

Prevalence and Practice of Recommended Physical Activity Level among Middle-Age Adults in Nekemte Town, Western Ethiopia

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ABSTRACT

BACKGROUND

The adaption and adoption of a healthy lifestyle remains a concern globally. Physical inactivity prevalence was high worldwide. It is one of the major risk factor for degenerative diseases. The WHO set a target of a 15 % relative reduction in the prevalence of insufficient physical activity by 0.25 among adults worldwide. However in Ethiopia, there is no national wise estimate for physical inactivity and physical activity by levels, domain, intensity, frequency and duration among middle age not stated in west Ethiopia.

OBJECTIVE

The study aimed to assess prevalence and Recommended level of physical activity among adults in Nekemte dwellers.

DESIGN

A community based cross sectional study.

RESULTS

The prevalence of physical inactive was high. From all patterns of physical activities, large proportions of participants reported for transportation (89.10 %), occupational (86.84 %) and household/ domestic physical activities (78.57 %), but least for recreational activities like other low income countries. The prevalence of physical inactivity of adults was 53.38 %, according to activity guideline. Only few (11.28 %) participants fit the recommended physical activity levels.

CONCLUSIONS

This study reveals the level of physical inactivity, which is risk factor for developing non-communicable diseases high and only few of them fit the global recommended activity level in Nekemte. Therefore, educating community on physical activities targeting age group will increase activity level and reduce burden of chronic diseases.

KEYWORDS

Physical inactivity, Ecommended level, Middle age, Nekemte

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INTRODUCTION

The global prevalence of NCDs is increasing rapidly, including low and middle income countries and in 2012 almost 75 % of NCD-related deaths were taken place and 79% of deaths attributable to chronic diseases are occurring mostly during middle aged.^{1,2} Evidence based studies suggested, physical inactivity was leading risk factor for premature of death.³ World Health Organization (WHO) has declared that 60% of an individual's health-related quality of life depends on his/her lifestyle. Physical activity play significant role on Non-Communicable Diseases (NCDs) prevention and health promotion, mean it play crucial role both in primary and secondary prevention of NCDs. It is mentioned that physical inactivity is one of the current major health treats that need immediate action. It was ranked as the fourth major modifiable risk factor of death globally. However, the burden of physical inactivity was masked in many low- and middle-income countries including Ethiopia.⁴ Epidemiologically, insufficient physical activity is the fourth leading cause of death worldwide.⁵ Physical inactivity is causally associated with coronary heart diseases, breast cancer, and colon cancer.⁶ Globally, in 2016, the prevalence of physical inactivity among adult populations was 23.3 %.⁷ In Ethiopia, Addis Ababa capital city, in 2015 showed a slight increase in the proportion of physically inactive adults.⁸ In line with the concept, because of lack of physical activity most of young age adults are dying due to biological age than chronological ageing. Engaging in to physical activity through face to face coaching and mass activity increases the level of physical activity, but not implemented. Unless community based physical education intervention given it leads to disable to premature death. Therefore, this study aimed to assess prevalence of physical active and inactive among middle aged Nekemte dwellers of West Ethiopia.

MATERIALS AND METHODS

The study setting was done in Nekemte town. Because of hub center for western towns Nekemte was selected. It is 328 km far from Addis Ababa and has six kebeles. Its population projection in 2017 is estimated to be 117,819 and out of this adults 51 % (117,819 = 60,088). A community based cross-sectional study design was conducted on middle age Nekemte dwellers in West Ethiopia from first May 2019 - to 30 May 2019. All middle aged adults (41- 64 years) living in Nekemte Town during the study time were the source of population. While all middle aged (41 - 64 years) adults in the selected communes and registered as a resident and had lived in community for greater than six months were be included in study population. Participants who lived at least six months and aged 41 to 64 years who were eligible to participate in the study. However, those on medication and have known cardiovascular disease; attended behavioral change communication program; pregnant & lactating; bariatric surgery; us anti-psychotics and physically disables were excluded. To calculate a sample, a single population proportion formula was used to calculate the sample size for the original study. The assumptions used to calculate the sample size using central obesity ($p = 19.6\%$) the most common prevalent metabolic syndrome component Ethiopian adults⁹ by considering with the following assumptions: margin of error of 5 %, confidence level of 95 %, 80 power, 10 % non-response rate and Technically, from six kebeles (small administrative unit), two kebeles which were not adjacent but homogeneous in terms of socioeconomically and

geographically were selected. Since data was used as baseline for an intervention, one kebele was randomly selected and the other was purposively allocated with buffering zone through natural geography to avoid data contamination. Data were gathered using structured questionnaires through interview of adults in the local language that translated from English version by trained research assistants. The validated Global Physical Activity Questionnaire.¹⁰ physical activity assessments. For adults of 18-64 years old, physical activity includes recreational or leisure-time physical activity, transportation occupational (i.e. work), household chores, play, games, sports or planned exercise, in the context of daily, family, and community activities.¹¹ In order to improve cardio-respiratory and muscular fitness, bone health and reduce the risk of NCDs and depression the following are recommended: Adults aged 18 – 64 years should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week, or do at least 75 minutes of vigorous-intensity aerobic physical activity throughout the week, or an equivalent combination of moderate- and vigorous-intensity activity. Aerobic activity should be performed in bouts of at least 10 minutes duration. For additional health benefits, adults should increase their moderate-intensity aerobic physical activity to 300 minutes per week, or engage in 150 minutes of vigorous-intensity aerobic physical activity per week, or an equivalent combination of moderate- and vigorous-intensity activity. Muscle-strengthening activities should be done involving major muscle groups on 2 or more days a week. To define the operation, different terminologies were addressed. Physical activity level (PAL) is a way to express a person's daily physical activity as a number, and is used to estimate a person's total energy expenditure.¹² Physical activity from transportation measures the percentage of all trips made by foot or by bicycle that is at least 10 minutes long. Walking or bicycling for sustained periods helps people get enough physical activity to stay healthy.¹³ Occupational physical activity was classified as: (1) light (physically very easy, sitting office work, e.g. secretary), (2) moderate (standing and walking, e.g. store assistant, light industrial worker), and (3) active (walking and lifting, or heavy manual labor, e.g. industrial or farm work). Vigorous physical activities are defined as those producing vigorous increases in respiration rate, heart rate and sweating for at least 10 min duration.¹⁴ Middle age / mid-adulthood: age group from 41 - 64 years old Data analyses were done using SPSS for windows version 24 (Chicago, Illinois) after checking for missing values and outliers. Descriptive analysis was carried out using risk score as dependent variable, with age, gender, income and physical activity (habitual level, patterns and duration). Frequencies and percentages were computed for each demographic characteristic, as well as for prevalence and all levels of walking, moderate and vigorous physical activities.

RESULTS AND DISCUSSION

The Socio demographic characteristics of participants were stated in Table 1. From two hundred sixty six, the sex disproportionate 62.8 % populations were females. Mean age of study participants was 52.5 ± 11.5 years and more than have of them 54.9 % were living below poverty threshold (Table 1).

Variables	Categories	Frequency	Percent (%)
Gender	Female	167	62.8
	Male	99	37.2
Age group (in years)	41 - 48	145	54.5
	49 - 56	77	28.9
	57 - 64	44	16.5
Income (USD/ day)	< 1.25	146	54.9
	> 1.25	118	45.1

Table 1. Socio-Demographic Characteristics of Mid-Adulthoods, 2019, (n = 266).

Prevalence of physical activities by domain was different as Table 2 shows. Out of the 266 participants, from all patterns of physical activities, large proportions of participants reported for transportation (89.10 %), occupational (86.84 %) and household/ domestic physical activities respectively. However, only few participants of them engage in recreational activities (6.39 %) (Table 2).

Variable	Variable, Categories	Frequency	Percent (%)	
What mode of physical activity you engage in?	Occupational(e.g. secretary, farm, industrial, store assistant etc.)	Yes	231	86.84
		No	34	13.16
	Transportation (e.g. daily walking)	Yes	237	89.1
		No	29	10.9
	House hold/domestic (e.g. food preparation, cleaning, weeding, building, , climbing, digging etc.)	Yes	209	78.57
		No	57	21.43
	Leisure time (e.g. activities such as sports, exercising, and recreational walking or its combination)	Yes	77	28.9
		No	189	71.1
	Recreational (e.g. Ball sports, athletics sports, water sports, animal sports, martial arts, yoga , etc.)	Yes	17	6.39
		No	251	93

Table 2. Habitual Physical Activity By Form, Level, Type And Duration In Nekemte Town, 2019

The recommended physical activity levels were reported in Table 3. From the total respondents, large proportions of participants (53.38 %) were engaged in low physical activity. Only 11.28 % of participants were engaged into vigorous physical activity. Low frequency of physical activity of vigorous and moderate intensity taken up during their peak week, indicated in the study, resulted in the low percentage of the respondents whose habitual physical activity could be assessed as beneficial for health as of recommendation (Table 3). Regarding time duration, very few respondents reported doing their physical activity for more than 150 minutes or intensively 75 minutes per week. Overall, 57.96 % of respondents met Global World Health Organization and American physical activity recommendations (at least 150 minutes of moderate activity per week or equivalent) (Table 3).

Variable	categories	Frequency	Percentage (%)
Physical activity Level	Low (Physical inactive)	142	53.38
	Moderate	94	35.34
	Vigorous	30	11.28

Table 3. Proportion (%) Of Physical Activity Based On Number of Days Of the Week And Minutes.

Note:
 Low: < 150 minutes/week for < 3 days or 75 minutes of vigorous-intensity aerobic physical activity.
 Moderate: at least = 150 minutes/ week for 3 – 5 days or equivalent to 75 minutes of vigorous-intensity aerobic physical activity.
 Vigorous: > 150 minutes / week for > 5 days or > 75 minutes of vigorous-intensity aerobic physical activity

This study reveals the proportion of physical active mid-adulthoods was 46.62 %. Several studies conducted in developing countries reported they have high physical activities except few of them. Similar to this study, or example study conducted in 22 African countries shows high percentage of physical activity except Mali (46.80 %).¹⁵ Likewise, this finding was nearly similar with the study result in Malaysia 43.7 % and Nepal (43.3 %).^{16,17} By contrast, these variations might be due to the study period, geographical and lifestyles differences, this finding was lower than evidence reported in China (56.2 %), Saudi Arabia (79.0 %), India (66.6 %), and South Africa (60.5 %).^{18 - 20} Low and middle income populations lack awareness on benefit of physical activity in pattern, frequency and durations as of guideline. Few studies in Ethiopia argue with idea, for example study in Dire Dawa, eastern Ethiopia showed 45.10 % of adults was physical inactive.²¹ This finding was also consistent to these findings. According to global health, Adults should do at least 150 – 300 minutes of moderate-intensity aerobic physical activity; or at least 75 – 150 minutes of vigorous-intensity aerobic physical activity; or an equivalent combination of moderate and vigorous-intensity activity throughout the week, for substantial health benefits.²² In this finding only 35.34 % of the participants met level of physical activity recommendation level. However this study has significant role in study area even throughout the country, there are some limitations that need future research outlook. Firstly, this study used a self-report method in which participants may overestimate their physical activity level and otherwise. Secondly, effect of physical education intervention and other interaction of risk factors of metabolic syndrome were not evaluated. Thirdly identifying determinant causes of physical inactivity.²³ Despite that, study was conducted using the standard questionnaire guideline and make pave of road for researchers and policy makers.^{24,25}

CONCLUSION

This study revealed high prevalence of physical inactivity among mid-adulthoods in the Nekemte town. More than half of the adult population is physically inactive. Besides this study identified different forms of physical activity, of this transportation activities were and least for recreational one. Thus, community based physical educational interventions recommended to increase activity level and halt the future development of non-communicable diseases.

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