P-ISSN: 2617-9806
E-ISSN: 2617-9814

Impact Factor: RJIF 5.2
www.nursingjournal.net

International Journal of Advance Research in Nursing

Volume 6; Issue 1; Jan-Jun 2023; Page No. 189-192

Received: 12-12-2022
Accepted: 17-01-2022

Indexed Journal
Peer Reviewed Journal

Pattern of physical activity and associated sociodemographic factors among the adult population of Tumkur city

Anubama K

Assistant Professor, Department of Paediatric Nursing, Sri Siddhartha College of Nursing, Tumkur, Karnataka, India

DOI: https://doi.org/10.33545/nursing.2023.v6.i1.C.318

Abstract

Introduction: Non-communicable diseases (NCDs) account for nearly half of the overall global burden of disease. Physical inactivity has been reported to be a major independent "modifiable" risk factor for NCDs. Increase in physical activity decreases the incidence of cardiovascular diseases, Type 2 diabetes, stroke, and improves psychological wellbeing.

Aim: To estimate the prevalence and predictors of physical inactivity among the adults in Tumkur.

Methodology: This cross-sectional study was conducted among 374 adult participants from an urban area of Tumkur. The level of physical inactivity was measured by using WHO standard Global Physical Activity Questionnaire (GPAQ).

Results: Overall prevalence of physical inactivity in our study was 52%. Among the study participants, contribution of physical activity in work domain was more with a median of 3720 minutes. The leisure time activities and transport domain contribute a median of 2520 and 1260 minutes, respectively. Both men and women were equally inactive, women – 56.2% and men - 48.8%. Females were 1.9 times more inactive than males. Literates were more inactive as compared to illiterates. Tobacco users were 2.2 times more inactive than non-tobacco users.

Conclusion: Physical activity was observed to be inadequate among women, literates and current tobacco users. To counteract the morbidities brought on by physical inactivity, physical activity promotion is required.

Keywords: Global physical activity questionnaire, physical activity, sedentary lifestyle

Introduction

Non-communicable diseases are one of the major challenges for public health in the 021st century. Of 55.4 million global deaths in 2019, 66% were due to non-communicable diseases (NCDs) [1]. Physical inactivity has been reported to be a major independent modifiable risk factor for NCDs and is detrimental to health. Insufficient physical activity is the 4th leading risk factor for mortality [2]. Physical inactivity is responsible for around 3.2 million deaths and 32.1 million disability-adjusted life years (DALY) each year, accounting for approximately 2.1% of all DALYs worldwide [3].

Prevention of diseases is considered as the best strategy especially in developing and under developed countries, where the disease burden is very high and the cost of secondary and tertiary health care are unreachable to most of the population. Many studies have shown that increase in physical activity decreases the incidence of cardiovascular diseases, type 2 diabetes, stroke, and improves psychological wellbeing [2]. Encouraging physical activity plays an important role in reducing the burden of Non-Communicable Diseases (NCDs). In 2013, Global NCD Action Plan 2013-2020 was endorsed in World Health Assembly, to promote healthy diets and physical activity, and to attain nine voluntary global targets for NCDs including ones on diet and physical activity to be achieved by 2025 [4].

This study is aimed to estimate the prevalence and predictors of physical inactivity among the adults in Tumkur.

Materials and Methods

This was a community based cross sectional study conducted among early middle-aged adults i.e., 20-50 years of age in the selected areas. The reason for choosing 20-50 years was because this group is usually the employed/ actively working group and have different lifestyle related factors as compared to the late middle-aged population i.e., 50 to 64 years. In addition, NCDs affect Indians, a decade earlier as compared to those in western countries. All those individuals more than or equal to 20 years of age and less than or equal to 50 years of age on the day of interview were included in the study.

Those adults not willing to participate, severely ill, physically handicapped or in special physiological groups such as pregnant and lactating were excluded from the study as their PA levels would be deviated towards lower side and would not be reflective of the normal population.

The required sample size was calculated as 374, assuming the prevalence of physical inactivity as 66.8%, with absolute precision of 5% and non-response rate of 10% [5]. Multistage stratified sampling was used to select the sample population. Global Physical Activity Questionnaire (GPAQ), which is a

validated questionnaire developed by WHO, was used for assessment of PA in adults in field setting [6].

Metabolic equivalents (MET)

MET is the ratio of a person's working metabolic rate relative to the resting metabolic rate. One MET was defined as the energy cost of sitting quietly and was equivalent to a caloric consumption of 1 kcal/kg/hour [6].

Physical activity

To assess physical activity, MET scores were calculated separately for individual domains and sub domains, adopting existing guidelines [7]. When calculating a person's overall energy expenditure using GPAQ data, 4 METs were assigned to the time spent in moderate activities, and 8 METs to the time spent in vigorous activities. For the calculation of a categorical indicator, the total time spent on physical activity during a typical week, the number of days as well as the intensity of physical activity were taken into account. As per the guidelines for interpreting GPAQ Version 2.0, individuals were classified as active if, throughout a week (including activity for work, during transport and leisure time), they were involved in at least 150 minutes of moderate-intensity physical activity OR 75 minutes of vigorous-intensity physical activity OR an equivalent combination of moderate- and vigorous intensity physical activity achieving at least 600 MET minutes [8]. In addition, physical activity was further classified based on MET-minutes into three groups as: Inactive/low (1200 met-minutes).

Data regarding socio-demographic characteristics, behavioural risk factors and chronic diseases was collected through a pre-designed, pre-tested questionnaire, after obtaining informed written consent from the participants.

Data was analysed using SPSS software version 22.0. Median and Inter-quartile range reported for METs. Logistic regression was performed to identify the predictors of physical inactivity.

Results

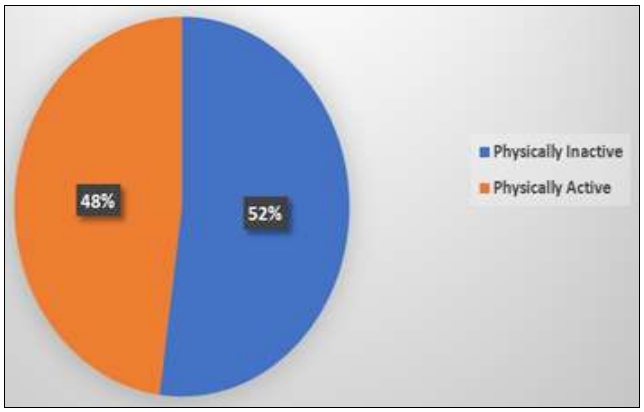

Fig 1: Proportion of study population who are physically inactive

This study has a total of 374 participants with mean age of 33.9 (SD = 9.8) of which males were 205 (54.8%) and females were 169 (45.2%). Overall prevalence of adults with physical inactivity in our study was 52% (fig 1). Association of physical inactivity with other variables are shown in the [Table 1], METs score presented in [Table -2] and logistic regression for significant variables presented in [Table -3]. Gender, education and tobacco consumption are associated with level of physical inactivity in our study.

Table 1: Association of Physical inactivity and sociodemographic factors

Variable		Physically Inactive (%)	Physically Active (%)	p-value
Age	20 - 35 years	122 (55.5)	98 (44.5)	0.13
	36 - 50 years	73 (47.4)	81 (52.6)	
Sex	Male	100 (48.8)	105 (51.2)	0.15
	Female	95 (56.2)	74 (43.8)	
Education	Illiterate	31 (42.5)	42 (57.5)	0.07
	Literate	164 (54.5)	137 (45.5)	
Employment	Unmarried	51 (49)	53 (51)	0.46
	Married	144 (53.3)	126 (46.7)	
Smoking History	Present	37 (59.7)	25 (40.3)	0.28
	Absent	158 (50.6)	154 (49.4)	
Alcohol Consumption	Present	34 (52.3)	39 (47.7)	0.78
	Absent	161 (52.1)	140 (47.9)	

Table 2: Total distribution of METs score among study participant in different domains.

Domain	Median (25th-75th)*
Work	3720 (840-5760)
Transport	1260 (600-1680)
Leisure	2520 (420-1440)
*Inter quartile range (IQR)	

Table 3: Logistic Regression model of the predictors of physical inactivity

Variables		OR (95% CI)
Age	20 - 35	R
	36 - 50	0.7 (0.5 - 1.1)
Gender	Male	R
	Female	**1.9 (1.2 - 3.1)***
Education	Illiterate	R
	Literate	**1.8 (1.04 - 3.2)***
Tobacco Consumption	Yes	2.2 (1.8 - 4.1)
	No	**R***
*Significant $P<0.05$. OR: Odds ratio, CI: Confidence interval, R: Reference		

Discussion

Tumkur which lies in the south-eastern region0of Karnataka has an overdose of industry-induced urbanization which in turn is leading to changes in lifestyle and behaviour. This study has been conducted in the heart of the city. Overall prevalence of physical inactivity in our study was 52%, which is higher than the global prevalence of physical inactivity 21.4% [8]. But is lower than the multicentric ICMR-INDIAB study done in India (physical inactivity among Indian urban population is 65% [5]. This high level of

physical inactivity is alarming in our study. India is the top in the world having highest number of diabetic patients and the number is also estimated to be increase very rapidly in near future [9]. Interventions need to be stepped up giving priority to physical activity and healthy life style.

The main contribution of total physical activity was from work domain with a median of 3720 minutes. The leisure time activities and transport domain contribute a median of 2520 and 1260 minutes, respectively. Similar pattern was noted in other studies where the contribution of work was more when compared to leisure time and transport activities, but the proportion of contribution by work time was very high in our study when compared to leisure time and transport time physical activity. There is a hope to sensitize the general public during leisure time and transport time physical activity [5].

In our study, both men and women were equally inactive, women – 56.2% and men - 48.8%. The prevalence of inactiveness was very high when comparing to the world-wide estimate {women - 23.7% and men - 18.9% [8]. One of the studies conducted among adult women in Thiruvananthapuram city in India has shown 26.6% physical activity which is also lower than our study [10]. Prevalence of physical inactivity was higher in the age group 20-35 years. Non tobacco users were two times more active than tobacco users (Adjusted Odds Ratio - 2.2). This is a positive finding. Similar findings were noticed in other studies [11, 12]. Studies have also shown that refraining from smoking and doing regular physical activity predict a long and healthy life [13].

Limitations

This study has been done in an urban area of Tumkur City. Generalisation from our study should be done with caution, which is a limitation of this study.

Conclusion

Physical activity was insufficient among urban population, both male and female in Tumkur. Overall physical activity can be promoted by increasing leisure time and commuting activities. Special attention is advocated to promote physical activity among women, literates and current tobacco smokers.

Recommendation: Strategies for increasing physical activities should be designed and targeted towards women, literates and current tobacco smokers. Information, education and communication activities should be held to increase the knowledge and awareness among the people. Integration of physical activity at work by instituting minor modifications in the working environment is recommended. For improving the activity levels, a 10-15 minutes routine workout may be made mandatory as in urban cities.

Conflict of Interest

Not available

Financial Support

Not available

References

1. 2013-2020 Action Plan for the Global Strategy for the Prevention and Control of Non-communicable Diseases. [online]. Switzerland: World Health Organisation; 2013 [cited 2 October 2022]. Available from: http://www.who.int/nmh/publications/ncd_action_plan_en.pdf [Last accessed on 2023 Apr 04]
2. Newtonraj A, Murugan N, Singh Z, Chauhan R, Velavan A, Mani M. Factors associated with physical inactivity among adult urban population of Puducherry, India: A population based cross-sectional study. Journal of clinical and diagnostic research. 2017;11:LC15-LC17. DOI: 10.7860/jcdr/2017/24028.9853 [Last accessed on 2023 Apr 04]
3. Indicator metadata registry details [Internet]. Available from: https://www.who.int/data/gho/indicator-metadata-registry/imr-details/3416 [Last accessed on 2023 Apr 04].
4. WHO: Diet and physical activity: A public health priority. Geneva [Accessed 05 May 2016]; Available from: http://www.who.int/dietphysicalactivity/background [Last accessed on 2023 Apr 04]
5. Anjana RM, Pradeepa R, Das AK, Deepa M, Bhansali A, Joshi SR, *et al*. Physical activity and inactivity patterns in India – Results from the ICMR-INDIAB study (Phase-1) [ICMR-INDIAB-5]. Int J Behav Nutr Phys Act. 2014;11:26. [Last accessed on 2023 Apr 04]
6. World Health Organization. Global Physical Activity Questionnaire (GPAQ) analysis guide. Available from: http://www.who.int/chp/steps/resources/GPAQ_Analysis_Guide.pdf. [Last accessed on 2023 Apr 04]
7. World Health Organization: Global strategy on diet, physical activity and health- what is moderate-intensity and vigorous-intensity physical activity? http://www.who.int/dietphysicalactivity/physical_activity_intensity/ [Last accessed on 2023 Apr 04]
8. Dumith SC, Hallal PC, Reis RS, Kohl HW, 3rd. Worldwide prevalence of physical inactivity and its association with human development index in 76 countries. Prev Med. 2011;53(1-2):24-28. [Last accessed on 2023 Apr 04]
9. King H, Aubert RE, Herman WH. Global burden of diabetes, 1995–2025: Prevalence, numerical estimates, and projections. Diabetes Care. 1998;21(9):1414-31. [Last accessed on 2023 Apr 04]
10. Mathews E, Pratt M, Jissa VT, Thankappan KR. Self reported physical activity and its correlates among adult women in the expanded part of Thiruvananthapuram city, India. Indian Journal of Public Health. 2015;59(2):136. [Last accessed on 2023 Apr 04]
11. Paavola M, Vartiainen E, Haukkala A. Smoking, alcohol use, and physical activity: A 13-year longitudinal study ranging from adolescence into adulthood. Journal of Adolescent Health. 2004;35(3):238-44. [Last accessed on 2023 Apr 04]
12. LaCroix AZ, Guralnik JM, Berkman LF, Wallace RB, Satterfield S. Maintaining mobility in late life. II. Smoking, alcohol consumption, physical activity, and body mass index. American Journal of Epidemiology. 1993;137(8):858-69. [Last accessed on 2023 Apr 04]
13. Ferrucci L, Izmirlian G, Leveille S, Phillips CL, Corti M-C, Brock DB, *et al*. Smoking, physical activity, and active life expectancy. American Journal of

Epidemiology. 1999;149(7):645-53. [Last accessed on 2023 Apr 04]

How to Cite This Article
Anubama K. Pattern of physical activity and associated sociodemographic factors among the adult population of Tumkur city. International Journal of Advance Research in Nursing. 2023;6(1):189-192