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A CROSS-SECTIONAL STUDY ON THE FREQUENCY AND DETERMINANTS OF PHYSICAL INACTIVITY AMONG ADULTS

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ABSTRACT

Background and Aim: Globally, Physical inactivity is a major health issue that increases the risk factors non-communicable diseases (NCD). Approximately one third of population are physically inactive. The present study aimed to determine the frequency and determinants of physical inactivity among adults.

Patients and Methods: A cross-sectional study was carried out on 326 adults (>18 years) in the Department of Community Medicine, Ayub Teaching Hospital, Abbottabad from June 2022 to March 2023. Global Physical Activity Questionnaire was used to assess the participant's knowledge regarding physical activities, sleep quality, weight loss, diabetes decrease risk, heart attack, helping digestion, muscular fitness, and promoting regular bowel movements. Socio-demographic details, physical activity levels, health profile, and phase of physical behavior changes were recorded.

Results: The overall mean age of the participants was 31.82±8.92 years. The prevalence of physical inactive adults was 51.5% (n=168). Out of 326 participants, there were 60.1% (n=196) were male and 39.9% (n=130) females. About 17.8% (n=58) adults were current tobacco users whereas 22.7% (n=74) were illiterate adults. Regarding participant's knowledge, approximately 74.3% (n=242) were aware that physical activity assist in weight loss. Physical activity helps in stronger bones 69.9% (n=228) and improve muscular fitness 71.2% (n=232). Awareness regarding improving sleep quality, reduces depressive symptoms, promotes regular movements, and reduces stress was found in 62.6% (n=204), 55.2% (n=180), 64.7% (n=211), and 58.3% (n=190) respectively.

Conclusion: The incidence of physical activity among adults was 51.5%. Age, gender, and education level are obvious predictors of physical inactivity that may be focused with aimed to reduce the physical inactivity among adults.

Keywords: Physical inactivity, Adults, Predictors

INTRODUCTION

Physical activity (PA) is any skeletal muscles generated body movement that needs expenditure of energy such as workouts and performing various domestic tasks [1]. Physical activities on regular basis has been proven to improve life's quality and physiological functioning. World Health Organization (WHO) recommended moderate physical activities for 2.5 hours per week based on the economical investment, advantageous and ease of participation [2]. Despite the acknowledged advantages and necessity of physical activity, 23% of males and 32% of females over the age of 18 are physically inactive globally [3], and there is a global trend towards indulging in sedentary behaviour. Pakistani are considered to be sedentary and physically inactive when compared to worldwide estimations. A multi-center research done found that sedentary participants were found >50% and < 10% of the population engaged in leisure physical activity [4]. A previous investigation found that even individuals who engage in leisure time PA do not match the worldwide recommended levels for exercise intensity [5].

Physical inactivity has been associated with an increased risk of non-communicable illnesses such as hypertension, diabetes, and heart disease, according to epidemiological study [6]. Regular physical exercise protects the body by increasing cardiorespiratory fitness and bone mineral density [7]. Some of the elements that might impact PA behaviour are past exercise behaviours, perceived self-efficacy, social support, self-confidence, access to facilities, physical surroundings, gender, and socioeconomic position [8]. The impediment's for regular physical activity includes limited time, discomfort, lack of motivation, fear of falling, and transportation [9, 10]. Despite the fact that there is increasing overweight and obesity among adults due to decreased levels of physical activity, no concrete strategy has been proposed or practically implemented [11]. Furthermore, there is paucity of data regarding physical activity among Pakistani adults. The present study aimed to determine the incidence and determinants of physical inactivity among adults.

METHODOLOGY

This cross-sectional was carried out on 326 adults (>18 years) in the Department of Community Medicine, Ayub Teaching Hospital, Abbottabad from June 2022 to March 2023. Global Physical Activity Questionnaire was used to assess the participant's knowledge regarding physical activities, sleep quality, weight loss, diabetes decrease risk, heart attack, helping digestion, muscular fitness, and promoting regular bowel movements. Socio-demographic details, physical activity levels, health profile, and phase of physical behavior changes were recorded. A sample size of 326 was determined based on a 50.5% prevalence of physical inactivity, 5% margin of error, and nonresponse rate 10%. GPAQ is a proven instrument for tracking physical activity across three domains: work, transportation, and leisure time. Respondents were interviewed if they had previously been diagnosed with any chronic conditions such as hypertension, diabetes, cardiovascular disease, asthma, or other chronic respiratory disorders. Questions on smoking addiction were gathered, as were variables that encouraged PA. The Epi Info version was used for statistical analysis. The determinants of physical inactivity were identified using logistic regression analysis.

RESULTS

The overall mean age of the participants was 31.82±8.92 years. The prevalence of physical inactive adults was 51.5% (n=168). Out of 326 participants, there were 60.1% (n=196) were male and 39.9% (n=130) females. About 17.8% (n=58) adults were current tobacco users whereas 22.7% (n=74) were illiterate adults. Based on Global Physical Activity Questionnaire Regarding participant's knowledge, approximately 74.3% (n=242) were aware that physical activity assist in weight loss. Physical activity helps in stronger bones 69.9% (n=228) and improve muscular fitness 71.2% (n=232). Awareness regarding improving sleep quality, reduces depressive symptoms, promotes regular movements, and reduces stress was found in 62.6% (n=204), 55.2% (n=180), 64.7%

(n=211), and 58.3% (n=190) respectively. Age groups are illustrated in Figure-1. Association of physical inactivity with different socio-demographic parameters are shown in Table-I. Participant's knowledge regarding different factors associated with physical inactivity are depicted in Figure-2. Logistic regression model was used for the predictors of physical inactivity as shown in Table-II.

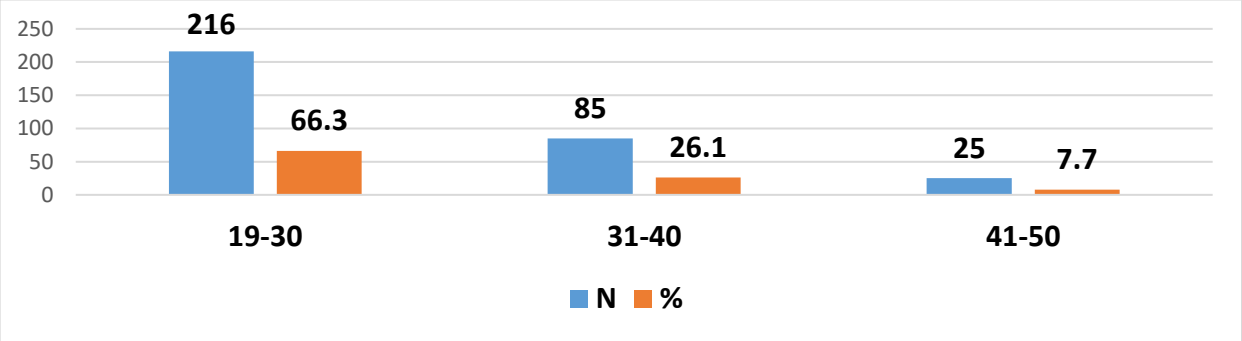

Figure-1 Age groups (n=326)

Table-I Association of physical inactivity with different socio-demographic parameters

Parameters	Physical inactive (PI) N=168 N (%)	Physical active (PA) N=158 N (%)	P-value
Age (years)	32.64±9.84	31.0±8.0	0.11
Age groups (yrs.)			0.12
19-30	106 (61.9)	110 (69.6)	
31-40	48 (28.6)	37 (23.4)	
41-50	14 (8.3)	11 (7.0)	
Gender			0.13
Male	112 (66.7)	84 (53.2)	
Female	56 (33.3)	74 (46.8)	
Education			0.05
Literate	42 (25)	32 (20.3)	
Illiterate	126 (75)	126 (79.7)	
Tobacco status			0.17
Current smokers	34 (20.2)	24 (15.2)	
No smokers	134 (79.8)	134 (84.8)	

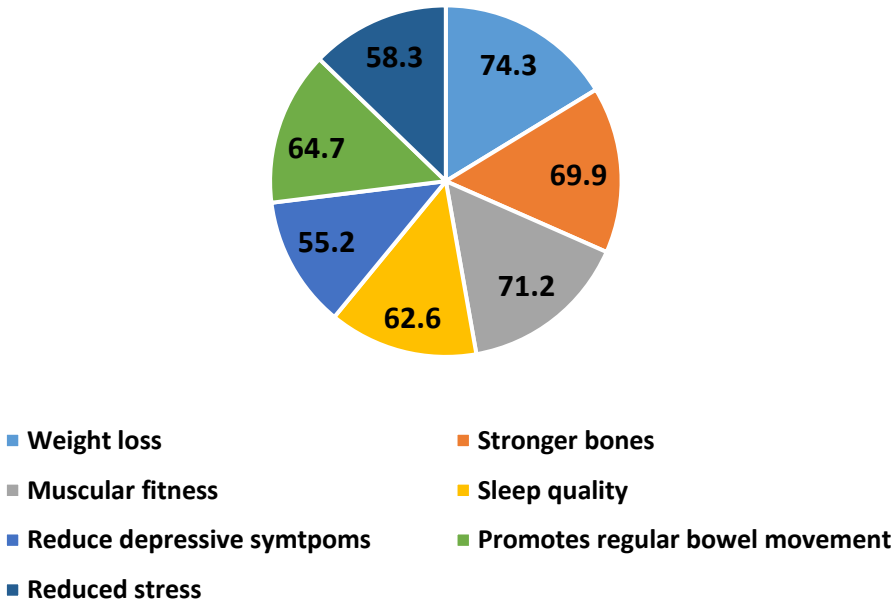

Figure-2 Participant's knowledge regarding different factors associated with physical inactivity based on Global Physical Activity Questionnaire.

Table-II Logistic regression model was used for the predictors of physical inactivity

Variables	Odd ratio (OR) [CI 95%]
Age groups (yrs.)	0.6 (0.5-1.0)
Gender	1.7 (1.1-3.0)
Education	1.6 (1.02-3.1)
Tobacco status	2.1 (1.6-3.9)

DISCUSSION

The current research looked at the frequency and determinants of physical inactivity in adults. According to our findings, 51.5% of research participants were physically inactive. Previous investigations have shown findings that are almost identical. According to WHO standards, the incidence of physical inactivity was 56.8% [12]. Previous studies conducted in Bangladesh and South America reported that the incidence of physical inactivity was 50.3% and 44.5% respectively [13, 14]. The current study discovered that men were less physically inactive than women. Similar findings have been obtained in previous investigations [15, 16]. In our investigation, we discovered that literate people were more physically inactive than illiterate people. Moniruzzaman et al [17] found a similar finding. Tobacco users had a greater risk of physical inactivity in our research. A similar finding has been found in a previous study [18].

Men, on average, engage in more dynamic and abstemiously active sports activities as compared to the women, which might be linked to social-cultural variables such as gender roles. Work dominancy of men and women's association with family responsibilities are various factors that promote the higher physical activities of men, specifically, motivation, and lack of social support, social isolation, and work domain are the causes for women lower motivation in physical activity [19-21]. In comparison to sociodemographic factors, education can mute the pattern of physical activity despite the fact that physical activity pattern of individual can be changed by education.

There is no surprise in finding the fact that physically inactive population are more prone to non-communicable chronic diseases. PA is promoted as a main preventative strategy for chronic illnesses and promotes overall wellbeing [22]. PA also slows the course of symptomatic disorders, preventing them from progressing to disability or death [23, 24].

Furthermore, marital status and physical inactivity shown no significant association in the present study. In contrast to this finding, Wang's study found that married men are less interested in physically activities whereas unmarried men are physically active [25]. In this study, we discovered that women spend less METs on leisure-time physical exercise than males. A similar finding was observed in Mahmoud's research, which found that women were less active than men regarding leisure-time physical activity [26].

Physical inactivity and rural location had marginal relationships, as did physical inactivity and central adiposity. Physical inactivity is associated with rural residency, which is unexpected given that prior research has shown that physical inactivity is greater among urban than rural inhabitants [27, 28].

CONCLUSION

The incidence of physical activity among adults was 51.5%. Age, gender, and education level are obvious predictors of physical inactivity that may be focused with aimed to reduce the physical inactivity among adults.

REFERENCES

1. Sharma D, Goel NK, Kaur R, Khosla N, Shekam M. Prevalence and predictors of physical inactivity among adults – A cross-sectional study. Indian J Community Med 2022;47:130-2.
2. Ibrahim AM, Singh DK, Mat S, Ludin AF, Shahar S. Incidence and predictors of physical inactivity among Malaysian community-dwelling older persons. Journal of Aging and Physical Activity. 2022 Jul 13;31(1):105-16.

3. Lee BY, Adam A, Zenkov E, Hertenstein D, Ferguson MC, Wang PI, Wong MS, Wedlock P, Nyathi S, Gittelsohn J, Falah-Fini S. Modeling the economic and health impact of increasing children's physical activity in the United States. Health Aff. 2017;36(5):902–8.
4. Ding D, Kolbe-Alexander T, Nguyen B, Katzmarzyk PT, Pratt M, Lawson KD. The economic burden of physical inactivity: a systematic review and critical appraisal. Br J Sports Med. 2017;51:1392–409.
5. O'Donovan G, Stensel D, Hamer M, Stamatakis E. The association between leisure-time physical activity, low HDL-cholesterol and mortality in a pooled analysis of nine population-based cohorts. Eur J Epidemiol. 2017;32(7):559–66.
6. Newtonraj A, Murugan N, Singh Z, Chauhan RC, Velavan A, Mani M: Factors associated with physical inactivity among adult urban population of Puducherry, India: a population based cross-sectional study. J Clin Diagn Res. 2017, 11:15-7. 10.7860/JCDR/2017/24028.9853.
7. Aleksovska K, Puggina A, Giraldi L, et al.: Biological determinants of physical activity across the life course: a "determinants of diet and physical activity" (DEDIPAC) umbrella systematic literature review. Sports Med Open. 2019, 5:10.1186/s40798-018-0173-9.
8. Mathews E, Lakshmi JK, Ravindran TK, Pratt M, Thankappan KR: Perceptions of barriers and facilitators in physical activity participation among women in Thiruvananthapuram City, India. Glob Health Promot. 2016, 23:27-36. 10.1177/1757975915573878.
9. Mendoza-Vasconez AS, Linke S, Muñoz M, et al.: Promoting physical activity among underserved populations. Curr Sports Med Rep. 2016, 15:290-7. 10.1249/JSR.0000000000000276.
10. Jiang L, Cheskin LJ, Frankenfeld CL, Rana ZH, de Jonge L. Loneliness is associated with unhealthful dietary behaviors and physical inactivity among US college students. Journal of American College Health. 2022 Oct 29:1-6.
11. AlTamimi JZ, Alagal RI, AlKehayez NM, Alshwaiyat NM, Al-Jamal HA, AlFaris NA. Physical activity levels of a multi-ethnic population of young men living in Saudi Arabia and factors associated with physical inactivity. Frontiers in Public Health. 2022 Feb 2;9:734968.
12. Silveira EA, Mendonça CR, Delpino FM, Souza GV, de Souza Rosa LP, de Oliveira C, Noll M. Sedentary behavior, physical inactivity, abdominal obesity and obesity in adults and older adults: A systematic review and meta-analysis. Clinical nutrition ESPEN. 2022 Aug 1;50:63-73.
13. An HY, Chen W, Wang CW, Yang HF, Huang WT, Fan SY. The relationships between physical activity and life satisfaction and happiness among young, middle-aged, and older adults. Int J Environ Res Public Health. (2020) 17:4817. doi: 10.3390/ijerph17134817.
14. Guthold R, Stevens GA, Riley LM, Bull FC. Worldwide trends in insufficient physical activity from 2001 to 2016: a pooled analysis of 358 population-based surveys with 1· 9 million participants. Lancet Glob Health. (2018) 6:e1077–86. doi: 10.1016/S2214-109X(18)30357-7.
15. Al-Zalabani AH, Al-Hamdan NA, Saeed AA. The prevalence of physical activity and its socioeconomic correlates in Kingdom of Saudi Arabia: A cross-sectional population-based national survey. J Taibah Univ Medical Sci. (2015) 10:208–15. doi: 10.1016/j.jtumed.2014.11.001.
16. Newtonraj A, Murugan N, Singh Z, Chauhan RC, Velavan A, Mani M. Factors associated with physical inactivity among adult urban population of Puducherry, India: A population based cross-sectional study. J Clin Diagn Res 2017;11:LC15-7.
17. Moniruzzaman M, Ahmed MS, Zaman MM. Physical activity levels and associated socio-demographic factors in Bangladeshi adults: A cross-sectional study. BMC Public Health 2017;17:59.
18. Aslesh OP, Mayamol P, Suma RK, Usha K, Sheeba G, Jayasree AK. Level of physical activity in population aged 16 to 65 years in rural Kerala, India. Asia Pac J Public Health 2016;28:53S-61S.

19. Tripathy JP, Thakur JS, Jeet G, Chawla S, Jain S, Prasad R. Urban rural differences in diet, physical activity and obesity in India: Are we witnessing the great Indian equalisation? Results from a cross-sectional STEPS survey. BMC Public Health 2016;16:816.
20. Devamani CS, Oommen AM, Mini GK, Abraham VJ, George K. Levels of physical inactivity in rural and urban Tamil Nadu, India: A cross-sectional study. J Clin Prev Cardiol 2019;8:13-7.
21. Pedisic Z, Shrestha N, Loprinzi PD, Mehata S, Mishra SR. Prevalence, patterns, and correlates of physical activity in Nepal: Findings from a nationally representative study using the Global Physical Activity Questionnaire (GPAQ). BMC Public Health 2019;19:864.
22. Corsi DJ, Subramanian SV: Socioeconomic gradients and distribution of diabetes, hypertension, and obesity in India. JAMA Netw Open. 2019, 2:10.1001/jamanetworkopen.2019.0411.
23. Mendoza-Vasconez AS, Linke S, Muñoz M, et al.: Promoting physical activity among underserved populations. Curr Sports Med Rep. 2016, 15:290-7. 10.1249/JSR.0000000000000276.
24. Santos AC, Willumsen J, Meheus F, Ilbawi A, Bull FC. The cost of inaction on physical inactivity to public health-care systems: a population-attributable fraction analysis. The Lancet Global Health. 2023 Jan 1;11(1):e32-9.
25. Welford P, Östh J, Hoy S, L Rossell S, Pascoe M, Diwan V, Hallgren M. Effects of Yoga and Aerobic Exercise on Verbal Fluency in Physically Inactive Older Adults: Randomized Controlled Trial (FitForAge). Clinical Interventions in Aging. 2023 Dec 31:533-45.
26. Mahmoud WSED, Ahmed AS, Elnaggar RK. Physical activity in overweight and obese adults in Al-kharj, Saudi Arabia. Eur J Sci Res. (2016) 137:236–45.
27. Katzmarzyk PT Friedenreich C Shiroma EJ Lee I-M Physical inactivity and non-communicable disease burden in low-income, middle-income and high-income countries. Br J Sports Med. 2021; 56: 101-106.
28. Hafner M Yerushalmi E Stepanek M et al. Estimating the global economic benefits of physically active populations over 30 years (2020–2050). Br J Sports Med. 2020; 54: 1482-1487.