare providers towards NCDs pertaining to EP in West Gojjam Zone hospitals, Amhara region, Ethiopia.*

Materials and Methods: *Cross sectional research design was carried out in hospital setting. The data were collected through self-administered questionnaires from 7 governmental hospitals of 353 HCPs (Medical doctors=107, 30.3%, Nurses=157, 44.5% and Midwiferies=89, 25.2%). The data was collected and analyzed from March to June, 2021.*

Results: *The HCPs reported that; majority of 80.6% respondents had poor written exercise prescription practice for their patients. 62.5% of HCPs were agreed on had not sufficient knowledge on exercise prescription guideline for NCDs. Male HCPs were had better exercise prescription practice (x^2 = 228.756, df = 15, p =0.000). HCPs knowledge and confidence was had a significance difference by profession (Medical doctors: Mean rank =198.71, Nurses: Mean rank =171.96 and Midwifery: Mean rank =159.78, x^2 = 7.773, df = 2, p =0.021). Exercise prescription practice (EPP) was significantly and positively correlated with Knowledge and Confidence (rho=0.292, p= 0.000).*

Conclusion: *Exercise prescription's practice, knowledge and confidence of majority of HCPs were poor. Need to be prepared exercise prescription guideline used as a bench mark for healthcare providers and establish training program for HCPs how to prescribe physical exercise to prevent and manage NCD to their patients.*

Keywords: Non-Communicable Diseases, Exercise Prescription, Healthcare Provider, Knowledge and Practice.

1. Introduction

Exercise prescription (EP) use as medicine is an effective but neglected treatment for many non-communicable diseases and considered exercise like medicine [1]. Exercise prescription refers to the specific plan of fitness-related activities that are designed for a specified purpose [2,3]. Physical activity (PA) and exercise are often used interchangeably, but these terms are not synonymous. Exercise (a structured, systematic subset of PA designed to maintain or improve one or more physical capacities, discipline and with the specific dimensions of intensity, duration and frequency) [4,5]. Insufficient PA/Exercise has been identified as the fourth leading cause of NCDs [6]. Insufficient exercise /physical inactivity would cause 9% of premature death globally and it has a great economic impact [7]. They are quickly becoming the 21rst century's main public health challenge for all nations [6,8].

Non-communicable diseases (NCDs) are now the greatest cause of morbidity and mortality even in developing countries like Ethiopia, where they account for twice as many deaths as HIV ADIS, tuberculosis, malaria, and all other infectious diseases combined [9]. The prevalence of NCDs in African region is increased from year to year [10]. It has also a significant problem to Ethiopia's health and economic development. The economic costs of NCDs are estimated that at least 31.3 billion birr (US$ 1.1 billion) per year [11,12].

Health care providers (HCPs) are therefore being called upon to become more aggressive in implementing physical activity recommendations/prescription. Currently according to the report, using physical activity/exercise a prevention approach standard method is applicable throughout the world [9]. Exercise is an appropriate treatment and protection mechanism than pharmacology due to; no environmental impact, it needs low budget consumption and reduce economic impact, a less side-

effect, not expensive. Exercise Prescription (EP) plays a great role for the management of NCDs in a hospital setting; it is an important vehicle/place to EP. Even if exercise has similar or better result compared with drugs for the management and prevention of NCDs, but it is almost ignored by health care providers to prescribe exercise for their client and advice to participate in regular activity is the role of HCPs and show as a role model for their clients [3, 14-16].

The healthcare providers (nurses, physicians, physiotherapist etc.) have a vital function to prevent and manage NCDs, enhancing physical activity in a hospital setting [3]. Even though the previous study shows that they are not much to prescribe and council physical activity and not considered as their role and waste of time, this study is also supported by [14,17]. There is inconsistency between healthcare providers' knowledge and practice towards exercise prescription [15,18,19].

According to the study finding in Ethiopia, HCPs knowledge and confidence to prescribe specific exercise by healthcare providers (physician, nurses and physiotherapist) had poor knowledge to prescribe physical activity [3,18,20]. Other study was also investigated, there was a problem with the level of physician confidence in helping patients make a behavioral change [21] . Healthcare professionals asked their patients about their physical activity levels [22].

According to majority of healthcare providers never asked their clients about their physical activity and other HCPs occasionally asked patients about their PAL [3,19,22]. Evidence and information about healthcare providers (HCPs) towards exercise prescriptions (EPs) for NCDs for developing countries are lacking [3]. In Ethiopia this problem is highly shown, even unknown [18,32]. Policy interventions that can bring about population wide change in physical activity participation have been institutionalized in many countries [31].

Therefore, currently many deaths are registered surrounding to us if we want to ask the cause, majority of it is whether cardiovascular, cancer, respiratory or diabetes. So, such worst situations and an alarming rate of increasing NCDs motivated the researchers to investigate the knowledge and confidence, and practice of EP among HCPs for NCDs in West Gojam Zone hospitals, Amhara region, Ethiopia. Because of HCPs and healthcare settings are the best, vital and a crucial venue to prevent and manage NCDs through exercise [3,18]

2. Materials and Methods

2.1 Study Participants, Design and Recruitments

The purpose this research was to investigate the knowledge, confidence and practice of exercise prescription among HCPs for NCDs in west Gojam Zone hospitals, Amhara region, Ethiopia. Thus, the study was conducted in one zonal referral hospital and in six primary public hospital settings of HCPs. The study design was a descriptive cross-sectional survey in order to answer the research questions. This type of design for this study is ideal [3,22].

The target population of this study was the West Gojjam Zone hospitals of healthcare providers (Physicians, Nurses and Midwiferies) that were worked in the year 2020/2021. The total number of hospitals were 7 under those hospitals there were 487 (Male 297 and Female 190) HCPs; 107 Medical doctors, 264 Nurses and 116 midwiferies. Hospitals and medical doctors selected through whole sampling technique since they are small size and manageable and Nurses and midwiferies were selected first by using through the calculation formula then strata to distribute for each hospital and gender finally simple random sampling technique was used.

2.2 Data Collection Instrument

The study was used self-administered questionnaire as a data collection instrument. Questionnaires were constructed to answer the leading research question and demographic characteristics. After cheeked on pilot study, 4 items (Cronbach's $\alpha = 0.777$) designed for practices of HCPs to prescribe exercise for NCDs; measurement questionnaire items were adopted, for this study used with some modification [3]. The questionnaires were measured by using frequency (Never=1, Very Rarely=2, occasionally=3, frequently=4 and very frequently=5), 10 items (Cronbach's $\alpha = 0.923$) were designed for knowledge and confidence of HCPs regarding on exercise prescription. The questionnaire from 1-9 were adopted from with some modification and question 10 by the researcher. Items were measured by using likert scale rang of (strongly disagree=1, disagree=2, undecided=3, agree=4 and strongly agree=5) [20,19,28]. The pilot study was conducted in Tibebe Gion specialized hospital, Addis Alem primary hospital and Gamby Medical Teaching Hospital HCPs (medical doctors, nurses and midwifery). The actual data was collected and analyzed from March, 2021- June, 2021.

2.3 Eligibility Criteria of the Participants

The study participants were selected through recently registered on the human resource case team as a healthcare provider (medical doctors, nurses and midwiferies), worked in a selected hospital (in the year 2020/2021), and willingness to participate, recently working on prescriptions of drugs and/ exercise, healthcare settings were governmental.

2.4 Statistical Analysis

Data obtained from the study participants were analyzed quantitatively; both descriptive and inferential statistics were used in data analysis and discussion by using the statistical program for social sciences (SPSS) version 24. Before to determine the types of SPSS method used and to know the data was parametric or non-parametric data; first checked the normality distribution assumptions of data by using Skewness and Kurtosis, normal Q-Q plot, Histogram, Kolmogorov-Simirnov and Shapiro-Wilk test of normality. According to those tests of normality the data was not

normality distributed (both Kolmogorov-Simirnov and Shapiro-Wilk p value = 0.000, assumption for normality distribution: p>0.05), Skewness and Kurtosis value divided by with their Std. Error value, the result is not between ±1.96, assumption for normality: the value is between ±1.96, normal Q-Q plot and Histogram graph for each variable also were not shown normality distributed. Therefore, we should be used non-parametric tests for data analysis method; inferential statics (chi-square, Kruskal-Wallis test of analysis, Mann-Whitney U test to examine the variables group comparison and spearman's rank correlation to examine relationships between variables among healthcare providers') and from simple descriptive statics (mean, frequency, percentage, cross tabulation and standard deviation) for demographic characteristics as well as for main variables to answer research questions or to accomplish specific objectives. A two-tailed probability value of $p < 0.05$ for significance was used for association and difference between the study variables.

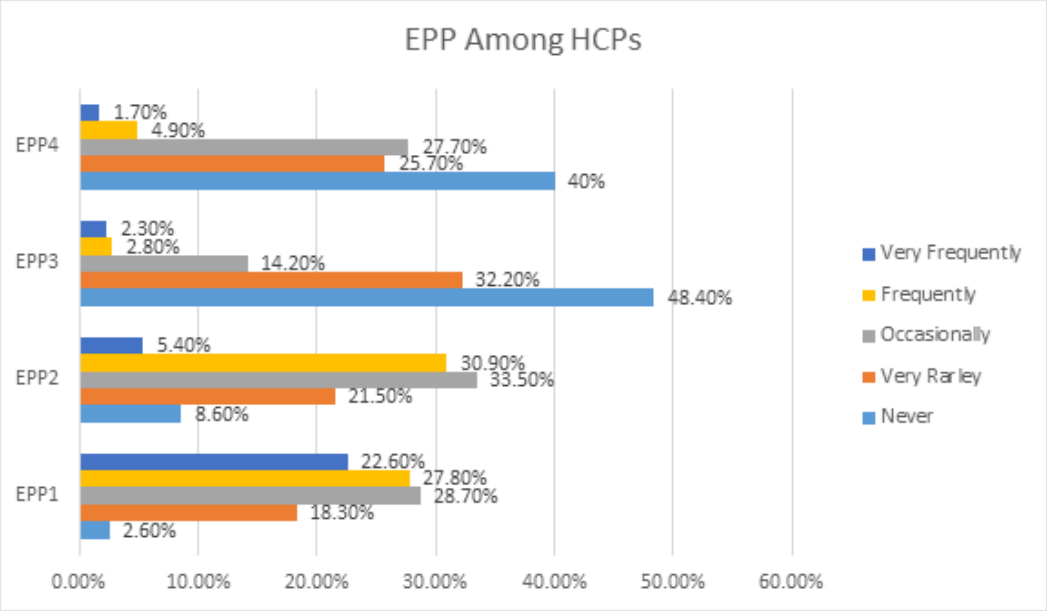
2.5 Ethics and Consent

Based on ethical considerations, asking consent from HCPs to be participated and their responses was kept as confidential.

3. Results

The sample of the study participants were 353 HCPs (medical doctors= 107, 30.3%, nurses= 157, 44.5% and midwiferies = 89, 25.2%) from 7 public hospitals of west Gojjam zone Amhara region, Ethiopia. Most of participants were male (62.6 %, n = 221), majority of 226 (64.0 %) of the total respondents were within the age range of 25–31 years old and majority of them were degree (89.2 %, n=315) holders and half of (n=178, 51.1 %) HCPs were had (≤ 5 year of experience).

Regarding to exercise prescription practice (EPP) for NCDs among HCPs (the results are presented in figure 1 below); almost equal number of HCPs (n = 349, 100(28.7%) occasionally and 97(27.8 %) frequently were asked and discussed with patients about their physical activity level. one third of HCPs (n = 349, 117,108(33.5%, 30.9%) occasionally and frequently gave verbal directions/prescriptions for their patients about physical exercise to manage and prevent NCDs respectively. provide patients with written directions/prescriptions; nearest to half of HCPs (n=351,170(48.4%) never to prescribe exercise and 113(32.2%) were very rarely prescribe to their patients. most of (n=350,140(40.0%) were also never and 97(27.7%) occasionally to refer patients to exercise professionals for fitness assessment.



Key: EPP= Exercise Prescription Practice
EPP1= Ask and discuss with patients about their physical activity levels
EPP2= Provide patients with verbal prescription for exercise/PA training program
EPP3= Provide patients with written prescriptions for exercise/PA training program
EPP4= Refer patients to exercise professionals for fitness assessment

Figure 1: Exercise Prescription Practice (EPP) for NCDs

Generally, to be summarized the measuring scale into three groups (presented in figure 2), those are; never + very rarely = poor practice, occasionally= good practice and frequently + very frequently= very good practice. According to this classification: about ask and discuss with patients; half of 176(50.45%) of HCPs had very good practice, 100(28.7%) of them had good and 73(20.9%) of HCPs had poor practice to ask and discus with patients. About Provide patients with verbal prescriptions 127, 117,105, and (36.3%, 33.5% and 30.1%, 33.5% and 36.3%) of HCPs had very good, good and poor EPP respectively. About written directions/ prescriptions majority 283(80.6%) of respondents had poor EPP and 50, 18(14.2%, 5.1%) of respondents had good and very good EPP respectively. Lastly, refer patients to other professionals' majority of 230(65.7%) of respondents were had poor practice and 97, 23 (27.7 %, 6.6%) of respondents had good and very good EPP respectively.

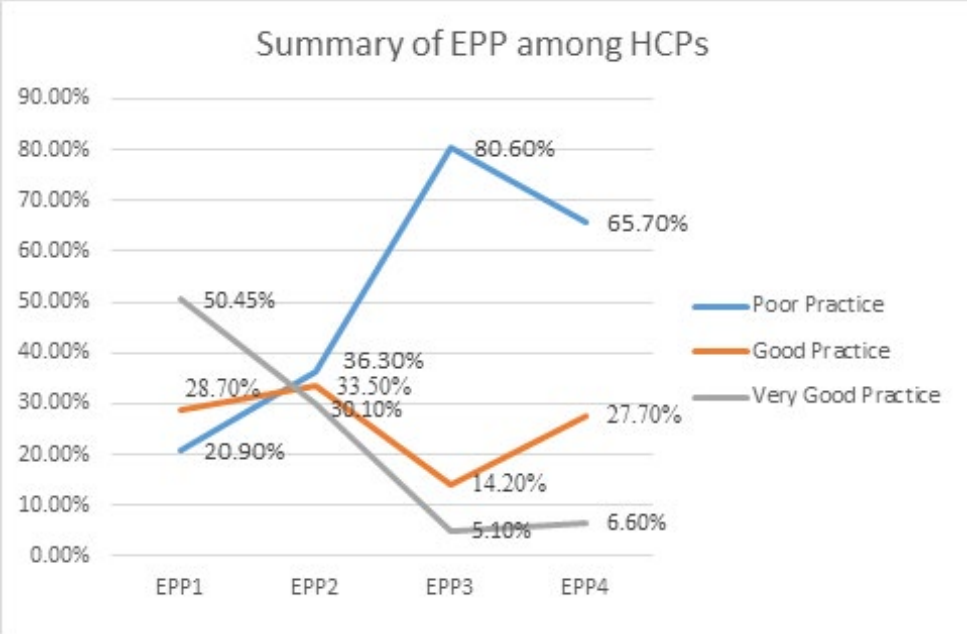


Figure 2: Summary for Exercise Prescription Practice among HCPs towards NCDs

To examine exercise prescription practice among HCPs in relation to demographic characteristics of the sample: Chi-square analysis was used to examine a significance difference between male and female HCPs towards EPP; the result shows that there was a significant difference between male and female healthcare providers towards EPP for their patients (x^2 = 228.756, df = 15, p =0.000). Since, male healthcare providers were had better to exercise prescription practice than female healthcare providers (male: M = 2.663, SD=0.750 and female: M = 2.487, SD=0.671). Kruskal-Wallis test also was used to determine differences among HCPs in relation to profession, educational background, age and year of experience. So, the findings revealed that, there was a significant difference among HCPs exercise prescription practice regarding to profession (Medical doctors: Mean rank =223.46, Nurses: Mean rank =175.57 and Midwiferies: Mean rank =123.67, x^2 = 47.089, df = 2, p =.000).

Regarding to educational background of HCPs towards exercise prescriptions there was also significance difference (post graduate: Mean rank= 271.95, Degree: Mean rank= 179.53 and Diploma: Mean rank =114.59, and,x^2=19.563, df= 2,p= 0.000) but regarding to age of HCPs were had not a significant difference(18-24: Mean Rank=157.95, 25-31: Mean Rank=176.04, 32-38: Mean Rank=186.48, 39-45: Mean Rank=226.17 and ≥ 45: Mean Rank=43.00,x^2 8.450=,df=4,p=0.076) and regarding to year of experience of HCPs towards exercise prescriptions there was no significance difference (≤ 5: Mean Rank=175.14, 6-10: Mean Rank= 170.88, 11-15: Mean Rank= 200.58, 16-20: Mean Rank= 79.86 and ≥ 20: Mean Rank= 177.75, x^2=9.029,df=4,p=0.060,) as such p=0.076 and 0.060 value was not highly significance difference with p<0.05. Generally, medical doctors, nurses and midwiferies hade better EPP respectively, healthcare professionals with post masters, first degree and diploma educational level have better practice respectively but age and year of experience of HCPs had not significance difference.

Spearman's correlation was applied to analyze correlation; exercise prescription practice (EPP) was significantly and positively correlated (the result presented in Table 1 below) with confidence (rho=0.223, p=0.000) and knowledge (rho=0.324, p=0.000). This indicates that the HCPs who had better/more knowledge and confidence, they were had a greater EPPs to manage and prevent their patients from NCDs.

Regarding to knowledge and confidence of healthcare providers towards exercise prescription for NCDs results are presented in

table 1 below. For discussion investigators summarize the result as follows: agree = strongly agree + agree, disagree = strongly disagree + Disagree, undecided.

Items	SD	D	UN	A	SA
I know PA intensities (n= 350)	62 (17.7%)	63 (18.0%)	34 (9.7%)	161 (46.0%)	30 (8.6%)
I know to prescribe specific exercise program (n=343)	78 (22.7%)	94 (27.4%)	53 (15.5%)	93 (27.1%)	25 (7.3%)
I know WHO and ACSM recommendations to prescribe exercise(n= 352)	96 (27.3)	124 (35.2%)	37 (10.5%)	66 (18.8%)	29 (8.2%)
I know PA prescription components (n= 353)	66 (18.7%)	89 (25.2%)	46 (13.0%)	126 (35.7%)	26 (7.4%)
I know the recommended duration for vigorous and moderate intensity(n=350)	88(25.1%)	86(24.6%)	46(13.1%)	117(33.4%)	13(3.7%)
I know more involved HCPs in exercise and role models are the more to prescribe exercise(n=351)	41(11.7%)	42(12.0%)	43(12.3%)	177(50.4%)	48(13.7%)
Confident to fitness evaluation and prescribe exercise according to their fitness level (n=352).	73(20.7%)	106(30.1%)	56(15.9%)	104(29.5%)	13(3.7%)
confident to prescribe/ counsel exercise for patients(n=350)	76(21.7%)	96(27.4%)	33(9.4%)	118(33.7%)	27(7.7%)
confident to ask patients about their physical activity level (n=352)	71(20.2%)	90(25.6%)	62(17.6%)	106(30.1%)	23(6.5%)
I have taken a sufficient course in curriculums or training program (n=353)	134(38.0%)	115(32.6%)	29(8.2%)	54(15.3%)	21(5.9%)

Key note: SD = Strongly Disagree, D= Disagree, UN= Undecided, A= Agree and SA= Strongly Agree

Table 1: Results of Knowledge and Confidence Among HCPs Towards Exercise Prescription

			EPP	COF	K	KC
Spearman's rho	EPP	Correlation Coefficient	1.000	.223**	.324**	.296**
		Sig. (2-tailed)		.000	.000	.000
		N	353	353	353	353

Key note: EPP= Exercise Prescription Practice, KC= Knowledge and Confidence,K= Knowledge, and COF= Confidence, **. Correlation is significant at the 0.01 level (2-tailed), *. Correlation is significant at the 0.05 Level (2-tailed).

Table 2: Correlation of EPP with Knowledge and Confidence

To examine the knowledge and confidence towards exercise prescription among HCPs in relation to demographic characteristics of the sample respondents the following analysis methods were used and results were investigated;

According to the result from Mann-Whitney U test analysis there was not a significant difference between male and female HCPs on knowledge and confidence towards exercise prescription for NCDs (female: mean rank, 168.70 and male: mean rank, 181.95, Mann-Whitney U= 13491.000,Z=-1.181,P= 0.238).The researchers were also checked the significant difference between male and female of HCPs on knowledge and confidence towards exercise prescription; there was also no significance difference on both knowledge and confidence (female: mean rank;168.38, 169.77 and male: mean rank;182.15, 181.32,Mann-Whitney U=13448.000, 13632.000, Z= -1.228, -1.034, P= 0.219, 0.301) between male and female HCPs towards EP respectively.

To examine the significance differences among HCPs knowledge and confidence in relation to profession towards exercise prescription for NCDs was used Kruskal-Wallis test of analysis. Therefore, the findings shown a significant difference among HCPs knowledge and confidence regarding to profession to prescribe exercise (Medical doctors: Mean rank =198.71, Nurses:

Mean rank =171.96 and Midwiferies: Mean rank =159.78, x^2 = 7.773, df = 2, p =0.021). Generally, medical doctors, nurses and midwiferies hade better knowledge and confidence to prescribe exercise respectively.

Spearman's correlation was also the method that was used to analyze association between variables. Knowledge and confidence was significantly and positively correlated with exercise prescription practice (EPP) (rho=0.296, p= 0.000) and also knowledge with EPP (rho=0.324, P=0.000), and confidence with EPP (rho=0.223, P=0.000), confidence and knowledge one to the other (rho=0.782, P=0.000,) had a significance and positive correlation. This indicates that, the better who had a greater and better Knowledge and confidence towards exercise prescription, they also had a better or greater exercise prescription practice to manage and prevent NCDs.

			K	EPP	COF	
Spearman's rho	K	Correlation Coefficient	1.000	.324**	.782**	.969**
		Sig. (2-tailed)	.	.000	.000	.000
		N	353	353	353	353

Key note: COF= Confidence, EEP= Exercise prescription Practice, K= Knowledge

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

4. Discussions

4.1 Exercise Prescription Practice (EPP) Among HCPs

The specific objective of this study was to assess the exercise prescriptions practice (EPP) for their patients among healthcare providers in West Gojjam Zone hospitals, Amhara region, Ethiopia. As the previous studies that was conducted on practices of healthcare professionals in hospital setting, Addis Ababa, Ethiopia and in Kenya the majority of healthcare professionals occasionally ask about PAL of patients [19,3]. In line to this the present study also shows that majority of HCPs occasionally asked and discussed with patients about their physical activity level. But in other hand the study on Mexican health care setting almost half of healthcare professionals always asked their patients about their physical activity levels [22]. The study conducted in south India on exercise counseling practice also have shown One-fourth of the doctors 'always asked and advised' their patients regarding PA [27].

The present study regarding to provide verbal exercise prescription, one third of HCPs occasionally prescribed verbally for their patients about physical exercise to manage and prevent NCDs. This finding is supported by the study [19]. Contrary to those studies the other finding revealed that most of HCPs never prescribe PA verbally [3]. Regarding to providing written prescriptions; the result of this study, nearest to half of HCPs never to prescribe exercise in written form, the result also consistent with the study, more than half (60.2 %) of healthcare professionals reported that, they never provide written prescription of PA to their patients [3]. This is also highly supported by the study that was conducted in Kenya healthcare setting majority healthcare professionals rarely provided patients with written directions for a physical activity program and only 6% provide written physical activity prescription [22]. But surprisingly in contradict to those exercise is medicine Canada have shown that majority of physicians (85%) were provide a written exercise prescription and the study that was conducted in South Africa also shows that 79.9% of healthcare professionals prescribed exercise to their patients in written form [2,14]].

Regarding to refer patients to other professionals; the current study has shown that majority of healthcare providers were never to refer patients to other professionals for fitness assessment. The result is almost similar with the previous study [3]. Only 8% of always refers patients to other fitness professionals [23]. But other studies, majority of healthcare professionals occasionally referred patients to other professionals for fitness assessment [19].

Regarding to gender differences towards exercise prescription practice (EPP), in the current study male healthcare providers were had better to exercise prescription practice than female healthcare providers. This is supported by [3]. Regarding to professions among HCPs towards exercise prescription practice; the present study revealed that there was a significant difference. Medical doctors, nurses and midwiferies had better EPP respectively. Similar to this investigation a study that was investigated in Ethiopia, Addis Abeba indicates that there was a significant difference among the three groups of healthcare professionals (physiotherapist, doctors and nurse) were had the highest physical activity prescription/ counseling scores respectively [3]. But the study investigated in Kenya the medical officer's group was associated with the numerically smallest mean of exercise prescription practice and nurses' group was associated with the numerically highest mean of exercise prescription practice [19].

4.2 Knowledge and Confidence Towards Exercise Prescriptions

Regarding to knowledge of healthcare professionals on the World health organization (WHO) and American college of sport medicine guidelines and recommendations to advise/prescribe PA for patients with NCD: Majority of HCPs, (62.5%) disagree on this idea, means do not know that guidelines. The result is supported by the study which was investigated on Burundi Doctors showed that

92.38% do not know any more the international recommendation on physical exercise practice. Similar to this a study on UK medical students, the studies noted that, health professionals did not know the PA guidelines as well as other health promotion guidelines [24]. Other finding was revealed that only having good knowledge were (19.8%) on current physical activity recommendations [18]. Contrary to this study, the finding was shows that of the 221 HCPs, 96 (43.4%) agreed that they were aware of the WHO guidelines for physical activity and American College of Sport medicine (ACSM) guide line [18].

Regarding to recommended duration; the previous study reported that majority of HCPs, 125(56.6%) were not sure that the recommended quantity of physical activity was 150 minutes per week [25]. The result of this study also reported that almost half of HCPs disagree towards the recommended duration for vigorous and moderate intensity exercises. In relation to awareness towards components of PA prescription (frequency, intensity, duration and type of activity) to design exercise for their patients; previous studies have noted that, primary health care professionals perceived that they lacked adequate knowledge on physical activity prescription components [14,26]. The present study investigation revealed that almost equal number of HCPs (n=353, 155(43.9%) disagree and 152(42.9%) agree on their awareness about PA prescription components respectively (frequency, intensity and time).

In the current study physically, active healthcare professionals have good practice towards exercise prescription to their patients. In line with to the current finding previous studies was supported, the study in Kenya found that most of the respondents strongly agreed that HCPs should be physically active to act as role models for their patients [19].The study that was investigated in Ethiopia, Addis Abeba, was also supported that, majority of HCPs agree to good physical activity habits of HCPs can encourage their patients to exercise and maintain good health [18].

The findings of this research have shown that majority of HCPs have not taken sufficient course or training program regarding how to prescribe exercise for NCDs. Contrary to the present study: the study that was done in south India raveled that most of doctors had taken training and course about how to prescribe PA for their patients [27]. The present study has shown that there was a significant difference among HCPs knowledge and confidence regarding to profession to prescribe exercise (Medical doctors, Nurses and Midwiferies). Medical doctors, nurses and midwiferies were had better knowledge and confidence respectively but the previous study reported that nurses, medical officers and clinical officers were had numerically highest mean of exercise prescription knowledge respectively [19]. Gender difference in terms of knowledge about EP; male healthcare professionals we had more knowledge than female healthcare professionals to prescribe/counsel PA [18]. But the result of this study was inconsistent with the previous study. The finding have shown that there was not a significant difference between male and female HCPs on knowledge and confidence towards exercise prescription for NCDs, even if numerically mean rank of males were better than female (but have not a significant difference) .

5. Conclusion

Exercise prescriptions practice, knowledge and confidence of majority of HCPs were low. Majority of respondents had poor exercise written prescription and refer patients to other professionals. Medical doctors and nurses were had better exercise prescription practice, knowledge and confidence respectively. Majority of HCPs were hadn't awareness about physical activity prescription guidelines, to prescribe specific exercise program, PA prescription components (frequency, intensity and time), have not taken a sufficient course or training program how to prescribe exercise for NCDs. HCPs that had better knowledge on EP, they also had better confidence to prescribe exercise. The educational curriculum of the HCPs should revise and include the course about PA/EP sufficiently, EIME initiative and establishment also should be practiced and EP also better to be established as a one unit in healthcare settings. Continuous trainings on PA/exercise prescription to prevent and manage NCDs for HCPs are very important and exercise recommendation guide line for every healthcare setting should be design at a national level.

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Declarations

Ethical Statement

We confirm that informed consent was obtained from all subjects and all methods were carried out in accordance with relevant guidelines and regulations. This study and the consent form were approved by department of sports science, Debremarkos University, research committee. Signed written informed consent was obtained from all participants and keep the rights of the respondents introduced the nature and the purpose of the study and their response was kept confidential.

Conflict of Interest

We know of no conflict of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome

Contribution of Authors

All authors substantially contributed to the conception and design of this study.

Dessalew Endalew: contributed to identifying the problem, writing the proposal, data collection, analyzing and interpreting data under the supervision of corresponding author.

Getu Teferi: contributed to lead the project, study supervision, statistical analysis, a major contributor in writing and processing the manuscript. All authors read and approved the final manuscript.

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