Prevalence and predictors of physical inactivity levels among Kenyan adults (18–69 years): an analysis of STEPS survey 2015

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Abstract

Background: Physical inactivity accounts for more than 3 million deaths worldwide, and is implicated in causing 6% of coronary heart diseases, 7% of diabetes, and 10% of colon or breast cancer. Globally, research has shown that modifying four commonly shared risky behaviours, including poor nutrition, tobacco use, harmful use of alcohol, and physical inactivity, can reduce occurrence of non-communicable diseases (NCDs). Risk factor surveillance through population-based periodic surveys, has been identified as an effective strategy to inform public health interventions in NCD control. The stepwise approach to surveillance (STEPS) survey is one such initiative, and Kenya carried out its first survey in 2015. This study sought to describe the physical inactivity risk factors from the findings of the Kenya STEPS survey.

Methods: This study employed countrywide representative survey administered between April and June 2015. A three stage cluster sampling design was used to select clusters, households and eligible individuals. All adults between 18 and 69 years in selected households were eligible. Data on demographic, behavioural, and biochemical characteristics were collected. Prevalence of physical inactivity was computed. Logistic regression used to explore factors associated with physical inactivity.

Results: A total of 4500 individuals consented to participate from eligible 6000 households. The mean age was 40.5 (39.9–41.1) years, with 51.3% of the respondents being female. Overall 346 (7.7%) of respondents were classified as physically inactive. Physical inactivity was associated with female gender, middle age (30–49 years), and increasing level of education, increasing wealth index and low levels of High Density Lipoproteins (HDL).

Conclusion: A modest prevalence of physical inactivity slightly higher than in neighbouring countries was found in this study. Gender, age, education level and wealth index are evident areas that predict physical inactivity which can be focused on to develop programs that would work towards reducing physical inactivity among adults in Kenya.

Keywords: Physical inactivity, Non-communicable diseases, Kenya

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consumption), and physical and biochemical measurements (waist circumference, blood pressure and cholesterol). Men with waist circumference of > 104 cm or women with waist circumference of 88 cm were classified as centrally obese, Waist hip ratio of 0.85 among women and 0.90 men was considered as obesity risk. Systolic blood pressure > 140 and diastolic pressure > 90 were categorized as hypertension. Low HDL was defined as < 1.03 mmol/L among men and < 1.29 mmol/L among women.

Logistic regression analyses were used to compute adjusted odds ratios for each exposure variable while controlling for all the other variables (confounders) in the model. P-values of less than 0.05 were considered significant. The analysis was done using STATA software, version 14.

Characteristics of study participants

In total 6000 adults were invited to participate in this study, 4500 (75%) completed the survey and 4484 (74.4%) had no missing data. Table 1 presents the characteristics of the sample. The study participants were adults aged 18 to 69 years with a mean age of 40.5 (39.9–41.1) years, with slightly fewer males than females (48.7% versus 51.3%). Most respondents (> 85%) had some education (mainly secondary), were rural residents (62%), employed (80%) and married (65%).

Prevalence of physical inactivity

A total of 346 (7.7%) of the respondents were classified as physically inactive. Physical inactivity was more prevalent among those in middle age (30–49 years), among those with no formal education, in the urban areas, among students, non-paid/– volunteers, unemployed, and single adults (Table 1).

Factors associated with physical inactivity

Results from the multivariable analysis indicated women were 1.72 times more likely to be physically inactive than men. Physical inactivity was twofold higher among those aged 30–39 years, and 40–49 years compared to those aged 50–69 years, and was 2–5 odds higher among those with education compared to those with no formal education. Individuals self-reporting the middle wealth quintile were three times more likely to be physically inactive than those in the poorest and second wealth quintile. Individuals with low level of HDL had double odds of being physically inactive. Being in the richest wealth quintile had lower odds (0.39) of physical inactivity compared to those within the lowest level of wealth quintile. There was borderline association of physical inactivity with rural residence (OR = 1.61 95% CI [0.96, 2.69], central obesity (OR = 1.53 95% CI [0.99, 2.35]) and lower odds with hypertension (OR = 0.67, 95% CI (0.44, 1.02) - Table 2.

Discussion

Using data from a nationally representative survey in Kenya, the prevalence of physical inactivity was found to be 7.7%, similar to that reported in other sub-Saharan Africa (SSA) countries such as Burkina Faso (7.8%), Malawi (8.4%) and Ghana (8.8%) [26]. This was significantly higher than in the neighbouring country, Uganda with 4.3% prevalence of physical inactivity reported in the recent STEPS survey [27]. South Africa (44.7%), Mauritania (52.6%) and Swaziland (49.1%) reported higher prevalence of physical inactivity [26]. These results support the notion that prevalence of physical inactivity is a function of country's income and is usually high in developed countries and low in less developed and underdeveloped countries [28

Mauritania (50.7%) and Swaziland (15.3%) [29]. This could be attributed to the differences in the methodology used between the STEPs survey and the studies. The estimated global adult physical inactivity prevalence in 2008 was 31% [29]. Although the prevalence of physical inactivity is not alarming in Kenya yet, it is likely to increase without timely policy put in place. Factors associated with physical inactivity were identified.

In the Kenyan population the factors significantly associated with physical inactivity in the analyses undertaken include: female gender, middle age 30–49 years, formal education, middle wealth and low levels of HDL.

Similar to a number of other studies [30–34], women were more likely to be physically inactive than men in this study. To a large extent, men tend to engage more in vigorous and moderately intense sports activities than women (83.7% versus 16.3%) and this could be attributed to social-cultural factors including gender roles. More specifically, these factors include the dominance of work and family responsibilities on women, social norms that permit higher levels of PA in men especially in work domains, lack of social support for women to be active, social isola-

Consent for publication

39. Umstattd MR, Wilcox S, Saunders R, Watkins K, Dowda M. Self-regulation and physical activity: the relationship in older adults. Am J Health Behav. 2008;32(2):115–24.

40. Shaw BA, Spokane LS. Examining the association between education level and physical activity changes during early old age. J. Aging Health. 2008; 20(7):767–87.

41. Muthuri SK, Wachira LJ, Onywera VO, Tremblay MS. Correlates of ob[