A SEDENTARY BEHAVIOUR SURVEY AMONGST SHOPKEEPERS IN DAKSHIN KANNADA: A CROSS SECTIONAL STUDY

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ABSTRACT

Introduction: Most of the lifestyle diseases have relationship between the development of non-communicable diseases and the interactions between the environment, genetic predisposition and lifestyle. This study aimed is to analyze the prevalence of sedentary behaviour and associated factors amongst shopkeepers.

Methods: A cross-sectional study was conducted amongst shopkeeper to relate socio-demographic variables and lifestyle risk factors with sedentary behaviour from Jan 2015 to march 2015.Total 184 were participated in the study. The statistical tests were done by using SPSS, Version 20 data analysis system and P value was obtained.

Results: This study revealed that Gender (p=0.010), education(0.024), BMI(0.012), Past Illness (0.002) and chronic illness in family(0.026) is significantly associated with type of lifestyle. Females (OR= 3.044, Cl: 1.458-6.352) and Obesity (OR=2.707; 95% Cl:1.291-5.675) were associated with an increased likelihood of exhibiting sedentary lifestyle, but presence of past history (OR=0.065;95% Cl: 0.013-0.321) and graduated participants (OR=0.343; 95% Cl: 0.170-0.691) were associated with a reduction in the likelihood of exhibiting sedentary lifestyle.

Conclusion: Gender, education, BMI, Past Illness and chronic illness in family is significantly associated with type of lifestyle. Females, Obesity and chronic illness in family are having positive correlation with sedentary lifestyle.

Key words: sedentary lifestyle, shopkeepers.

INTRODUCTION

Lifestyles of populations across the world have changed dramatically in the 20th century. With increasing tobacco and alcohol use, these changes have fuelled the epidemic of obesity, diabetes, hypertension, dyslipidaemia and CVD.[1] Chronic non-communicable diseases are largely due to preventable and modifiable risk factors.[2] It is expected that by 2020 in developing countries, non communicable diseases (NCDs) will account for 69% of all deaths, with cardiovascular diseases in the lead.[3]Acording to who report 2012 distribution of years lost by non communicable diseases is highest(44%) than communicable (41%) and injuries(14%).[4] The projected cumulative loss of national income for India due to non-communicable disease mortality for 2006–2015 is expected to be USD237 billion. By 2030, this productivity loss is expected to double to 17.9 million years lost.[5] Global trends indicate, urban populations in low- and middle-income countries face a *triple health burden*, which will be exacerbated in the future.[6]

Sedentary behaviour refers to activities involving energy expenditure equivalent to 1.0–1.5 metabolic equivalent units, 1 and includes <150 minutes of moderate physical activity or <60 minutes of vigorous activity per week.[7,8] Environment plays a major role in influencing the physical activity through significant changes in the form of rapid urbanization, automobile dominance for the personal travel, introduction of labor-saving devices in the home and the workplace.[9] These changes have had a remarkable lifestyle transformation by reducing the daily life physical requirements and encouraging sedentary lifestyles which consequently lead to an epidemic of non communicable diseases and contributes substantially to the global burden of disease, disability and death.[10]

Timely interventions in those stages of development in which environmental conditions shift and common modifiable risk factors emerge may help prevent and control chronic disease. A greater understanding of these relationships may help us identify interventions that are most likely to be effective in preventing NCDs in countries undergoing rapid urbanization and improve our capacity to stem the rapid increase in NCDs.[11]

The aim of the study is to analyze the prevalence of sedentary behavior and associated factors amongst shopkeepers residing at Suratkhal, Manglore, Karnataka.

MATERIALS AND METHODS

The present study was cross-sectional study to evaluate the prevalence of sedentary behaviour among shopkeepers with sedentary lifestyle with using exercise/lifestyle questionnaire a pretested, self-designed, semi structured, oral, interview based questionnaire which is interviewed in vernacular (Kannada, Tulu) language with informed written consent. The study duration was from Jan 2015 to march 2015.The sample collected was by simple random sampling technique. There are 60 urban wards in Manglore, out of that Surthkal south was selected by lottery method. Total 214 shops in the area and 184 were participated in the study. The instruments used in this study were height stand (Accurate up to 1cm), measuring tape (Accurate upto 1cm), and weighing machine (Accurate upto 0.5kg) .All the instruments and techniques were initially standardized during pilot study and were regularly standardized throughout the period of data collection. The data was collected and tabulated in Microsoft excel. The statistical tests were done by using SPSS, Version 20 data analysis system and P value was obtained.

Physical activity assessment: The Johnson Space Centre (JSC) physical activity scale was used to assess the participant activity level over the preceding three months.[12] This 8-point Likert scale consist of the following score choices:

0: Avoid physical activities whenever possible;

1: Light physical activities done occasionally;

2: Moderate physical activities done regularly for less than 1 hour per week;

3: Moderate physical activities done regularly for more than 1 hour per week;

4: Heavy physical activities done regularly for less than 30 minutes per week;

5: Heavy physical activities done regularly between 30 and 60minutes per week;

6: Heavy physical activities done regularly between 1 and 3hours per week; and

7: Heavy physical activities done regularly for more than 3hours per week.

The participants were asked to select the appropriate score (0 to 7) which best described their general physical activity level. Participants who selected a score of either 0 or 1 were classified as sedentary because these activity values represent either no physical activity or an insufficient and inconsistent amount of physical activity that was far below the minimum recommendations. Those participants who selected a score of 2 or higher were classified as non- sedentary because these activity levels either approach or exceed the recommendations.[13]

Measurements: Height was determined using a wall mounted non extendable measuring tape with subjects standing in an erect barefoot position, arms by side, and feet together with 0.1cm precision. Weight measurements were taken with each subject standing at the centre of the weighing scale in light clothing with no shoes and socks with 0.5kg precision. Weight was divided on the basis of consensus statement: Normal weight (18.00-22.99kg/m2), Overweight (23.00-24.99kg/m2) and Obesity (>25.00kg/m2). [14]

RESULTS

A statistically significant sedentary lifestyle and active was observed in men and women (p=0.01). The study further observed subjects with low and high level of education leads a statistically significant sedentary and active lifestyle (p=0.047). The participants in study were seen active as increase in age (69.2%).

Subjects belonging to class I (according to modified BG Prasad's classification) socioeconomic status reported physically active lifestyle (68.1%) as compared to their counterparts (31.9%).

Table 1: Socio-demographic Variables in all study subjects

Category	Sedentary (n=82) (%)	Non sedentary (n=102) (%)	P Value
Age in yrs %(n)			
10-30	36 (43.9)	31 (30.4)	0.134
30-60	42 (51.2)	62 (60.8)	
>60	4 (4.9)	9 (8.8)	
Gender			
Female	32 (39)	22 (21.6)	0.010 *
Male	50 (61)	80 (78.4)	
Education			
Below graduate*	61 (74.4)	62 (60.8)	0.024 *
Graduation	41 (50)	20 (19.6)	
Per capita Income			
Class I	15 (18.3)	32 (31.4)	0.112
Class II	46 (56.1)	51 (50)	
Class III	21 (25.6)	19 (18.6)	

*p<0.05; *Primary & Secondary

Table 2: Comparison of the lifestyle risk factors in sedentary and non sedentary subjects

Category	Sedentary (n=82) (%)	Non sedentary (n=102) (%)	P Value
BMI			
Underweight	13 (15.9)	06 (5.9)	0.012*
Normal weight	40 (48.8)	70 (68.6)	
Overweight	29 (35.4)	26 (25.5)	
Addiction			
Non Addicted	74 (90.2)	92 (90.2)	0.991
Addicted	08 (9.8)	10 (9.8)	
Job setting			
Sedentary	47 (57.3)	53 (52)	0.893
Limited activity	29 (35.4)	40 (39.2)	
Active	05 (6.1)	07 (6.9)	
Strenous	01 (1.2)	02 (2)	
Past History			
Absent	80 (97.6)	85 (83.3)	0.002*
Present	02 (2.4)	17 (16.7)	
Family History			
Absent	61 (74.4)	50 (49)	0.026*
Present	41 (50)	32 (31.4)	

*P<0.05

As depicted in table no.2 there is significant predisposition (p=0.012) found amongst sedentary and active lifestyle with Body Mass Index. Similarly there is significant association with past illness and type of lifestyle (p=0.002). The prevalence of sedentary and active lifestyle was approximately the same among both non addicted (sedentary: 44.6%; active:55.4%%) and addicted subjects (sedentary: 44.4%; active: 55.6%), respectively. There was slightly more prevalence observed amongst non-sedentary job setting (active-53%,sedentary-47%).The results shown by family history associated with chronic illness and life style adopted by participants was statistically significant (p<0.05).

Table 3: Association of gender, education, BMI, past history and family history with sedentary life style by logistic regression

Variables	Adjusted OR	95% Cl	p
Gender			
Male	Ref	Ref	0.003
Female	3.044	1.458-6.352	
Education			
Below graduate*	Ref	Ref	0.003
Graduation	0.343	0.170-0.691	
Body Mass Index			
Non-obese	Ref	Ref	0.008
Obese	2.707	1.291-5.675	
Past History			
Absent	Ref	Ref	0.001
Present	0.065	0.013-0.321	
Family History			
Absent	Ref	Ref	0.322
Present	1.404	0.718-2.747	

Ref=Reference category; *Primary & Secondary

A logistic regression was performed to ascertain the effects of gender, education, BMI, past history and family history on the likelihood that participants have sedentary lifestyle. The model explained 22.9% (Nagelkerke R^2) of the variance in sedentary lifestyle and correctly classified 67.9% of cases. Females were 3.044(Cl: 1.458-6.352) times more likely to exhibit sedentary lifestyle than males. Obesity (OR=2.707; 95% Cl:1.291-5.675) was associated with an increased likelihood of exhibiting sedentary lifestyle, but presence of past history (OR=0.065;95% Cl: 0.013-0.321) and graduated participants (OR=0.343; 95% Cl: 0.170-0.691) were associated with a reduction in the likelihood of exhibiting sedentary lifestyle. The small sample size of this study may have accounted for the wide confidence intervals observed.

DISCUSSION

People at work face a variety of hazards owing to several factors including adverse ergonomic conditions, physical and psychosocial factors. The present study assessed the prevalence of sedentary lifestyle among shopkeepers in Suratkhal town, Manglore, Karnataka; where sedentary lifestyle was found prevalent among 44.6% of the study population. Similarly, Varo et al.[15] has found sedentary lifestyles ranged between 43.3% (Sweden). WHO has stated that men are physically more active than women globally and the prevalence of insufficient physical activity, ie not meeting the WHO recommended physical activity guideline in South East Asia is lowest among all WHO regions with 15% for men and 19% for women[16]. The current study reported an increase in sedentary lifestyle as age advances and more prevalent in 30-60

age group, similar results are seen in Kaur J. et al [17]study. Such result may be because of the less time available for physical exercise in subjects younger than 60 years due to involvement in jobs and/or raising and looking after their family members. A statistically significant active and sedentary lifestyle with positive relation was observed in men and women has been found consistence to Cabrera de León et al.[18] This result may be because women spent more time doing household activities than leisure time physical activities.

There was negative correlation between sedentary lifestyle and education. Participants with higher educational level were more likely to exercise regularly than participants with lower education level in Win et al study [19], which was conversely found in this study with significant difference. Sedentary lifestyle was more prevalent in upper social class than middle class subjects in the current study. This may be because Participants with lower education and lower income may work in the employment sectors where more work-related activity is needed, which may contribute to their overall physical activity.

The present study revealed that the prevalence of obesity was higher among shopkeepers with positive association which was also seen in Sabale et al. study[20].There was significant difference found in past history and family history with type of lifestyle, amongst which past history showed negative correlation. This may be due to participants suffering from past illness adapted active lifestyle as advice given by health practitioners and health education. However, a higher prevalence of sedentary lifestyle was found with presence of family history may be because of health ignorance and lack of knowledge about the importance of healthy lifestyle and activities related with improvement of risk factors associated with chronic diseases was not practiced.

Study Limitations: Limitations of study were that this study was cross sectional study having small sample size, might not reflect the situation of community. Physical activity can be assessed subjectively using self-reported questionnaire.

CONCLUSION

This study revealed that Gender, education, BMI, Past Illness and chronic illness in family is significantly associated with type of sedentary lifestyle. As females, Obesity and chronic illness in family is having positive correlation with sedentary lifestyle should be taken into account to identify at-risk groups and develop strategies to discourage this behavior. Work place strategies to reduce sedentary behaviors could be another promising approach to improve energy balance in amongst shopkeepers. Finally efforts should be made to develop effective and feasible public health interventions aimed at relevant population groups and settings.

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