



10,000 Steps Working Paper Series

Paper 14: Awareness of the 10,000 Steps Program across Queensland, 2011

Stephanie Hall
Project Officer

Kelly Corry
Research Officer

Cindy Hooker
Senior Project Officer

Kylie Connolly
Project Officer

Dr. Mitch Duncan
Project Leader

Institute for Health and Social Science Research
CQUniversity

For information on physical activity and 10,000 Steps programs contact:

10,000 Steps Project Office
Building 18
CQUniversity
Rockhampton QLD 4702

Phone: +61 7 4930 6751
Fax: +61 7 4930 6401
Email: 10000steps@cqu.edu.au
Visit our website: www.10000steps.org.au

Suggested citation: Hall, S., Corry, K., Hooker, C., Connolly, K., & Duncan, M. (2011). *10,000 Steps Working Paper Series, Paper 14: Awareness of the 10,000 Steps Program across Queensland, 2011*. Rockhampton: Institute for Health and Social Science Research, CQUniversity.

© 10,000 Steps December, 2011

ISSN 1835-3789

This work is copyright. This work may be produced in whole or in part for research or training purposes subject to the inclusion of an acknowledgement of the source and provided no commercial usage or sale is to be made. Reproduction for purposes other than those indicated above requires prior written permission of 10,000 Steps, Building 18, CQUniversity, Rockhampton, Queensland, 4702, Australia.

Acknowledgements

Queensland Health provided funding to Central Queensland University for the development of the 10,000 Steps project.

Table of Contents

EXECUTIVE SUMMARY	1
INTRODUCTION	2
Background	2
Purpose of Study.....	2
Survey Method	2
Data Quality	3
Response Rate.....	3
Estimated Sampling Error.....	3
Data Treatment	3
Leisure Time Physical Activity Levels	3
Statistical Analyses.....	4
RESULTS	4
The Sample.....	4
Awareness of the 10,000 Steps Program 2010	4
Gender.....	4
Age Group	5
Location	6
Years of Education	6
Household Income.....	7
Occupation	8
BMI Category.....	8
LTPA Levels	9
Overall Awareness of the 10,000 Steps Program 2005-2010	9
CONCLUSIONS AND RECOMMENDATIONS	10
Future Recommendations.....	12
APPENDIX: TABLES.....	13
Table 1. Demographic characteristics of the total sample of participants, 2010. 13	
Table 2. Crude and adjusted odds ratios for awareness by demographic variables, 2010.	14
Table 3. Awareness of the 10,000 Steps program 2005-2010.....	15
Table 4. Variables associated with awareness of the 10,000 Steps program, 2005-2010.	16
REFERENCES	17

EXECUTIVE SUMMARY

This report details Queensland adults' awareness levels of the 10,000 Steps program in 2011. The report also examines associations between demographic variables and the level of awareness, and trends in awareness of the 10,000 Steps program in the period 2005 to 2011.

A Computer-Assisted-Telephone-Interview (CATI) survey was conducted by the Population Research Laboratory, CQUniversity in July and August 2010. The survey was a random selection of 1276 adults (aged 18 years and over) living in Queensland, Australia that were able to be contacted by direct dialled landline telephone.

- In 2011, 60.4% of the Queensland adult population were aware of the 10,000 Steps program.
 - Awareness was higher in women (67%) compared to men (53%).
 - Fifty-two percent of 18-34 year olds, 66% of 35-44 year olds, 68% of 45-54 year olds and 59% of individuals aged 55 years and over were aware of the program.
 - Fifty-five percent of residents from Brisbane and Moreton statistical subdivisions were aware of the program compared to 71% of residents from the rest of Queensland.

- In 2011, awareness was found to be significantly associated with several socio-demographic characteristics.
 - **Women** were significantly more likely to be aware of the 10,000 Steps program than men.
 - **Residents from the rest of Queensland** were significantly more likely to be aware of the 10,000 Steps program than residents from the Brisbane and Moreton district.
 - Individuals aged **35 years or older** were significantly more likely to be aware of the 10,000 Steps program than individuals aged 18-34 years.
 - **Blue collar workers** were significantly less likely to be aware of 10,000 Steps than Professional workers.
 - Individuals who were **overweight or obese** were significantly more likely to be aware of the 10,000 Steps program than individuals of a healthy weight.
 - Awareness was not associated with years of education or household income.

- Analysis of the pooled data from the **2005-2011** QSS revealed that awareness has significantly increased each year compared to 2005 levels. Awareness was also significantly associated with several socio-demographic characteristics.
 - **Women** were significantly more likely to be aware of the 10,000 Steps program than men.
 - **Residents from the rest of Queensland** were significantly more likely to be aware of the 10,000 Steps program than residents from the Brisbane and Moreton district.
 - Individuals aged **35 years or older** were significantly more likely to be aware of the 10,000 Steps program than individuals aged 18-34 years.
 - Individuals with **15 years of education or more** were significantly more likely to be aware of the 10,000 Steps program than those with 10 years of education or less.
 - **Blue collar workers** were significantly less likely to be aware of the 10,000 Steps program than white collar or professional workers.
 - Individuals who were **overweight or obese** were significantly more like to be aware of 10,000 Steps than those who were of a healthy weight.

INTRODUCTION

Background

10,000 Steps Rockhampton was Australia's first 'whole of community' health promotion physical activity project. Funded by Queensland Health, the Rockhampton region was chosen for a two year trial of the project in 2001. During this period, the 10,000 Steps Rockhampton Project was an exemplary model of an effective multi-strategy, multi-sector physical activity project. [1] The project was successful in motivating the local community, workplaces and individuals to increase their physical activity levels. As a result of the success in Rockhampton, Queensland Health provided funding for 10,000 Steps to be developed as a sustainable state-wide and beyond initiative.

10,000 Steps now disseminates physical activity information, materials, resources and support via the interactive 10,000 Steps website (www.10000steps.org.au). Since 2004, organisations and community groups have adopted and implemented the 10,000 Steps resources across Queensland and nation-wide to promote physical activity and raise awareness of the associated health benefits. Individuals are also involved in the program by using the interactive online Step Log to record and monitor their physical activity levels. As of November 2011, the 10,000 Steps program has over 178,600 individual members and 6,500 Providers (organisations and community groups) registered with the 10,000 Steps website.

Awareness levels of the 10,000 Steps program across Queensland have been monitored annually from 2005 to examine the effectiveness and the dissemination of the 10,000 Steps program. This data has examined the overall awareness of the program in a representative sample of the Queensland population and also in selected demographic sub-samples. Previous awareness statistics have shown that awareness has generally increased each year from 2005 to 2009. However a decrease in awareness was observed in 2010. [2-7] It has also been found that certain demographic sub-samples are more likely to be aware of 10,000 Steps than others. [2-7] For example, it has been consistently shown that women are more aware of the program than men and that the residents from the rest of Queensland are more aware than residents from Brisbane and Moreton Districts. [2-7] The current report details the follow-up study of 10,000 Steps awareness conducted in 2011.

Purpose of Study

The purpose of this study was to examine the awareness of the 10,000 Steps program across Queensland in 2011. In addition, the study examined if demographic variables (i.e. gender, age, location, years of education, annual household income, occupation, BMI category and LTPA levels) were associated with program awareness. Finally, this study examined trends in awareness of the 10,000 Steps program in Queensland using combined data from the year 2005 to 2011.

Survey Method

A section of the 2011 Queensland Social Survey (QSS) was sponsored by the 10,000 Steps project to investigate awareness of the program across Queensland. Conducted by the Population Research Laboratory (PRL) within the Institute for Health and Social Science Research (IHSSR) at CQUniversity, the 2011 QSS is the seventh in a series of annual cost-shared, omnibus surveys aimed at obtaining public opinion on a range of topics held by a representative sample of Queensland residents. The QSS is comprised of core questions (e.g. publicity and social capital), demographic questions and a series of sponsored questions. This survey allows researchers and community organisations to access a credible, reliable and relatively low-cost data-collection vehicle.

The QSS was administered through the Computer-Assisted-Telephone-Interview (CATI) system housed in the PRL, from July 19th 2011 until August 22nd 2011. The target population was all individuals who were 18 years or older, lived in a dwelling unit in Queensland and could be contacted by a direct-dialled land-based telephone service. This population was divided into two sub-samples, 1: South-East Queensland (Brisbane and Moreton statistical sub-divisions) and 2: the rest of Queensland. A random sample approach was undertaken to ensure that each member of the target population had an equal chance of selection. The survey received ethical clearance from the Human Research Ethics Committee at CQUniversity Australia.

Data Quality

Response Rate

The response rate calculation follows the recommended standard definitions of response rates based on the American Association for Public Opinion Research, Standard Definitions. [6] The response rate is a calculated percentage representing the number of people participating in the survey either with a completed or partially completed interview divided by the people selected in the sample.

RR6 is the maximum response rate. The calculations for RR6 are shown below.

$$RR6 = \frac{\text{Complete Interviews} + \text{Partial Interviews}}{(\text{Complete} + \text{Partial}) + (\text{Refusal} + \text{Non Contact} + \text{Other})}$$
$$RR6 = \frac{1265 + 12}{(1265 + 12) + (2309 + 276 + 147)}$$

The RR6 Response Rate for the 2011 QSS was 31.9%.

Estimated Sampling Error

The sampling error is a measure of the validity of the descriptive statistics that are observed in a sample. The estimated sampling error, at the 95% confidence level, for the Rest of State area sample of 428 households and a 50/50 binomial percentage distribution is plus or minus 4.7 percentage points. The sampling error for Brisbane and Moreton statistical sub-divisions at the same level of confidence is plus or minus 3.4 percentage points. Survey estimates for the total sample of 1,265 are accurate within plus or minus 2.7 percentage points, 19 times out of 20. [7]

Data Treatment

10,000 Steps awareness in 2011 was analysed by geographical location (Brisbane and Moreton, Rest of Queensland), gender, age, years of education, household income, occupation, body mass index (BMI) and leisure time physical activity (LTPA) levels.

Leisure Time Physical Activity Levels

Leisure time physical activity data was collected using the Active Australia Survey instrument. [8] Following the Active Australia guidelines levels of physical activity were categorized as follows:

- 1) No activity (Reported no walking, moderate- or vigorous-intensity activity in the week prior to the survey);
- 2) Insufficient Activity (Reported less than 150 minutes of physical activity or reported more than 150 minutes of activity but in less than five sessions in the week prior);
- 3) Sufficient Activity (Reported a minimum of 150 minutes of activity conducted in five or more sessions in the week prior).

Statistical Analyses

Prevalence estimates are presented as a percentage of the population. Logistical regression was used to describe the associations between awareness and the selected demographic measures assessed in the study. The association is presented as an odds ratio in comparison to a reference group and indicates the increased or decreased likelihood of a sub-group in the population to perform a specific behaviour. For example, a significant positive odds ratio indicates that the sub-group is more likely to perform the specified behaviour when compared to the reference group. A significant negative odds ratio indicates that the sub-group is less likely to perform the specified behaviour than the reference group. In the current analysis a positive odds ratio indicates that a particular group or subgroup is more likely to report being aware of 10,000 Steps, and a negative odds ratio indicates that a group or subgroup is less likely to report being aware of 10,000 Steps.

To examine the prevalence of awareness from 2005 to 2011 the data from all seven QSS surveys were combined and a final logistic regression was performed. This logistic regression examined the association between awareness and demographic variables within the total sample and also investigated awareness across the seven years. All tests were performed at an alpha level of 0.05.

RESULTS

The Sample

Of the sample, 66.2% were located in the Brisbane and Moreton areas (SEQ), with the residual 33.8% located in the remaining areas of Queensland. Approximately 50.2% of the sample were aged 18-44 years old and approximately 67% of the respondents earned an annual household income greater than \$52 000. Self report data showed that over 61% of the participants were overweight or obese while 46.8% of the sample were sufficiently active for health benefits. Further demographics of the sample are presented in Table 1 (see Appendix).

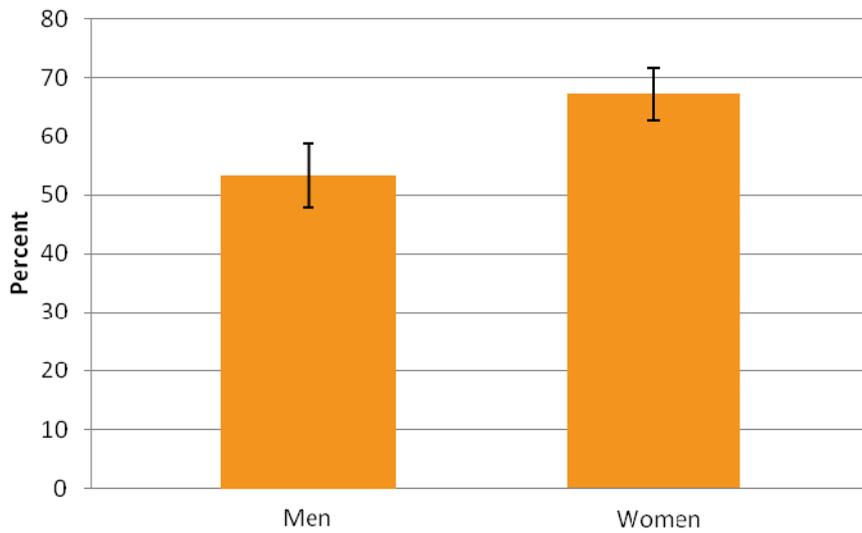
Awareness of the 10,000 Steps Program 2011

Awareness of the 10,000 Steps program was determined through the following research question using a yes no response format; 'Have you heard of the Ten Thousand (10,000) Steps program?' Across the total sample of Queenslanders, 60.4% of the respondents were aware of the 10,000 Steps program. The prevalence of awareness across gender, age, location, years of education, household income and occupation variables are shown in Table 2 (see Appendix). To determine if participant characteristics were associated with awareness, crude and adjusted odds ratios were calculated. The results of the logistic regression analysis investigating the associations between demographic variables and awareness are also presented in Table 2. The crude odds ratios revealed significant associations between awareness and gender, age group, location, years of education, household income, occupational level and BMI category. Significant associations were also found between awareness and gender, age group, location, occupational level and BMI category when adjusting for all demographic variables in the final model. Results are discussed in the following sections.

Gender

A higher percentage of women (67.2%) were aware of the 10,000 Steps program than men (53.4%; Figure 1). The logistic regression analysis revealed that women were significantly more likely to be aware of 10,000 Steps than men.

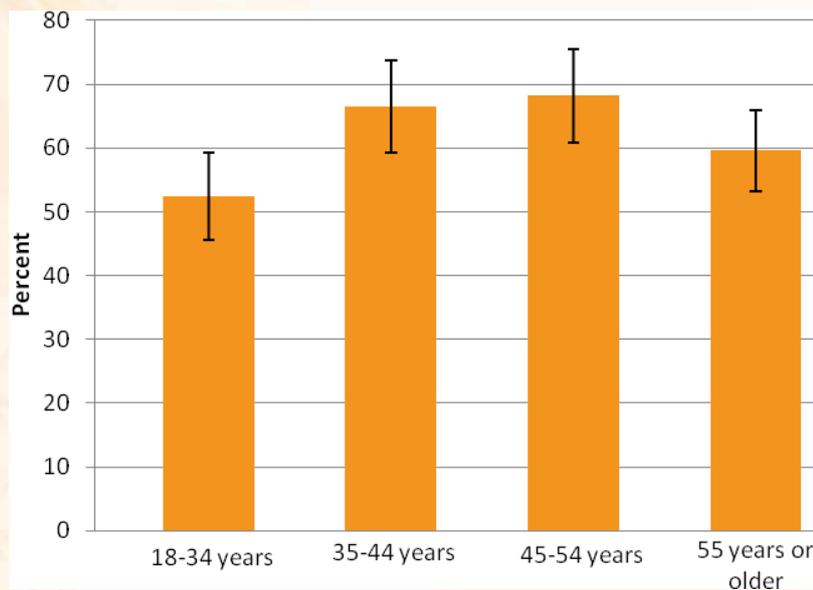
Figure 1. Percentage of respondents aware of 10,000 Steps by gender.



Age Group

Participants aged 45-54 years had the highest levels of awareness of the 10,000 Steps program (68.2%). This was followed by the 35-44 years age group (66.5%) and the 55 years and older age group (59.6%). Participants aged 18-34 years had the lowest levels of awareness at 52.4% (Figure 2). The crude odds ratios revealed that respondents aged 35-44 years, 45-54 years and 55 years or older were significantly more likely to be aware of 10,000 Steps than those aged 18-34 years. Individuals aged between 35-44 years, 45-54 years and aged 55 years and older were significantly more likely to be aware of the 10,000 Steps program when adjusting for all other demographic variables.

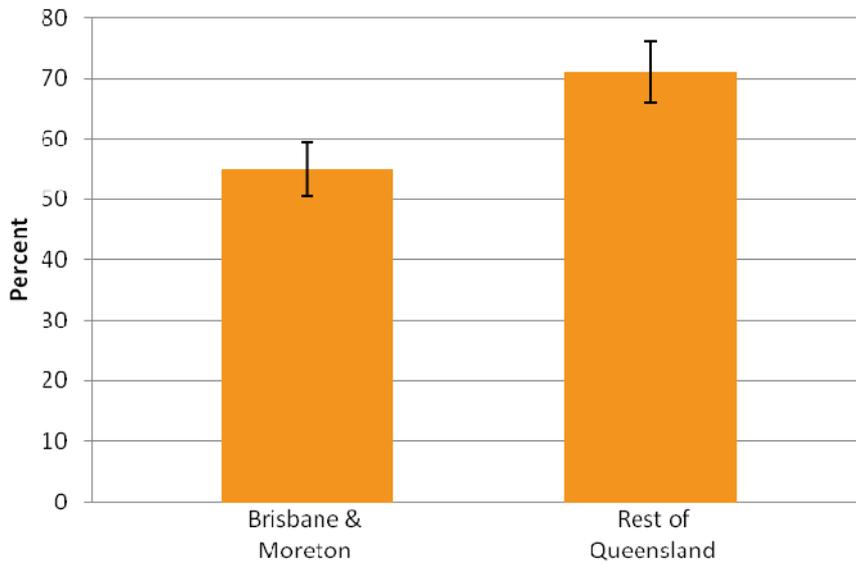
Figure 2. Percentage of respondents aware of 10,000 Steps by age.



Location

Residents from the rest of Queensland (71.0%) were more aware of the 10,000 Steps program than residents living in the Brisbane and Moreton area (55.0%; Figure 3). Odds ratios, adjusted for all demographic variables, showed that residents from the rest of Queensland were significantly more likely to be aware of the 10,000 Steps program compared to Brisbane and Moreton residents.

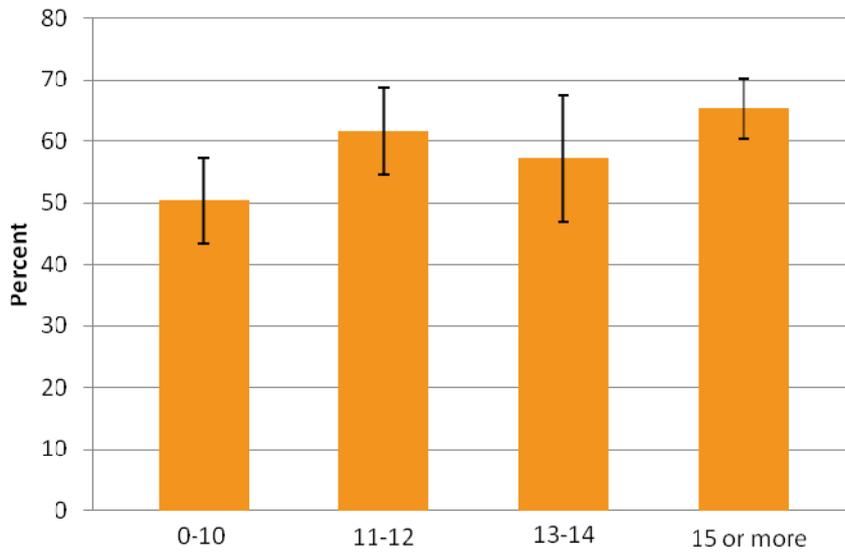
Figure 3. Percentage of respondents aware of 10,000 Steps by location.



Years of Education

Participants with 15 years or more of education had the highest percentage awareness of the 10,000 Steps program (65.3%). This was followed by participants with 11-12 years of education (61.7%) and 13-14 years of education (57.3%). Participants with 0-10 years of education reported the lowest levels of awareness at 50.4% (Figure 4). The crude odds ratios revealed that respondents with 11-12 years and 15 years or more of education were significantly more likely to be aware of 10,000 Steps. However, when adjusting for all demographic variables in the final logistic regression model there was no longer a significant association between years of education and awareness of 10,000 Steps.

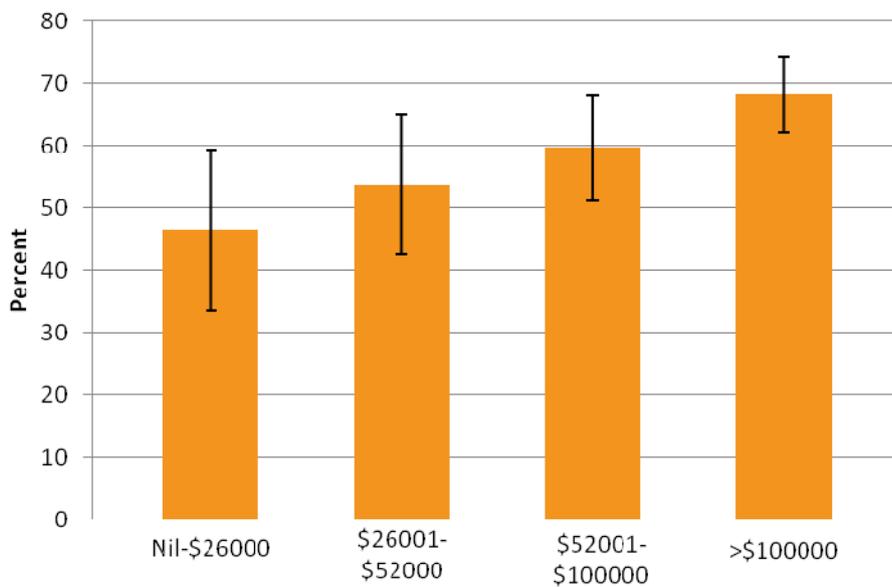
Figure 4. Percentage of respondents aware of 10,000 Steps by years of education.



Household Income

Participants with an annual household income of over \$100,000 had the highest levels of awareness of the 10,000 Steps program (68.3%). This was followed by participants earning \$52,001-\$100,000 (59.7%) and those earning \$26,001-\$52,000 (53.8%). Participants earning \$26,000 or less had the lowest levels of awareness at 46.5% (Figure 5). Crude odds ratios revealed that those earning a household income of \$52,001-\$100,000 and greater than \$100,000 were significantly more likely to be aware of 10,000 Steps than those earning \$26,000 or less. However, household income was no longer found to be associated with awareness when adjusting for all demographic variables in the final logistic regression model.

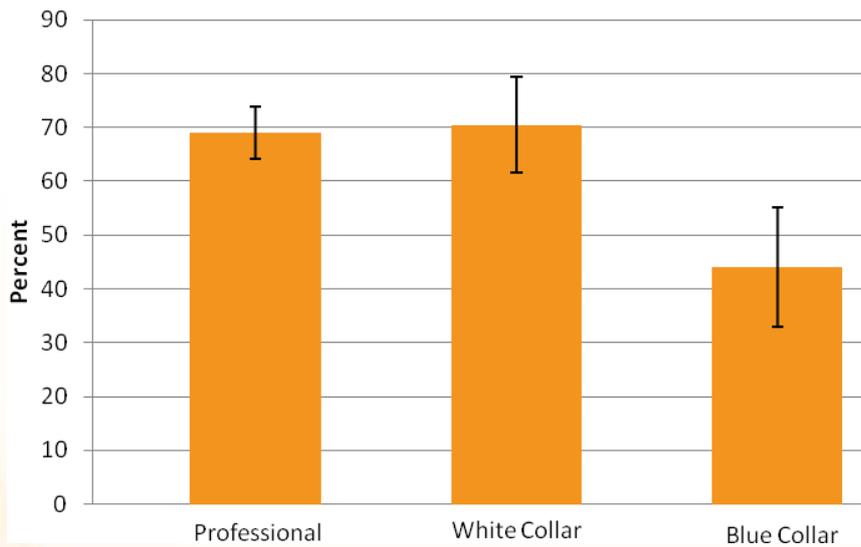
Figure 5. Percentage of respondents aware of 10,000 Steps by household income.



Occupation

White collar workers reported the highest levels of awareness of the 10,000 Steps program (70.5%), followed by professional workers (69.0%) and finally, blue collar workers (44.1%; Figure 6). Both crude and adjusted odds ratios revealed that those in a Blue Collar occupation were significantly less likely to be aware of 10,000 Steps than those in White Collar or Professional occupations.

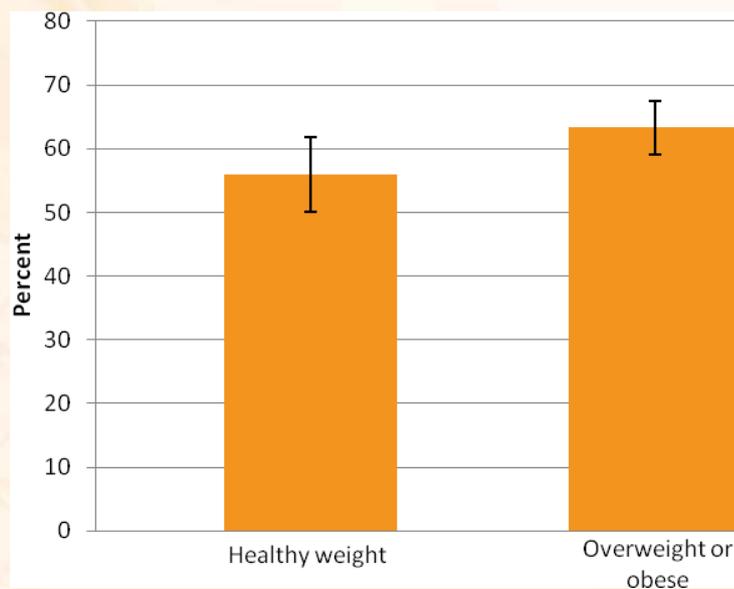
Figure 6. Percentage of respondents aware of 10,000 Steps by occupation.



BMI Category

Participants who were overweight or obese (63.3%) reported a higher level of awareness than healthy weight participants (55.9%; Figure 7). Both crude and adjusted odds ratios revealed that those participants who were overweight or obese were significantly more likely to be aware of 10,000 Steps than those who were of a healthy weight.

Figure 7. Percentage of respondents aware of 10,000 Steps by BMI category.



LTPA Levels

LTPA levels were found not to be associated with awareness in the crude odds ratio analysis. Therefore, this variable was not included in the final logistic regression model.

Overall Awareness of the 10,000 Steps Program 2005-2011

The awareness data from 2005 to 2011 was combined and analysed to investigate trends in 10,000 Steps awareness over the past seven years. The awareness levels over these seven years can be seen in Table 3 (see Appendix). It can be seen that awareness levels were generally found to increase from 2005 to 2009. However, awareness decreased in 2010 before increasing to over 60% in 2011.

Results of the final logistic regression conducted on the combined data can be seen in Table 4 (see Appendix). The results indicate that respondents from the 2006, 2007, 2008, 2009, 2010 and 2011 QSS were more likely to be aware of the 10,000 Steps program than respondents from the 2005 QSS.

Additionally, a separate analysis was conducted using the pooled sample and the same demographic variables included in Table 4 with year as an ordinal variable. This analysis showed that awareness of the 10,000 Steps program has increased each year over time (OR = 1.20, 95% CI 1.16-1.25).

Furthermore it was found that all socio-demographic variables included in the analysis were significantly associated with awareness of the 10,000 Steps program. Women were significantly more likely to be aware of the program than men. Respondents aged 35 years or older were significantly more likely to be aware than those aged 18-34 years. Respondents with 15 years or more of education were more likely to be aware than those with 10 years of education or less and respondents with an annual household income greater than \$52,000 were significantly more likely to be aware than those with an annual household income of \$26,000 or less. Blue collar workers were significantly less likely to be aware of 10,000 Steps compared to professional workers. Respondents who were overweight or obese were significantly more likely to be aware of 10,000 Steps than those who were of a healthy weight.

CONCLUSIONS AND RECOMMENDATIONS

With the continued dissemination of the 10,000 Steps program across Queensland and beyond, it is important to investigate and monitor the awareness of the program in the general population. Currently, 60.4% of Queensland residents are aware of the 10,000 Steps program. This is more than the awareness statistics observed in 2010 indicating that awareness of the 10,000 Steps program has increased over the past 12 months.

In 2011, awareness of 10,000 Steps was found to be associated with resident's geographical location, with residents from the rest of Queensland more likely to be aware of 10,000 Steps than those from Brisbane and Moreton districts. This relationship was also seen in each previous year. [2-7] This finding can be explained by the promotion and dissemination of 10,000 Steps activities across Queensland. As 10,000 Steps began in regional Queensland, individuals from the rest of Queensland sub-sample have been exposed to the program for a longer duration of time which would result in a higher proportion of residents reporting awareness. It has also been observed that there are a higher number of community based 10,000 Steps programs (i.e. Mackay, Cairns, Townsville, and Rockhampton) initiated in the rest of Queensland than in the Brisbane and Moreton Bay districts. Although a significant difference still exists between awareness of individuals located in Brisbane and Moreton districts and the rest of Queensland, awareness levels in Brisbane and Moreton districts continues to increase. With continued promotion and dissemination in the Brisbane and Moreton Bay districts, awareness of the 10,000 Steps program should reach similar levels throughout Queensland. The development of further Brisbane projects will hopefully contribute to and increase the awareness of the 10,000 Steps program in this region.

Analysis of the 2011 data revealed that awareness was also associated with gender, age, occupation and BMI category. Similar results have been found in the previous studies investigating 10,000 Steps awareness in Queensland. [2-7] Furthermore, when data from all seven years of the QSS were combined and analysed, awareness was found to be associated with location, gender, age, years of education, household income, occupation and BMI category. These findings indicate that certain demographic sub-groups of the population are more likely to be aware of 10,000 Steps than others. Women, older adults, individuals from the rest of Queensland, individuals with more than 15 years of education, those individuals who come from a household which earns over \$52,000, blue collar workers and individuals who were overweight or obese were more likely to be aware of the 10,000 Steps program than their respective reference groups.

It is unclear why certain sub-groups of the population are more likely to be aware of the 10,000 Steps program. As in previous years, middle age individuals and women appear to report the greatest awareness. The nature of the 10,000 Steps program may be more appealing to mid-age women, as both this program and other pedometer based physical activity promotion programs have reported higher levels of awareness and participation in this sub-group. [8-10] Statistics for 2011 show that 30% of women in Australia chose walking as a sporting and/ or recreational activity, whereas only 15.6% of men made this selection. [11] This suggests that walking is a more favourable sporting and/ or recreational choice for women.

Higher socioeconomic status has consistently been associated with higher awareness of the 10,000 Steps program. The promotion of specific 10,000 Steps strategies, such as the 10,000 Steps Workplace program may contribute to the increased awareness observed in higher socioeconomic sub-groups. Individuals from a higher socioeconomic background, i.e. those whom have higher income, greater years of education and/ or a professional occupation, may also find the resources more easily accessible and affordable as 10,000 Steps is predominantly internet-based. Statistics from the Australian Bureau of Statistics suggest that in 2007-08 households with higher levels of joint income

have increased access to a computer or internet in the home in comparison to households with lower levels of income [12]. This study also found that higher educational attainment was positively correlated with increased likelihood of computer and internet access. [12] By having increased access to a computer and the internet, people of higher socioeconomic status have more opportunity to be aware of the 10,000 Steps program.

In the current study, the data reflected a significant difference in awareness of the 10,000 Steps program between those aged over 35 years and those aged 18-34 years. It is unknown why younger Australians are not as aware of the 10,000 Steps program as middle age Australians, considering that statistics show 15 to 24 year old Australians use the internet more than any other age groups. [12] Perhaps an increase in focus on employee health in Queensland workplaces has exposed more middle age people to physical activity initiatives such as the 10,000 Steps program. In addition, as 18-34 year olds are more likely to be more active, [11] they may not be seeking programs such as 10,000 Steps for health benefits.

Awareness of the 10,000 Steps program throughout Queensland has increased over time despite a drop in awareness in 2009. As awareness was seen to be above 60% this year similar to 2009, it is possible that the reported decrease in 2010 may not have been a true representation of the public's awareness but related to the sample of participants who completed the survey in 2010. The general increasing trend observed in 10,000 Steps awareness could be associated with the significant increase in household access to computers and the internet within Australia over time. [13] Statistics show that household access to computers has amplified from 44% in 1998 to 78% in 2008-09. [13] Furthermore, internet access within households has increased from 16% in 1998, to 72% in 2008-09. [13] As the internet becomes more functional in everyday life, its abundance within the home and workplace environments' is expected to increase. The Australian population are utilising computer technologies and the internet more in current times, and as 10,000 Steps is distributed via the internet the likelihood of them becoming aware of this program increases.

The general increase in awareness of the 10,000 Steps project may also be attributable to the development of various infrastructure throughout Queensland. The implementation of infrastructure that supports walking, such as pathways, has been identified as an effective means of increasing physical activity participation in Australia. [14] A study from the Australian Bureau of Statistics shows that since 2005-06 through to 2009-10, there has been increased construction toward recreational activity. [15] In recent years the 10,000 Steps walkway signage has been implemented along numerous pathways. In addition to promoting physical activity, this signage also exposes residents to the 10,000 Steps program. It is postulated that the increased growth and investment toward recreational projects [15] may have aided in the increased awareness of the 10,000 Steps project that we have seen over the years.

The higher levels of awareness observed in women, older adults and individuals from the rest of Queensland sub-sample show that 10,000 Steps has been successful at reaching some of the least physically active sub-groups in the population. Both Queensland and national data show that women and older adults are more likely to be sedentary or exercise at low levels than the rest of the population and/or less likely to participate in physical activity. [16, 17] Similarly, it has been shown that individuals located outside of the state capital cities (i.e. within the rest of state) have lower participation rates in physical activity. [18] Therefore, the 10,000 Steps program has been successfully promoted to these less physically active target groups. For the future development of 10,000 Steps and to therefore increase physical activity participation, it is important that specific 10,000 Steps strategies and promotional activities are developed to reach those individuals who are least likely to be aware of the program.

Overall, this awareness data shows that 10,000 Steps has been successfully disseminated and promoted across Queensland. Awareness of the 10,000 Steps program across Queensland had increased since 2005 and has remained above 50% over the past five years. This provides further evidence that the internet has been a valuable tool for disseminating the physical activity program to individuals, organisations and community groups. [9] The sustained dissemination and promotion of the program across the state should continue to raise awareness of the 10,000 Steps program across Queensland.

Future Recommendations

The lower awareness observed in 2010 highlights the need for continued promotion and dissemination of the 10,000 Steps program to ensure that awareness of the 10,000 Steps program does not decrease but instead increases in the future. From the data, the following sub-groups have been identified as those which should be targeted: residents from Brisbane and Moreton Bay districts, men, individuals aged 18-34 years, individuals with fewer years of education, individuals with a low-socio economic status and blue collar workers. These groups are less likely to be aware of the 10,000 Steps program when compared with other demographic groups. Individuals of lower socio-economic status should be targeted in particular as they are less likely to participate in sufficient levels of physical activity, as supported by alternate research. [19, 20] With the planned expansion of the 10,000 Steps project to further encompass workplaces, it is hoped that this will cause a further increase in awareness levels in 2012 and beyond as more people are exposed to the 10,000 Steps project.

Continued examination of the awareness of 10,000 Steps across Queensland should be conducted to monitor the dissemination of the project and to enable researchers to identify areas and target groups toward which further promotion is required. As the promotion of the 10,000 Steps program continues, it may also be valuable to investigate 10,000 Steps awareness on a national level as an increasing number of organisations and communities outside of Queensland are adopting the program.

APPENDIX: TABLES

Table 1. Demographic characteristics of the total sample of participants, 2011 (n=1276).

Characteristic	n	%	Valid %
Gender			
Male	627	49.1	49.1
Female	649	50.9	50.9
Age Group			
18-34 years	388	30.4	30.6
35-44 years	248	19.4	19.6
45-54 years	233	18.3	18.4
55+ years	397	31.1	31.4
Missing	10	0.8	
Location			
Brisbane & Moreton	845	66.2	66.2
Rest of Queensland	431	33.8	33.8
Years of Education			
0-10 years	243	19.1	19.2
11-12 years	303	23.8	24.0
13-14 years	158	12.4	12.5
≥15 years	560	43.9	44.3
Missing	12	0.9	
Household Income (per annum)			
Nil-\$26 000	123	9.6	15.3
\$26 001-\$52 000	142	11.1	17.6
\$52 001-\$100 000	216	17.0	26.9
>\$100 000	323	25.3	40.2
Missing	473	37.0	
Occupation			
Professional	517	40.5	62.0
White Collar	142	11.1	17.0
Blue Collar	176	13.8	21.0
Missing	441	65.4	
BMI Category			
Healthy weight	488	38.2	38.3
Overweight or Obese	787	61.7	61.7
Missing	1	0.1	
LTPA Levels			
No Activity	198	15.5	15.5
Insufficient Activity	480	37.6	37.7
Sufficient Activity	597	46.8	46.8
Missing	2	0.1	

Table 2. Crude and adjusted odds ratios for awareness by demographic variables, 2011.

Variable	n	% Aware	Crude OR	95% CI	Adjusted ^a OR ^b	95% CI
Gender						
Male	333	53.4	1.00	Reference	1.00	Reference
Female	434	67.2	1.79	1.43-5.25	1.79	1.18-2.71
Age Group						
18-34 years	203	52.4	1.00	Reference	1.00	Reference
35-44 years	165	66.5	1.80	1.30-2.51	2.29	1.37-3.83
45-54 years	155	68.2	1.95	1.38-2.74	1.81	1.08-3.05
≥55 years	236	59.6	1.35	1.01-1.79	2.24	1.22-4.10
Location						
Brisbane & Moreton	461	55.0	1.00	Reference	1.00	Reference
Rest of Queensland	306	71.0	2.01	1.56-2.57	1.93	1.24-3.02
Years of Education						
0-10	122	50.4	1.00	Reference	1.00	Reference
11-12	185	61.7	1.58	1.12-2.23	1.72	0.86-3.45
13-14	90	57.3	1.32	0.88-1.98	0.99	0.45-2.17
≥15	365	65.3	1.85	1.36-2.52	1.34	0.71-2.53
Household Income (per annum)						
Nil-\$26 000	57	46.5	1.00	Reference	1.00	Reference
\$26 001-\$52 000	76	53.8	1.34	0.83-2.19	1.16	0.47-2.84
\$52 001-\$100 000	129	59.7	1.71	1.09-2.67	1.50	0.68-3.33
>\$100 000	220	68.3	2.48	1.62-3.81	1.87	0.87-4.04
Occupation						
Professional	356	69.0	1.00	Reference	1.00	Reference
White Collar	99	70.5	1.07	0.71-1.61	1.14	0.62-2.08
Blue Collar	77	44.1	0.35	0.25-0.50	0.34	0.20-0.58
BMI Category						
Healthy weight	272	55.9	1.00	Reference	1.00	Reference
Overweight or Obese	495	63.3	1.36	1.08-1.71	1.86	1.25-2.76

^a Odds ratios adjusted for all variables in the table.

^b n= 500

Table 3. Awareness of the 10,000 Steps program 2005-2011.

Variable	% Aware 2005	% Aware 2006	% Aware 2007	% Aware 2008	% Aware 2009	% Aware 2010	% Aware 2011
Total	33.5	42.5	56.6	53.7	64.4	51.7	60.4
Gender							
Male	29.0	36.5	53.1	48.1	58.2	52.4	53.4
Female	37.7	48.5	60.0	59.2	70.8	64.3	67.2
Age Group							
18-34 years	31.9	40.3	41.8	43.8	56.5	47.9	52.4
35-44 years	33.9	42.0	63.5	57.0	70.5	57.8	66.5
45-54 years	38.8	52.0	61.0	66.8	68.3	65.3	68.2
≥55 years	30.3	37.3	57.1	49.0	62.8	58.4	59.6
Location							
Brisbane & Moreton	26.0	37.0	52.6	48.7	59.9	54.1	55.0
Rest of Queensland	47.9	53.3	64.5	63.2	73.5	66.4	71.0
Years of Education							
0-10	25.6	35.4	49.9	47.8	61.1	55.3	50.4
11-12	32.3	38.0	58.1	51.7	62.2	55.6	61.7
13-14	42.3	43.4	51.1	49.1	57.6	61.6	57.3
≥15	37.0	49.5	62.5	62.1	71.0	61.0	65.3
Household Income							
Nil-\$26 000	30.2	36.4	47.7	40.0	53.6	48.8	46.5
\$26 001-\$52 000	29.4	40.2	60.1	47.8	54.9	58.5	53.8
\$52 001-\$100 000	35.8	48.5	59.6	59.8	66.5	60.8	59.7
>\$100 000	40.4	49.7	70.0	62.4	78.6	66.7	68.3
Occupation							
Professional	37.3	49.5	64.5	62.7	76.7	65.7	69.0
White Collar	38.1	43.8	52.4	55.1	66.4	62.1	70.5
Blue Collar	31.4	34.6	50.0	46.7	47.1	46.9	44.1
BMI Category							
Healthy weight	32.7	41.7	52.9	52.5	62.7	54.3	55.9
Overweight/ Obese	34.4	42.8	60.4	54.5	65.6	60.3	63.3
LTPA Levels							
Sedentary	31.8	-	43.2	50.5	59.1	47.9	57.4
Insufficient Activity	34.4	-	60.4	51.8	64.3	53.8	59.5
Sufficient Activity	33.5	-	58.8	55.6	66.4	55.4	62.2

Table 4. Variables associated with awareness of the 10,000 Steps program, 2005-2011.

Variables	Adjusted^a OR^b	95% CI
Gender		
Male	1.00	Reference
Female	1.81	1.54-2.14
Age Group		
18-34 years	1.00	Reference
35-44 years	1.46	1.18-1.82
45-54 years	1.93	1.56-2.40
≥55 years	1.71	1.35-2.17
Location		
Brisbane & Moreton	1.00	Reference
Rest of Queensland	2.20	1.86-2.59
Years of Education		
0-10	1.00	Reference
11-12	1.23	0.96-1.56
13-14	1.28	0.98-1.68
≥ 15	1.54	1.23-1.93
Household Income		
Nil-\$26 000	1.00	Reference
\$26 001-\$52 000	1.02	0.73-1.43
\$52 001-\$100 000	1.46	1.08-1.98
>\$100 000	1.95	1.43-2.65
Occupation		
Professional	1.00	Reference
White Collar	0.94	0.76-1.18
Blue Collar	0.61	0.50-0.75
BMI Category		
Healthy weight	1.00	Reference
Overweight or Obese	1.29	1.10-1.51
Year of Survey		
2005	1.00	Reference
2006	1.62	1.23-2.15
2007	3.04	2.27-4.07
2008	2.55	1.94-3.35
2009	4.04	3.04-5.37
2010	2.91	2.20-3.85
2011	3.42	2.57-4.56

^a Odds ratios adjusted for all variables in the table.

REFERENCES

1. Brown WJ, Mummery K, Eakin E, Schofield G. 10,000 Steps Rockhampton: evaluation of a whole of community approach to improving population levels of physical activity. *J Physical Activity Health* 2006; 3(1):1-14.
2. Joyner K. Paper 1: Awareness of the 10,000 Steps program across Queensland. Rockhampton: Centre for Social Science Research, Central Queensland University; 2006.
3. Joyner K, Mummery WK. Paper 4: Awareness of the 10,000 Steps Program across Queensland, 2006. Rockhampton: Centre for Social Science Research, Central Queensland University; 2006.
4. Joyner K, Mummery WK. Paper 5: Awareness of the 10,000 Steps Program across Queensland, 2007. Rockhampton: Centre for Social Science Research, Central Queensland University; 2007.
5. Joyner K, Mummery WK. Paper 6: Awareness of the 10,000 Steps Program across Queensland, 2008. Rockhampton: Centre for Social Science Research, Central Queensland University; 2008.
6. Corry K, Behan R & Mummery WK. Paper 8: Awareness of the 10,000 Steps Program across Queensland, 2009. Rockhampton: Institute for Health & Social Science Research, Central Queensland University, 2009.
7. Hooker C, Hall S, Connolly K & Duncan D. Paper 13: Awareness of the 10,000 Steps Program across Queensland, 2010. Rockhampton: Institute for Health & Social Science Research, Central Queensland University, 2010.
8. Australian Institute of Health and Welfare. *The Active Australia Survey: a guide and manual for implementation, analysis and reporting*. Canberra: AIHW;2003.
9. Mummery WK, Schofield G, Hinchliffe A, Joyner K, Brown W. Dissemination of a community-based physical activity project: The case of 10,000 Steps. *Journal of Science and Medicine in Sport* 2006; 9(5):424-30.
10. Plotnikoff RC, Spence JC, Tavares LS, Rovniak LS, Bauman A, Lear SA, et al. Characteristics of Participants Visiting the Canada on the Move Website. *Canadian Journal of Public Health* 2006; 97:S28.
11. PA PDF
12. Australian Bureau of Statistics. *Australian Social Trends 2008*. *Internet access at home*. [Online]. Available from: [http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/5A60A933925F7987CA25748E0012ADCF/\\$File/internet%20access%20at%20home%20final%20version.pdf](http://www.ausstats.abs.gov.au/Ausstats/subscriber.nsf/0/5A60A933925F7987CA25748E0012ADCF/$File/internet%20access%20at%20home%20final%20version.pdf) [Accessed 19th October 2011].
13. Australian Bureau of Statistics. *Household use of information technology, Australia, 2008-98*. [Online]. Available from: <http://www.abs.gov.au/ausstats/abs@.nsf/PrimaryMainFeatures/8146.0?OpenDocument> [Accessed 19th October 2011].
14. Active Blue Print
15. Engineering construct
16. Queensland Health, Australian Institute of Health and Welfare. *Physical activity patterns of Queensland adults: Trends from 1997 to 2001*. Brisbane: Queensland Health and Australian Institute of Health and Welfare; 2003.
17. Australian Bureau of Statistics. *Physical activity in Australia: A snapshot, 2004-5*. Canberra: ABS; 2006.

18. Australian Sports Commission. Participation in exercise, recreation and sport survey: 2010 annual report. Canberra: ASC; 2011.
19. Trost SG, Owen N, Bauman AE, Sallis JF, Brown W. Correlates of adults' participation in physical activity: review and update. *Medicine and Science in Sports and Exercise* 2002; 34(1996-2001).
20. Sallis JF, Owen N. *Physical activity and behavioural medicine*. Thousand Oaks: Sage Publications; 1999.



For information on physical activity
and programs contact:

10,000 Steps
Ph: (07) 4930 6751 Fax: (07) 4930 6402
Email: 10000steps@cqu.edu.au
Website: www.10000steps.org.au