Research Article

Occupational Sedentary Lifestyle and its Association with Dietary Habits and BMI in Urban Shopkeepers

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ABSTRACT
Background: Sedentary lifestyle is a growing public health concern, particularly in urban populations where occupational settings encourage prolonged inactivity. Shopkeepers, counterpersons, and office workers are especially vulnerable due to long hours of sitting and limited physical activity. **Objective:** To determine the effect of sedentary lifestyle on dietary habits and health status among shopkeepers and to analyze correlations with BMI. **Methods:** A cross-sectional study was conducted among 211 shopkeepers in Mangalore using a structured questionnaire. Data on sedentary indicators (watching TV, exercise, job setting, activity level) and diet variables (fast food intake, skip meals, binge eating, snacking) were collected along with anthropometric measures. Frequencies, percentages, and Pearson correlations were calculated. **Results:** Sedentary behaviors were highly prevalent, with 54.5% reporting sedentary job settings and 70.6% not engaging in regular exercise. Fast food consumption was reported by 35.1% and binge eating by 26.5%. BMI analysis revealed 42% of participants were overweight or obese. Watching TV correlated positively with fast food intake (r = 0.42) and BMI (r = 0.36). Exercise correlated negatively with skip meals (r = -0.31) and BMI (r = -0.29). **Conclusion:** Sedentary lifestyle among shopkeepers is strongly associated with unhealthy dietary practices and elevated BMI. Workplace interventions promoting physical activity and healthy eating are urgently needed.

Keywords: Shopkeeper, Sedentary, BMI, Healthy Eating, Unhealthy Dietary Practices.

INTRODUCTION

Lifestyles of populations across the world have changed dramatically in the 20th century. These changes, collectively termed as epidemiological transition, have been brought about by developments in science and technology that now affect every facet of human existence. Most human societies have moved from standard healthy diets and active lives to fast foods and sedentary habits. Combined with increasing tobacco and alcohol use, these changes have fuelled the epidemic of obesity, diabetes, hypertension, dyslipidaemia and cardiovascular disease (1).

Chronic non-communicable diseases are largely due to preventable and modifiable risk factors such as high blood cholesterol, high blood pressure, obesity, physical inactivity, unhealthy diet, tobacco use and inappropriate use of alcohol (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). According to WHO report 2012, distribution of years lost by non-communicable diseases is highest (44%) compared to 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 USD 237 billion. By 2030, this productivity loss is expected to double to 17.9 million years lost (5).

The urban environment in low- and middle-income countries represents a crucible in many respects. Urban populations face a triple health burden, which will be exacerbated in the future (6). Sedentary behavior refers to activities involving energy expenditure equivalent to 1.0–1.5 metabolic equivalent units, 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 physical activity through rapid urbanization, automobile dominance for personal travel, and labor-saving devices in the home and workplace (9). These changes have transformed lifestyles by reducing daily physical requirements and encouraging sedentary habits, leading to an epidemic of non-communicable diseases (10). Timely interventions in stages of development where environmental conditions shift and modifiable risk factors emerge may help prevent and control chronic disease. Identifying these crucial stages and determining what elements of urbanization are linked to risk factors can help design effective interventions. Thus, our aim was to determine the effect of sedentary lifestyle on health status among shopkeepers and to advise appropriate measures (11).

MATERIALS AND METHODS
Study Design and Setting:
This was a cross-sectional study conducted to assess the prevalence of health conditions among shopkeepers, counterpersons, and office workers with sedentary lifestyles. The study was carried out in Mangalore city between January and March 2015. Out of 60 urban wards, Surathkal South was selected by lottery method.

Sample Size and Participants:
There were 250 shops in the selected ward, of which 211 shopkeepers consented to participate. Participants were recruited using simple random sampling by selecting them from urban area by lottery method. Written informed consent was obtained prior to data collection.

Data Collection Tools:
A pre-designed and pre-tested structured questionnaire was administered through personal interviews. The questionnaire captured information on sociodemographic characteristics, sedentary lifestyle indicators (watching television, exercise habits, job setting, activity level), dietary practices (home meals, fast food intake, skipping meals, binge eating, snacking), and family health history.

Anthropometric Measurements:
Height was measured using a standardized height stand accurate to 1 cm, and weight was recorded using a weighing machine accurate to 0.5 kg. A measuring tape accurate to 1 cm was used for additional anthropometric checks. All instruments were standardized during a pilot study and recalibrated regularly throughout data collection. BMI was calculated as weight (kg) divided by height (m²).

Quality Control:
The questionnaire was pilot-tested for reliability and validity. Instruments were standardized before and during the study to ensure accuracy.

Data Management and Statistical Analysis:
Data were tabulated in Microsoft Excel and analysed using SPSS version 20. Descriptive statistics (frequency and percentage) were used to summarize sedentary lifestyle and dietary variables. Pearson correlation coefficients were calculated to assess associations between sedentary lifestyle indicators, dietary practices, and BMI. A p-value <0.05 was considered statistically significant.

RESULTS:

Table 1. Frequency and Percentage of Sedentary Lifestyle Indicators among Shopkeepers

Variable	Category	Frequency	Percentage (%)
Watching TV	Yes	62	29.4
	No	149	70.6
Exercise	Yes	88	41.7
	No	123	58.3
Job Setting	Sedentary	115	54.5
	Active	96	45.5
Activity Level	Low	102	48.2
	Moderate	78	36.9
	High	31	14.7

It has been seen in Table 1 that a majority of shopkeepers reported sedentary lifestyle indicators, with more than half (54.5%) engaged in sedentary job settings and nearly two-thirds (58.3%) not performing regular

exercise. This highlights the predominance of inactivity in the study population.

Table 2. Frequency and Percentage of Diet Variables among Shopkeepers

Variable	Category	Frequency	Percentage (%)
Fast Food	Yes	74	35.1
	No	137	64.9
Skip Meals	Yes	81	38.5
	No	130	61.5
Binge Eating	Yes	56	26.5
	No	155	73.5
Snacking	Yes	142	67.4
	No	69	32.6

As depicted in Table 2, unhealthy dietary practices were also common, with 35.1% consuming fast food, 38.5% skipping meals, and 26.5% engaging in binge eating, while snacking was reported by 67.4% of participants.

Table 3. BMI Category Distribution among Shopkeepers

BMI Category	Frequency	Percentage (%)
Underweight (<18.5)	21	9.9
Normal (18.5–24.9)	101	47.9
Overweight (25–29.9)	58	27.4
Obese (≥30)	31	14.8
Total	211	100.0

Table 3 shows that 42% of shopkeepers were overweight or obese, underscoring the burden of excess weight in this occupational group.

Table 4.Correlation Matrix between Sedentary Lifestyle (Independent) and BMI/Diet (Dependent) Variables (Total Sample = 211)

Independent Variable	Frequency	Percentage (%)	Dependent Variable	Frequency	Percentage (%)	Correlation (r)
Watching TV	62	29.4	Fast Food Intake	74	35.1	0.42
Watching TV	62	29.4	BMI – Overweight/ Obese	89	42.0	0.36
No Exercise	123	58.3	Skip Meals	81	38.5	-0.31
No Exercise	123	58.3	BMI – Overweight/ Obese	89	42.0	-0.29
Job Setting – Sedentary	115	54.5	Binge Eating	56	26.5	0.35
Activity Level – Low	102	48.2	BMI – Overweight/ Obese	89	42.0	-0.34
Fast Food Intake	74	35.1	BMI – Overweight/ Obese	89	42.0	0.41
Binge Eating	56	26.5	BMI – Overweight/ Obese	89	42.0	0.33

Finally, as presented in Table 4, significant correlations were observed: watching television was positively associated with fast food intake (r = 0.42) and BMI (r = 0.36), while lack of exercise correlated negatively with both skipping meals (r = -0.31) and BMI (r = -0.29). Fast food intake (r = 0.41) and binge eating (r = 0.33) were also positively correlated with BMI, reinforcing the link between sedentary lifestyle, poor diet, and obesity.

DISCUSSION

This study highlights the strong association between sedentary lifestyle behaviors and unhealthy dietary practices among shopkeepers. Watching television was positively correlated with fast food intake (r = 0.42) and higher BMI (r = 0.36), consistent with evidence that prolonged screen time contributes to poor dietary choices and obesity risk (1,2).

Exercise showed a protective effect, with negative correlations observed between lack of exercise and both skipping meals (r = -0.31) and BMI (r = -0.29). These findings support prior research demonstrating that regular physical activity reduces disordered eating and helps maintain healthy body weight (7,12). Similarly, low activity levels were inversely correlated with BMI (r = -0.34), reinforcing the role of physical activity in mitigating obesity and cardiovascular risk (6).

Dietary behaviors such as fast food consumption and binge eating were strongly linked to BMI. Fast food intake correlated positively with overweight/obesity (r = 0.41), while binge eating showed a moderate positive correlation (r = 0.33). These results align with global literature indicating that high-calorie diets, irregular meal patterns, and binge episodes contribute significantly to metabolic syndrome and cardiovascular disease (8,9,12).

The prevalence of overweight and obesity in this study (42%) mirrors national trends in urban India, where sedentary occupations and dietary transitions are driving the epidemic of non-communicable diseases (3,5). Shopkeepers, due to their occupational setting, represent a high-risk group requiring targeted interventions. Workplace health promotion, including structured exercise programs, nutritional counseling, and awareness campaigns, could help reduce these risks.

Limitations: The cross-sectional design restricts causal inference, and reliance on self-reported dietary behaviors may introduce recall bias. However, the consistency of findings with established literature strengthens the validity of the observed associations.

Implications: Regular screening for BMI and lifestyle counseling should be incorporated into occupational health programs for shopkeepers and similar sedentary professions. Public health strategies focusing on reducing fast food consumption and promoting physical activity are urgently needed.

CONCLUSION

Sedentary lifestyle among shopkeepers is prevalent and significantly associated with poor dietary habits and increased BMI. Watching television and sedentary job settings were linked to fast food intake and binge eating, while lack of exercise and low activity levels were associated with higher BMI. These findings emphasize the urgent need for workplace-based interventions, including exercise promotion and dietary counseling, to reduce the burden of non-communicable diseases in this vulnerable occupational group.

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