PUBLIC HEALTH

ORIGINAL RESEARCH

Planning to win: Health and lifestyles associated with physical activity amongst 15,423 adults

R.A. Harrison[a,b,*], P. McElduff[b], R. Edwards[b]

[a]Directorate of Public Health, Bolton Primary Care Trust, St Peters House, Silverwell Street, Bolton, BL1 1PP UK
[b]Evidence for Population Health Unit, Division of Epidemiology and Health Sciences, University of Manchester, Manchester, UK

Summary *Study objective*: To assess levels of physical activity in the general population and amongst the 'healthy', and to identify factors associated with this important health behaviour.
Design: Population-based cross-sectional study.
Setting: North-west England.
Participants: Adults (aged at least 18 years) registered with a general practitioner with a residential address within two local administrative districts (local authorities).
Main results: Less than one-third of adults performed adequate amounts of physical activity for health protection, and this differed little when analyses were restricted to 'healthy' people. Lower levels of physical activity were observed amongst women, older people, ethnic groups, those with obesity and in each increased quintile of social deprivation. Current smokers, but not previous smokers, were less likely to be physically active, as were those not eating at least five portions of fruit and vegetables per day. Lack of physical activity was associated with poor general health and a history of, or current, chronic disease.
Conclusions: Concerted efforts are required by the Government, society and individuals to overturn our predominantly physically inactive adult population. Interventions may be needed which specifically target certain groups, especially the most socially deprived, and that consider individuals and societal barriers to becoming physically active. Evidence of the effectiveness of individual and population-based interventions remains scant and this needs to be addressed urgently.
© 2005 The Royal Institute of Public Health. Published by Elsevier Ltd. All rights reserved.

Introduction

Like many developed countries,[1,2] people in England are increasingly sedentary, spending less time

* Corresponding author. Tel.: +44 1204 907728.
  E-mail address: roger.harrison@manchester.ac.uk (R.A. Harrison).

engaging in physical activity as part of their daily lives. Over three-quarters of adults fail to meet physical activity recommendations, with a staggering 38% leading predominantly sedentary lifestyles.[3] Substantial evidence links sedentary behaviour to detrimental effects on health including cardiovascular disease, type 2 diabetes, cancer, bone health and mental health.[4] This is influencing the increasing prevalence of obesity.[5] Reducing sedentary behaviour is a priority of the World Health Organization. In England, this is supported in the White Paper 'Choosing Health'.[6] This follows ambitious targets in the Government's 'Game Plan' aiming for 70% of adults to be undertaking 30 min of physical activity on at least 5 days per week by 2020, i.e. a relative increase of around 120% over a 20-year period.[7]

Evidence to support policy makers to increase physical activity is scant.[8,9] So too is information on individual factors associated with sedentary behaviour. For example, the National Health Survey for England[3] only reports on physical activity levels by sex, age and social class. Thus many factors are overlooked that have a potential to influence physical activity, and the survey provides little information to inform policy development. The aim of the current study was, to assess levels of physical activity in the general population and in a subgroup defined as 'healthy'. Associations with demographic, health and other lifestyle factors were considered to provide detailed information about this important health behaviour. The information is being used to inform local policy with respect to reducing sedentary behaviour, and provides a baseline to measure change in future years.

Methods

The survey design has been described previously.[10,11] It utilized a 50-item self-completion postal questionnaire, sent to 5% of adults residing in two administrative boroughs in the north-west of England. The sample was selected systematically from the boroughs' primary care registers, checking for recent death notifications before sending the questionnaire. The administrative methods for the survey were evidence based to encourage high response rates.[12,13] The questionnaire was posted with a covering letter explaining the purpose of the survey, and a pre-paid return addressed envelope. A reminder postcard was sent to non-responders after 7 days. A second copy of the questionnaire and a reminder letter were sent to persistent non-responders 14 days after the initial mail-out. An introduction to the survey was given in Urdu and Gujarati, the two prominent second languages in this area. A full translation was not possible but information was given about a free translation service.

The questionnaire included items relating to general and specific health, use of health services, lifestyle behaviours strongly related to health, and participants' views about their neighbourhood. Individual question items were developed from national surveys (including the National Health Survey for England) and, where possible, incorporated previously validated tools (e.g. General Health Questionnaire 12).[14] Physical activity was assessed using the Godin and Shephard instrument.[15] This instrument has been validated in epidemiological studies and can distinguish between different levels of habitual physical activity. Participants were asked to identify how many times in the past week they had engaged in light, moderate or vigorous activity for at least 15 min per session. The Godin and Shephard instrument defines moderate activity as including brisk walking, table tennis, easy cycling, golf, dancing, cleaning windows and mopping floors. Vigorous activity includes running, football, cardiovascular gym workouts and aerobics. The survey was approved for research governance and given a favourable opinion by the local research ethics committees.

Analysis

Being physically active was defined as participating in at least five sessions per week of moderate or vigorous activity, with each session lasting for at least 15 min, as defined by the physical activity scale. Univariate associations with individual health and lifestyle characteristics were assessed using cross-tabulations. Relative differences (prevalence rate ratios) in physical activity between groups, defined by health and lifestyle characteristics, were calculated after adjusting for sex, age, ethnicity and socio-economic status (Townsend deprivation quintiles at enumeration district level) using a modified Poisson regression approach.[16] This involves fitting generalized linear models to the data with a log link and Poisson error term. The outcome variable in these models was being physically active, and the predictor variables were health and lifestyle characteristics. The robust variance estimator was used to adjust for the misspecification of the error term.

Two main analyses were carried out. The first included all participants completing the questionnaire. The second was restricted to those participants who did not report any adverse health