Correlates of Omani adults' physical inactivity and sitting time

Running Title: Inactivity of Omani Adults

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Abstract (250 words)

Objective: To inform public health approaches for chronic disease prevention, this study identified sociodemographic, anthropometric and behavioral correlates of work, transport and leisure physical inactivity, and sitting time, among adults in Oman.

Design: Cross-sectional study using the WHO STEPwise study methodology.

Setting: Sur City, Oman

Subjects: Men and women aged 20 years and older (n=1335) in the Sur City Healthy Lifestyle Study who had complete data for demographic variables (gender, age, education, work status and marital status), body mass index (BMI) and behavioral risk factors − smoking and dietary habits plus physical inactivity and sitting time (the outcome variables).

Results: The highest levels of physical inactivity was in the leisure domain (55.4%); median sitting time was about two hours/day. Gender-stratified logistic regression models found that the statistically significant (<0.05) correlates of inactivity (in one or more domains) were: age, work status, and fruit and vegetable intake in women; age, education, work status, marital status and BMI in men. Gender-stratified linear regression models found that the statistically-significant correlates of sitting time were: age, work status and BMI in women and education in men.

Conclusions: Findings suggest that public health interventions need to be gender responsive and focus on domain-specific physical inactivity. In the Omani context, this might include gender segregated exercise facilities to promote leisure physical activity among women and walking-friendly environmental initiatives to promote transport physical activity among men. Further evidence on barriers to physical activity and factors that influence prolonged sitting is required to develop relevant public health interventions.

INTRODUCTION

Physical inactivity is a key modifiable risk factor for cardiovascular disease, type 2 diabetes and the metabolic syndrome, a precursor of these diseases.[1-3] Sedentary behavior (too much sitting, as distinct from too little exercise) is a recently identified health risk that has shown associations with the metabolic syndrome and its components in cross-sectional[4-6] and prospective studies,[7, 8] mostly conducted in western populations. Evidence from Oman demonstrates associations of physical inactivity, particularly in the work and transport domains, and sitting time with higher odds of the metabolic syndrome, although these associations are not completely independent.[9] Given the rising prevalence of obesity, type 2 diabetes, cardiovascular and other chronic diseases in Oman,[10] reducing physical inactivity and prolonged sitting are public health priorities.

Recent reviews have identified lower educational attainment, lower income and older age to be consistently associated with physical inactivity, with evidence primarily from adults in developed countries.[11, 12] Less is known about the prevalence and correlates of sitting time.[13] A recent review using data from 20 developed and developing countries identified older age and higher educational attainment to be associated with higher overall sitting time.[14]

Using a cross-sectional population-representative dataset, this study examined the socio-demographic, anthropometric and behavioral correlates of physical inactivity in the work, transport and leisure domains, and of sitting time, among Omani adults.

METHODS

Overview of the Sur Healthy Lifestyle Survey

The Sur Healthy Lifestyle Survey is a cross-sectional survey of Omani men and non-pregnant women aged 20 years or older residing in the city of Sur; data collection took place from March to June 2006. It followed the WHO STEPwise methodology, a standard method of data collection on key risk factors for chronic diseases.[15] The Arabic version of the WHO STEPwise instrument was adapted to the local context using the local Arabic dialect, incorporating additional questions on dietary intake, and deleting the section on alcohol use due to the sensitivity of asking this information. A multi-stage sampling design was used where a random sample of 1,700 houses were selected from 191 census clusters in Sur city and an individual was randomly selected in each selected household from all eligible

household members. A high proportion of those selected completed the household interview and clinical measures (n=1373; 80.8%). Ethical approval for this survey was granted by the Ministry of Health Research Committee. Participants with complete data for all key variables (n=1335; 97%) were included in the present analyses. Only limited information on the study sampling frame and response rates was available. The sample differed in age and gender distribution to the Sur City population around the time of the survey (based on the most proximal National Census).[16] Thus, weights for each gender-specific 5-year age band were derived to 'reweight' the sample to the reference population (Sur City population, 2003).[16]

Data Collection

The adapted Arabic version of the WHO Stepwise instrument was used to collect data for demographic variables (gender, age, education, work status and marital status), overweight and obesity and behavioral risk factors (smoking, dietary habits, physical activity and sitting time). Demographic and behavioral data were collected using face-to-face household and individual interviews. Anthropometric measurements (height and weight) were taken following the WHO protocol[15] during the clinic visits. Questionnaires were reviewed for quality prior to data entry in SPSS (v.9).

Potential Correlates and Outcome Variables

The dependent variables were domain-specific physical inactivity and total sitting time measured using the 16-item Global Physical Activity Questionnaire (GPAQ) and scored as per standard protocols.[17] GPAQ, developed by the World Health Organization and incorporated within the WHO STEPwise instrument, measures physical activity (intensity, duration, and frequency) performed in three domains - work (paid and unpaid including housework), transport (walking and cycling) and leisure - as well as total sitting time. Studies have confirmed the validity and reliability of this instrument across diverse populations, but not Arab populations.[18-20] Physical activity was estimated by calculating energy expenditure using the Metabolic Equivalent (MET), the ratio of specific physical activity metabolic rates compared with the resting metabolic rate (one MET is equivalent to the energy cost of sitting quietly, 1 kcal/kg/hour). Total MET-minutes/day was calculated for each domain by first multiplying MET values by reported minutes, with moderate-intensity and transport activity

assigned 4 MET values and vigorous-intensity activities assigned 8 MET values, and then adding the total MET-minutes of vigorous and moderate intensity activities performed.

Domain-specific activity variables did not follow a distribution that could easily be modeled and ordinal logistic regression assumptions were not met; thus, binary variables were used to define each physical inactivity outcome examined. A substantial proportion of participants did no transport and leisure physical activity; these outcomes were examined as none versus any, since inactivity (doing no activity) was of interest. All participants did at least some physical activity in the work domain; thus, this was examined as lowest quartile ('inactive') versus the three higher quartiles of work physical activity in the Sur city population. The GPAQ instrument includes a single item on total sitting time – "Over the past 7 days, how much time did you spend sitting or reclining on a typical day?" – with responses reported as hours and/or minutes per day. Since the distribution of sitting time was non-normal, the natural log for sitting time was used.

The independent variables included gender, age (20 – 29 years 30 – 39 years and 40+ years), education (<secondary education, secondary education, post-secondary education), marital status (married, not married), employment status (employed, not employed), body mass index (BMI), which was calculated as weight (kg) divided by height (m) squared, smoking status (current smoker, non-smoker) and intake of fruits and vegetables (<2, $\geq$ 2 servings/day). Inclusion and categorization of variables was based on bivariate and regression analysis to ensure that there was sufficient power for the regression models and adequate numbers in all categories.

Data Analysis

Data were analyzed using STATA (v.11). Independent associations of correlates of each physical inactivity outcome were estimated using binary logistic regression. Results are reported as odds ratios with 95% confidence intervals (CIs). Independent associations of correlates of sitting time were estimated using linear regression. Results are reported as exponentiated beta coefficients with 95% CIs; these can be interpreted as ratios, sometimes termed "relative rates". Whenever a significant correlate was identified, marginal probabilities (logistic regression) or means (linear regression) were also reported from these models to highlight the absolute prevalence of inactivity or mean sitting time (adjusted for

confounders) in the population sub-groups that had been identified as more inactive, or having higher sitting times, than their counterparts. All models were weighted to the Sur city population and included all correlates studied (age, education, employment status, marital status, number of vegetable and fruit servings per day, BMI; men's models also included smoking). Models (without weighting) were tested for gender and age interactions. Statistical significance was set at $p<0.05$. Two-fold higher or lower odds (logistic regression) or relative rates (linear regression) were considered potentially sizeable differences across categories (or across a meaningful exposure dose for continuous variables). As is the case for the $p<0.05$ threshold for significance, these cut-offs are arbitrary, but can be taken to indicate that associations were likely.

RESULTS

The sample was young (mean age 36.3 years, SD 12.5 years) with more than half having at least a high school education (57.7%) and nearly two-thirds being married (61.6%; See Table 1). In addition, the sample had a mean BMI in the overweight category (mean BMI 28.0 kg/m^2, SD 6.4). Overall, the highest levels of physical inactivity was in the leisure domain (55.4%); the median sitting time per day was about two hours.

INSERT TABLE 1 ABOUT HERE

Due to many statistically significant gender interactions, results are presented stratified by gender. Tables 2 and 3 present the independent correlates of men's and women's work, transport and leisure inactivity.

In men, none of the potential correlates examined showed significant associations with work inactivity. For transport inactivity, age (p=0.02) and BMI were significant correlates; for age, there was no clear increasing or decreasing trend and each additional BMI unit was significantly associated with 6% higher odds of transport inactivity (95% CI: 1% to 10%). Significantly higher odds of leisure inactivity was seen in men with lower levels of education (p for trend=0.03), men who were not employed compared to men who were and married men compared to those not married. Further examining adjusted prevalence across the identified correlates revealed some population sub-groups who were commonly inactive considering the overall prevalances of inactivity (95% CI) in men in Sur City: 31.2% (27.5,

35.0) for work inactivity, 23.8% (20.3, 27.2) for transport inactivity and 41.7% (37.7, 45.7) for leisure inactivity. Adjusted prevalence (95% CI) of leisure inactivity was 52.1% (41.9, 62.2) in men who were not employed, 48.6% (41.6, 55.5) in married men and 47.9% (39.8, 56.2) in men with less than secondary education. Adjusted prevalence (95% CI) of transport inactivity was 32.6% (23.6, 41.7) in men who were obese (BMI$\geq$ 30 kg/m^2) and 31.0% (23.2, 38.9%) in men aged 30-39 years.

INSERT TABLES 2 AND 3 ABOUT HERE

In women, age was the only potential correlate significantly associated with work inactivity (p=0.03); specifically, those aged 40 years and older had more than double the odds of being inactive compared with the youngest cohort. No potential correlates had significant associations with transport inactivity. For leisure inactivity, work status and fruit and vegetable intake were significant correlates: the odds of leisure inactivity were approximately 1.8-fold higher in women who were not employed, compared with women who were and approximately 1.6-fold lower for women consuming at least two servings of fruits and vegetables per day than women who did not. For women overall in Sur City, the adjusted prevalence (95% CI) for work inactivity was 20.4% (17.5, 23.3), 33.9% (30.5, 37.3) for transport inactivity and 65.7% (62.2, 69.1) for leisure inactivity. Adjusted prevalence (95% CI) across the identified correlates showed the subgroups of women who were often 'inactive' were women aged 40 years and older (28.7% [20.0, 37.4] for work inactivity), who were not employed (71.0% , [65.5, 76.4] leisure inactivity) and who consumed less than two servings of fruit and vegetables per day (71.2% [65.9, 76.5] leisure inactivity).

Table 4 shows the correlates of sitting time. For men, there was only one significant correlate of sitting time: compared with those with less than secondary education, sitting time was relatively higher by 20% in men with secondary education and by 32% in men with post-secondary education. There was no evidence of association of smoking or age with sitting time overall; however, the association of smoking with sitting time differed by age (p for interaction =0.02). Using an additional model that included an interaction term for these variables, there was no association of smoking with sitting time in men aged 20 to 29 years and 40 years or older, however, in men aged 30-39 years, smokers had significantly higher sitting time than their non-smoking counterparts (mean: 215 mins/day, 95% CI: 167, 277 versus 149 mins/day, 95% CI: 129, 173; p<0.05) (data not shown in Table). The overall mean

sitting time of men in Sur City was 157 mins/day (95% CI: 147, 168). Looking at the marginal means for the identified correlates revealed some groups of men with high sitting time, including those with post-secondary education (182 mins/day, 95% CI: 157, 211) and smokers aged 30 – 39 years (215 mins/day, 95% CI: 167, 277).

INSERT TABLE 4 ABOUT HERE

For women, age, employment status and BMI were significantly associated with sitting time. Age was inversely associated with sitting time: compared with women aged 20-29 years, sitting time was relatively lower by 23% in women aged 30-39 (exp(b)=0.81, 95% CI: 0.69, 0.94; p<0.001) and by 41% in women aged 40 or more (exp(b)=0.71, 95% CI: 0.57, 0.88; p<0.001). Sitting time was relatively higher by 49% in employed women compared with women who were not employed (p<0.01). In women, for every unit increase in BMI, there was a significant increase in sitting time. The overall mean sitting time for women in Sur City was 122 mins/day (95% CI: 115, 130). Marginal means across the identified correlates showed high levels of sitting in certain groups of women: aged 20 – 29 years (143 mins/day, 95% CI: 127, 161), who were not employed (141 mins/day, 95% CI: 126, 158) and who were obese (140 mins/day, CI: 126, 156).

DISCUSSION

This examination of the socio-demographic, anthropometric and behavioral correlates of physical inactivity and sitting time is one of the few available for a population from the Arabian Gulf and one of the few available internationally using the GPAQ. The population was most inactive in the leisure domain, compared to the transport and leisure domains, similar to some countries in Asia and Africa.[21-24] Sitting time in our study was less than what has been reported in many other countries.[14, 24, 25] All attributes studied showed significant association with at least one domain of physical inactivity or sitting time and differed by gender, by domain-specific physical inactivity and sitting time. The gender variations highlight the importance of understanding the conservative cultural norms which influence how men and women can be physically active.

Evidence from developed countries, most of which addresses leisure-time physical activity, indicates that older age is associated with being less active.[11, 12] However, evidence on overall

levels of physical inactivity (which includes physical activity from all three domains) paints an inconsistent picture. There is an increase in physical inactivity with age in both developed and developing countries, particularly in men. On the other hand, inactivity does not vary with age in some rural populations in Asia,[22] and in Ho Chi Min City, Vietnam, specifically.[23] In some countries, such as New Zealand, both men and women in all age groups are, in general, physically active.[26] In this study, older Omani women were less active in the work domain compared with their younger counterparts. One explanation for this may be that younger women may be carrying the double burden of both formal employment (i.e., in professions that require long periods of standing/walking such as teaching and nursing) as well as household/family responsibilities unlike women over 40 years who generally are not part of the formal employment sector.[27] The relationship of younger age being associated with transport inactivity among men in Sur may be a reflection of the cohort effect with older men possibly being more accustomed to regular active transport, bearing in mind that widespread car ownership is a relatively recent phenomenon.[28]

Many studies from developed countries have reported that people with less education have higher odds of being physically inactive;[11, 12] such an association was only seen among men in our study. However, similar to age, global evidence on the associations of education with physical activity is inconsistent.[22, 29] Studies in south-east Asia have found that those with less education are more active,[22, 23] highly educated individuals in China were less active during work and transport but more active during leisure compared with those less educated, but in the Philippines, Malaysia and Nauru there was no association between education and physical activity.[29] Given that the association of education with physical inactivity appears to be context specific, and due to some of the inconclusive findings for the Sur population, further research is needed to better understand this relationship in Oman.

One of the most interesting findings from this study is that men and women who are not employed are at significantly higher odds of leisure inactivity; a finding seen in some developed countries[30-32] but not others.[33, 34] In this study, those who are not employed were diverse (i.e., students, job seekers, housewives and retirees); barriers and supports for physical inactivity likely vary for each of these different groups. Thus, further research about the non-working population would be useful to shape appropriate public health interventions.

Associations of the other correlates identified in this study (marital status, diet and BMI) have been reported elsewhere.[11, 12] Studies have noted the clustering of risk behaviors such as physical inactivity with low fruit and vegetable intake[30, 35] which suggests that public health interventions might target both behavioral risk factors together. The association of a higher BMI with transport inactivity in men suggests that the promotion of physically-active transport (such as the provision of sidewalks in residential areas to improve access to neighborhood mosques and grocery stores) could be considered a potential obesity prevention/management strategy.

A unique contribution of this study was the evaluation of the correlates of sitting time, an area with limited available evidence.[13] The findings that younger women have higher sitting times than older women was seen in ten of 18 countries in the International Prevalence Study (IPS)[14] and a study in Australia;[36] however, a study in the USA showed that sedentary time increased with age for both men and women.[37] The results that more-educated men have higher sitting times than those less educated was also observed in 15 of 19 countries in the IPS[14] but not in a study in Australia.[36] Some of the other correlates identified in this study (employment status, smoking and BMI) have been reported to be associated with TV viewing time in populations in Australia and the USA.[38, 39] Recent evidence indicates that the relevant correlates can vary depending on the type of sedentary behavior;[36, 38, 39] thus, further research on the correlates of domain specific sedentary behaviors is required.

Although the study had a high response rate (80%) and data were weighted to the Sur population, the generalizability of the results within Sur itself is limited by the fact that information regarding population clusters and non-respondents was not available at the time of analysis. Since the study was only of the adult population in Sur, generalizability nationally or to neighboring countries may also be limited. The sample size − while not planned a pirori for the research questions that we address − appears adequate for sitting time; the sitting time findings either showed a 'significant' correlate of sitting time, or null results showed any sizeable association to be unlikely (that is, confidence intervals always ruled out sizeable effects, defined as a two-fold relative rate or odds ratio). For physical inactivity, larger samples are needed to ensure adequate power to provide definitive results, as null results were sometimes inconclusive, neither showing a significant association, nor ruling out sizeable effects (here, a doubling/halved in odds). Given that the GPAQ has not

been validated for an Arab population,[19] the error associated with self-reported measures of physical activity and sitting time, and that the Sur questionnaire does not explicitly provide guidance to the interviewee on potentially confusing phrases (i.e., 'moderate-intensity physical activity' and 'sitting time')[37] it is possible that some people have been misclassified for domain-specific physical activity and that the reported sitting is over or under estimated. The associations reported do not denote causality due to the cross-sectional nature of the study.

Measurement limitations need to be addressed in order to improve population-based surveys in Arab countries. For example, the GPAQ, which is a part of the STEPwise instrument, has been tested for validity in some developed countries but not with Arab populations. Device-based measurement would be preferable, but has not yet been used in population-based surveys in the Arabian Gulf region. Given that the WHO Stepwise has been used in several Arab countries, it appears to be the best option available at this time.

In summary, this study is the first to report on the correlates of physical inactivity and sitting time for a population-based survey in the Arabian Gulf. Key population demographic sub-groups with particularly high prevalence of physical inactivity were men and women who were not employed, women aged 40 years and older, men aged 20 – 29 years, and men who were married; those with high mean levels of sitting time were women aged 20 – 29 years, women who were not working and men with post secondary education. Further information regarding the barriers and supports for these behaviors, particularly for the high-risk demographic groups, is required to shape public health policy and program interventions. BMI had associations only with transport inactivity in men and sitting time in women, pointing to the need to explore the possibility of active transport and reductions in sitting time, as potential obesity prevention/management strategies for this population. With over half of the population of Sur city, and nearly three-quarters of non-working women, doing no leisure-time physical activity at all, promotion of leisure-time physical activity is an important goal.

These findings can help to inform the targeting of public health interventions to reduce physical inactivity and sitting time. Given the varied patterns of associations by gender and by work, transport and leisure physical activity, public health interventions may need to be

gender-specific and focus on domain-specific physical activity, such as establishing gender segregated exercise facilities to promote leisure time physical activity among women and building walker-friendly neighborhoods to promote transport physical activity among men. Because of the high prevalence of overweight/obesity in Oman and the Arabian Gulf,[28, 40] promoting physical activity, particularly among high risk groups, is a priority. Since continued socio-economic development in Oman may lead to increases in work and transport inactivity and more-prolonged sitting time, creating activity supportive environments is an important population health strategy.

Disclaimer: The views expressed in this paper are the authors' and do not necessarily reflect those of WHO.

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Table 1. Selected characteristics of participants in the Sur Healthy Lifestyle Survey, Oman[a]

	Men (N=591)	Women (N=744)	Total (N=1335)
Age (years)	37.7 (13.5)	35.2 (11.4)	36.3 (12.5)
Education			
Less than Secondary	41.1 (243)	43.2 (321)	42.3 (564)
Secondary	37.4 (221)	21.1 (157)	28.3 (378)
Post secondary	21.5 (127)	35.8 (266)	29.4 (393)
Work Status			
Employed	78.0 (461)	41.7 (310)	57.8 (771)
Not employed	22.0 (130)	58.3 (434)	42.3 (564)
Marital Status			
Not married	33.5 (198)	42.3 (315)	38.4 (513)
Married	66.5 (393)	57.7 (429)	61.6 (822)
Fruit and vegetable intake			
<2 servings per day	52.5 (310)	48.5 (361)	50.3 (671)
2+ servings per day	47.6 (281)	51.5 (383)	49.7 (664)
Currently smoke			
No	79.2 (468)	99.7 (742)	90.6 (1210)
Yes	20.8 (123)	0.3 (2)	9.36 (125)
Body Mass Index (kg/m^2)	26.4 (5.0)	29.2 (7.0)	28.0 (6.4)
Physical inactivity			
Low Work[b]	32.1 (190)	18.4 (137)	24.5 (327)
No Transport	25.5 (151)	34.4 (256)	30.5 (407)
No Leisure	43.8 (259)	64.5 (480)	55.4 (739)
Sitting (mins/day)	180 (120, 300)	120 (60, 199)	120 (90, 240)

[a] Table presents mean (SD), % (unweighted n), or median (25th, 75th percentile)

b Low work = lowest quartile

Table 2. Correlates of domain-specific physical inactivity in Omani men (n=591) [a] [b]

	Work		Transport		Leisure	
	n (Inactive)	OR (95% CI)	n (Inactive)	OR (95% CI)	n (Inactive)	OR (95% CI)
Age						
20 – 29 years (n=197)	57	1 (ref)	41	1 (ref)	63	1 (ref)
30 – 39 years (n=177)	58	1.37 (0.80, 2.35)	63	1.50 (0.86, 2.61)	76	1.33 (0.80, 2.21)
40+ years (n=217)	75	1.47 (0.76, 2.84)	47	0.71 (0.36, 1.40)	120	1.43 (0.79, 2.59)
p for trend		0.44		0.02		0.44
Education						
Less than Secondary (n=243)	74	1 (ref)	61	1 (ref)	130	1 (ref)
Secondary (n=221)	78	1.21 (0.72, 2.05)	54	0.69 (0.40, 1.18)	92	0.75 (0.47, 1.21)
Post secondary (n=127)	38	1.18 (0.65, 2.15)	36	1.02 (0.55, 1.89)	37	0.45 (0.25, 0.80)**
p for trend		0.75		0.29		0.03
Work Status						
Employed (n=461)	139	1 (ref)	124	1 (ref)	183	1 (ref)
Not employed (n=130)	51	1.35 (0.83, 2.20)	27	0.98 (0.55, 1.72)	76	1.83 (1.13, 2.97)*
Marital Status						
Not married (n=198)	62	1 (ref)	43	1 (ref)	65	1 (ref)

Married (n=393)	128	0.92 (0.54, 1.55)	108	1.36 (0.78, 2.38)	194	1.98 (1.19, 3.30)**
Fruit and vegetable intake						
<2 servings/day (n=310)						
2+ servings/day (n=281)	89	1 (ref)	71	1 (ref)	132	1 (ref)
	101	1.10 (0.75, 1.62)	80	1.24 (0.81, 1.89)	127	0.98 (0.67, 1.44)
Currently smoke						
No (n=468)	152	1 (ref)	111	1 (ref)	200	1 (ref)
Yes (n=123)	38	0.94 (0.58, 1.53)	40	1.36 (0.84, 2.21)	59	1.30 (0.83, 2.05)
Body Mass Index, kg/m^2		1.00 (0.97, 1.04)		1.06 (1.01, 1.10)**		1.00 (0.96, 1.03)

a. Odds ratio and 95% Confidence interval from logistic regression, adjusted for all other variables in the table, weighted to the Sur City Population, 2003. All ns presented are unweighted n within the sample

b. Participants classified as "Inactive" according to domain as follows: Work: lowest quartile; Transport and Leisure: no physical activity.

* $p<0.05$

** $p<0.01$

Table 3. Correlates of domain-specific physical inactivity in Omani women (n=744) [a] [b]

	Work		Transport		Leisure	
	n (Inactive)	OR (95% CI)	n (Inactive)	OR (95% CI)	n (Inactive)	OR (95% CI)
Age						
20 – 29 years (n=266)	40	1 (ref)	106	1 (ref)	162	1 (ref)
30 – 39 years (n=272)	40	1.09 (0.63, 1.88)	88	0.77 (0.52, 1.16)	169	1.09 (0.73, 1.65)
40+ years (n=206)	57	2.29 (1.14, 4.58)*	62	0.91 (0.52, 1.59)	149	1.56 (0.86, 2.82)
p for trend		0.03		0.44		0.32
Education						
Less than Secondary (n=321)	71	1 (ref)	96	1 (ref)	225	1 (ref)
Secondary (n=157)	34	1.64 (0.77, 3.50)	49	0.97 (0.53, 1.76)	99	1.37 (0.73, 2.55)
Post secondary (n=266)	32	1.25 (0.49, 3.17)	111	1.55 (0.81, 2.98)	156	1.25 (0.63, 2.48)
p for trend		0.39		0.24		0.62
Work Status						
Employed (n=310)	37	1 (ref)	121	1 (ref)	178	1 (ref)
Not employed (n=434)	100	1.71 (0.88, 3.35)	135	1.01 (0.60, 1.70)	302	1.84 (1.08, 3.13)*
Marital Status						
Not married (n=315)	61	1 (ref)	110	1 (ref)	195	1 (ref)

Married (n=429)	76	0.67 (0.43, 1.04)	146	1.26 (0.87, 1.82)	285	1.13 (0.78, 1.64)
Fruit and vegetable intake						
<2 servings/day (n=361)	73	1 (ref)	105	1 (ref)	254	1 (ref)
2+ servings/day (n=383)	64	0.91 (0.59, 1.39)	151	1.31 (0.92, 1.85)	226	0.63 (0.45, 0.90)*
Body Mass Index, kg/m^2		1.01 (0.99, 1.04)		0.99 (0.97, 1.02)		1.000 (0.97, 1.03)

a. Odds ratio and 95% Confidence interval from logistic regression, adjusted for all other variables in the table, weighted to the Sur City Population, 2003. All ns presented are unweighted n within the sample

b Participants classified as "Inactive" according to domain as follows: Work: lowest quartile; Transport and Leisure: no physical activity.

* $p<0.05$

Table 4. Correlates of Sitting Time (natural logs) in Omani men and women[a]

	N^b	Men exp(b) (95% CI) [a]	N^c	Women exp(b) (95% CI) [a]
Age				
20 – 29 years	197	1 (ref)	266	1 (ref)
30 – 39 years	177	1.07 (0.88, 1.28)	272	0.81 (0.69, 0.94)**
40+ years	217	1.04 (0.83, 1.31)	206	0.71 (0.57, 0.88)**
p for trend		0.688		0.001
Education				
Less than Secondary	243	1 (ref)	321	1 (ref)
Secondary	221	1.20 (0.98, 1.46)	157	0.85 (0.68, 1.06)
Post secondary	127	1.32 (1.06, 1.65)*	266	0.99 (0.76, 1.29)
p for trend		0.013		0.962
Work Status				
Employed	461	1 (ref)	310	1 (ref)
Not employed	130	1.03 (0.87, 1.22)	434	1.49 (1.18, 1.89)**
Marital Status				
Not married	198	1 (ref)	315	1 (ref)
Married	393	1.08 (0.91, 1.29)	429	0.99 (0.85, 1.15)
Fruit and vegetable intake				
<2 servings/day	310	1 (ref)	361	1 (ref)
2+ servings/day	281	0.98 (0.85, 1.13)	383	0.91 (0.79, 1.05)
Body Mass Index, kg/m^2	591	1.00 (0.99, 1.02)	744	1.01 (1.00, 1.02)*

a. Regression coefficient, back-transformed from the log scale weighted to the Sur City Population, 2003;

  represents the ratio of sitting time relative to the referent group (categorical variables) or of a one unit increase

  (continuous variables)

b. Unweighted N

* p<0.05

**p<0.01