



Original research

Associations of awareness of physical activity recommendations for health and self-reported physical activity behaviours among adult South Australians



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ABSTRACT

Objectives: Despite widespread media campaigns to encourage physical activity (PA), participation is poor among Australian adults. This study aimed to explore the prevalence of and relationships between awareness of PA recommendations and PA participation.

Design: Cross-sectional study of $n = 2402$ South Australian adults (aged ≥ 18 years) via a computer-assisted telephone interview.

Methods: PA recommendation awareness was determined by asking for the number of minutes of PA recommended for health benefits and whether PA is needed to make you 'puff and pant' to confer a health benefit. Respondents were defined as sufficiently active if they reported ≥ 150 min/week of PA as measured by the Active Australia Survey.

Results: A total of 43.0% correctly identified that 30 min of PA is recommended per day (Recommendation 1) and 43.3% correctly disagreed/strongly disagreed that PA is needed to make you 'puff and pant' (Recommendation 2). Overall, 60.6% of respondents were sufficiently active. Of those who correctly identified Recommendation 1, 53.2% reported participating in sufficient PA, significantly fewer than those who did not know Recommendation 1 (69.6%) ($\chi^2 = 64.74$ (4), $p < 0.001$). There was no difference in levels of sufficient PA between those who correctly identified Recommendation 2 and those who did not.

Conclusions: There was relatively low awareness of PA recommendations among South Australian adults. More research is needed in how recommendations are promoted and how they impact PA behaviours. PA recommendations are based on the best available epidemiological evidence but largely fail to guide the choices people currently make about PA.

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1. Introduction

Around the world, participation in physical activity (PA) is encouraged as a means of maintaining good health. The World Health Organization recommends that '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 physical activity throughout the week or an equivalent combination of moderate- and vigorous intensity activity'.¹ Many countries have adopted or adapted these

recommendations to help inform the public on appropriate PA participation to achieve health benefits.

In Australia, prior to 2014, the recommendation for PA participation in adults was to undertake 30 min of moderate or higher intensity physical activity on most days of the week² (translating to 150 min of activity per week). The simplified message from this recommendation was to achieve 30 min of PA every day.

Both at the state level and nationally a range of social marketing techniques have been integrated into public health campaigns over the last 15–20 years³ which have included mass media avenues, including print, radio and television. In all campaigns, the messages of finding 30 min and the message of moderate activity on most days, preferably all days of the week, have been consistent.

Whilst mass media campaigns have high consumer recognition,⁴ PA participation remains low. In 2012, 70.3% of South Australian adults could recall the *Be Active* statewide PA

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campaign when prompted (unpublished data from SA Health); however, in the same year only 50.7% were considered to be sufficiently active.⁵

Although there is a clear dose–response effect for the duration and intensity of PA on morbidity and mortality,⁶ PA does not need to be vigorous in order to convey health benefits.⁷ Whilst current recommendations and campaigns encourage participation in walking, moderate and vigorous activity, there may be a perception in the community and amongst some fitness professionals that health benefits from PA require a vigorous intensity due to the way exercise is portrayed in the media.^{8,9}

This study aimed to determine awareness among South Australian adults of the recommendation of 30 min of PA per day (Recommendation 1) and to investigate the proportion who could identify that PA does not need to be of a vigorous intensity (i.e., make you ‘puff and pant’) to gain health benefits (Recommendation 2). The study also aimed to determine whether knowledge of either of these recommendations, or both, were associated with the achievement of PA recommendations. We hypothesised that those who had a higher awareness of the recommendations would be more likely to meet PA recommendations.

2. Methods

Data for this study were collected as part of the 2013 South Australian Physical Activity Survey (SAPAS). The SAPAS has been conducted every three years since 1998 and is a Computer-Assisted Telephone Interview survey managed by Population Research and Outcome Studies at the University of Adelaide, for the South Australian Department for Health and Ageing.

The survey content and methodology were approved by the South Australian Department for Health and Ageing Human Research Ethics Committee (Protocol number: HREC/14/SAH/62) and participants gave informed consent before participating in the survey. Trained interviewers conducted the SAPAS between September and November 2013. The questionnaire was pilot tested ($n = 46$) prior to the commencement of the survey.

All households in South Australia with a telephone number listed were eligible for selection in the sample. Telephone numbers were randomly selected from the Integrated Public Number Database (IPND). Within each household, the person who had the most recent birthday, and was 18 years or older, was selected for interview. There was no replacement for non-contactable persons.

At the time the 2013 SAPAS was in the field, Australia was revising its PA recommendations and new recommendations have since been released. However, the recommendation of 30 min per day on most days of the week (i.e., at least 150 min per week) of moderate and vigorous activity for health benefits remains largely unchanged and this was used to define sufficient activity in this study.

In order to assess awareness of PA recommendations respondents were asked to report ‘How many minutes or hours per day do you think adults should be spending on physical activity to gain health benefits?’ Data were categorized as less than 30 min, 30 min or more than 30 min. A response was deemed to be correct if the respondents answered 30 min (Recommendation 1).

Participants were also asked to identify whether they agreed or disagreed with the statement ‘For physical activity to be good for health it must make you puff and pant’ using a question that has been previously asked by Ferney et al.¹⁰ As the Active Australia Survey describes vigorous activity as an ‘activity which made you breathe harder or puff and pant’¹¹ this question asked whether respondents believed that PA needed to be vigorous in order to confer a health benefit. Responses were categorized as strongly agree/agree, neither agree or disagree, or, disagree/strongly disagree. Those who disagreed/strongly disagreed with this statement

were considered to be correct (Recommendation 2). In addition, those who responded correctly to both questions were considered to be ‘guideline aware’.

PA was self-reported using six items from the Active Australia Survey. The validity of the Active Australia Survey was established in a sample of older (65+ years) Australians, comparing pedometer steps with self-reported walking, moderate-to-vigorous physical activity (MVPA) and total PA (sum of walking and MVPA). Fair to moderate correlations with daily steps were found for self-reported walking ($\rho = 0.42$), MVPA ($\rho = 0.31$) and total PA ($\rho = 0.42$). These observed correlations among older Australians are similar in magnitude to validity coefficients reported for other widely used PA self-reports in other age groups.¹² The test-retest reliability of the Active Australia Survey has also been reported as acceptable for: total PA in minutes/week ($\rho = 0.64$) in middle age women,¹³ and classification as active, insufficiently active or sedentary (66.1%) in a representative sample of adults.¹⁴

These questions asked respondents to report the number of times and total time spent engaged in walking, moderate and vigorous physical activity. Responses were summed in accordance with the survey methodology¹¹ to establish whether sufficient PA was being performed in accordance with the national PA recommendations.¹⁵

Demographic variables, including income, education, age, sex and area of residence (Rural South Australia or Metropolitan Adelaide) were also collected.

Data were analysed using IBM SPSS for Windows version 22.0 (IBM, Armonk, NY, USA).

In order to be representative of the South Australian population, data were weighted by age, sex, area (metro/rural) and probability of selection in the household using the 2011 Australian Bureau of Statistics census data and the number of listings in the White Pages.

All variables were categorical and were described using frequency and proportions. Data were stratified by sex and compared using chi square tests. Chi square tests were also used to analyse guideline awareness (Recommendation 1, Recommendation 2, or both) by PA participation in the whole sample and separately by sex. Differences were considered significant at $p \leq 0.05$.

3. Results

The overall participation rate in the SAPAS was 62.3%. A sample of 4910 was drawn; 388 were out of scope (not eligible, disconnected phone numbers), 1117 refused to participate, 667 dwellings could not be contacted, 118 did not speak English and a further 218 were unavailable or incapacitated resulting in a total sample size of $n = 2402$. Of all respondents, 48.4% were men, 28.8% were aged over 60 years, 26.1% had a degree qualification or higher, 78.4% were born in Australia and 72.4% lived in metropolitan Adelaide (Table 1).

Table 2 describes the proportion of respondents who could correctly identify the PA recommendations. A total of 43.0% of respondents correctly identified Recommendation 1, with a larger proportion of women (49.0%) compared to men (36.5%) responding correctly. There was a larger proportion of men (59.6%) compared to women (47.0%) who incorrectly reported that Recommendation 1 was more than 30 min ($\chi^2 = 37.74$ (2), $p < 0.001$). When asked about Recommendation 2, 43.3% of respondents correctly disagreed/strongly disagreed and 50% incorrectly agreed/strongly agreed. More women (47.1%) than men (39.3%) correctly answered this question ($\chi^2 = 14.98$ (2), $p = 0.001$).

When these two questions were considered together, 19.1% of respondents were ‘guideline aware’ such that they correctly identified Recommendation 1 and Recommendation 2. A larger

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