Association between Style of Living and General Health in Suburban Women: A Cross-sectional Study in South East of Iran

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ABSTRACT

Introduction: In developing countries, suburban population is increasing. However, their health issues are rarely considered in studies. Socioeconomic and environmental factors in their neighbourhood can affect their lifestyle and health. Compared to men, women have fewer social resources and are more susceptible to an unfavourable environment, in general.

Aim: To investigate the association between lifestyle and general health status in suburban women.

Materials and Methods: This correlation, cross-sectional study assessed the lifestyle and general health, among suburban women living in Shirabad neighbourhood, Zahedan, Iran. Randomized one stage cluster sampling was used and 132 people participated in the study. Lifestyle Questionnaire (LSQ) and General Health Questionnaire-28 (GHQ-28) were used for data collection. For data analysis, descriptive statistical methods, Pearson's correlation coefficient and multivariate regression analysis were performed.

Results: Mean score of LSQ was 100.23±20.45 and mean GHQ-28 score was 28.46±16.41. There was a significant negative relationship between lifestyle and GHQ-28 total score (r=-0.619, p=0.01). Multivariate regression analysis showed that among predictor variables, education, sports and fitness and psychological health components had a significant relationship with GHQ-28 (p<0.001, p=0.01, p=0.002 respectively).

Conclusion: This study demonstrated that suburban women have poor lifestyle and health status. Also, it showed a significant relationship between education, sports and fitness and psychological health components and health. As a result, implementation of programs to modify lifestyle especially in the field of sports and improving the educational level could be useful in promoting women's health.

INTRODUCTION

Lifestyle is one of the most important factors affecting health. It is a combination of individual and group activities and habits, that are influenced by cultural, socioeconomic factors and personality of individuals [1]. Healthy lifestyle will lead to health promotion, compliance with the stresses of life, improved quality of life and reduction in health problems and their consequences [2]. Socioeconomic and environmental status of a person are associated with lifestyle and health. Studies in developed countries have shown that social and environmental factors such as income, neighbourhood, and ethnicity leads to a difference in individual levels, such as education and employment. Individual differences in the use of healthy behaviours and their outcomes are effective [3].

Socioeconomic factors have changed during urbanization and globalization [4]. In recent years, urbanization has significantly increased [5-8]. One of the products of urbanization is suburbanization phenomenon [9]. Today, in poor countries rapid rise of suburbia is a serious challenge for communities and policy makers [10]. Iran is involved with challenge of suburbanization. The population of the suburban people in Iran in 2015 was 10280270. Zahedan is a city in South-East Iran that faced the problem of suburbanization. In 2015, 422149 people were inhabited in suburban areas of Zahedan [11].

There are few studies in health and lifestyle field of suburban population. Studies in India and Nepal showed unhealthy lifestyle (such as: smoking, alcohol consumption, sedentary life, irregular consumption of vegetables and fruits and high intake of salt) which is very common in suburban population [12,13]. Taka T and Tragler A showed inappropriate lifestyle in suburban women of Mumbai. A 92% of participants in their study did not exercise [14]. A study in Ghana showed that the general health in suburban women was significantly lower than urban women [15].

The socioeconomic situation of suburbanites (for example: poverty, inadequate housing, lack of security, unemployment and low income) and poor infrastructure can hinder the acquisition of healthy lifestyle and lead to harmful effects on the health [9,16]. Compared to men, women have fewer social and environmental resources and as a result their health can be affected by an unfavourable environment [17]. Considering that only few studies have addressed the problems of suburban women, more studies are required to be done in this vulnerable group.

To our knowledge, association between lifestyle and health in suburban population has not been yet investigated in Iran. Despite the fact that women are half of the total population, there is no information about the lifestyle and health of suburban women of Zahedan. Hence, the aim of this study was to assess the association between lifestyle and general health in suburban women of Zahedan.

MATERIALS AND METHODS

This research was a correlation, cross-sectional study in suburban women of Shirabad, Zahedan, Iran. Morgan table was used to determine the sample size [18]. The sample size was calculated as 132 people. This study was conducted between August and November 2016. In order to select the sample, single stage cluster sampling method was used. A comprehensive health service center was randomly selected among 10 comprehensive health service centers in Shirabad area.

Inclusion criteria: married women, age 15 to 49 years and living in suburban area.

Exclusion criteria: participants suffering from any disease that required any specific lifestyle modification.

The Ethical Committee of Shahid Beheshti University of Medical Sciences had approved the study (No.ir.sbmu.retech.rec.1395.244). Aims and methods of the study were explained to the participants, and written informed consent was received from each participant prior to the study. In order to check the inclusion and exclusion criteria of the study, self reported method was used.

LSQ and GHQ-28 were used for data collection [19,20], and were completed through face to face interviews.

LSQ was used to determine the lifestyle. LSQ consists of 10 components (physical health, sports and fitness, weight control and nutrition, prevention of diseases, psychological health, spiritual health, social health, avoiding drugs and alcohol, prevention of accidents, and environmental health), and 70 questions on a Likert scale which were scored as never (0), sometimes (1), often (2), and always (3). High scores in each one of the components and the whole questionnaire indicate a suitable lifestyle. LSQ is a Persian questionnaire. This questionnaire was developed by Lali, Abedi and Kajbaf and its validity and reliability were approved. Cronbach's alpha of LSQ was reported to be between 0.76 and 0.89 and its reliability coefficient was between 0.84 and 0.94 [19].

General health was measured by the GHQ-28. GHQ-28 consists of four subscales (somatic symptoms, anxiety-insomnia, social dysfunction, and severe depression) and 28 items. Scoring items of this questionnaire are based on Likert scale (0,1,2,3) [21]. In this study, Persian version of GHQ-28 was used and its reliability and validity were investigated by Nazifi and Mokarami. Cronbach's alpha of Persian version of GHQ-28 was reported between 0.74 and 0.92. In any subscale, score ≥ 7 and total scale score ≥ 23 indicate disease symptoms [20].

STATISTICAL ANALYSIS

Statistical analysis was performed using software SPSS-19.0. Frequencies, percent frequencies, mean, and standard deviation was used to describe demographic variables, lifestyle and general health score. Pearson's correlation coefficient and multivariate regression analysis were used to assess the association between the lifestyle and general health status score. The statistical significance level was set at p<0.05.

RESULTS

A total of 132 women participated in this study. Sociodemographic characteristics of participants are presented in [Table/Fig-1]. Mean age was 26.54±6.65 years, and mean age of their husbands was 31.96±8.12 years. Mean Body Mass Index (BMI) of subjects was 24.21±5.08 kg/m^2 and 50% of them had normal weight (BMI: 18.5–24.9 kg/m^2) [Table/Fig-1].

Economic situation: To assess the economic situation, the questionnaire had two options: Inappropriate and appropriate. Each person selected an option as their economic situation.

The mean total score of lifestyle was 100.23±20.45. Prevention of disease component had the highest mean (13.81±2.63) while sports and fitness component had the lowest mean (4.49±3.37) [Table/Fig-2].

The mean GHQ-28 total score was 28.46±16.41. Somatic symptoms component had the highest mean (9.12±6.47) while severe depression component had the lowest mean (5.28±5.49). More than half of participants (58.3%) had disease symptoms [Table/Fig-3].

Pearson's correlation coefficient analysis was used to assess the association between the lifestyle and general health status score.

Socio-demographic characteristics	Number (%)
Education	
Illiterate	36 (27.3%)
Primary	83 (62.9%)
High school	13 (9.8%)
Employment status	
Housewife	127 (96.2%)
Employed	5 (3.8%)
Husband's education	
Illiterate	30 (22.7%)
Primary	70 (53.1%)
High school	32 (24.2%)
Employment status of husband	
Unemployed	27 (20.5%)
Employed	105 (79.5%)
Economic situation (subjective evaluation)	
Inappropriate	78 (59.1%)
Appropriate	54 (40.9%)
Body mass index (kg/m²)	
< 18.5	14 (10.6%)
18.5–24.9	66 (50%)
25–29.9	32 (24.2%)
30≤	20 (15.2%)

[Table/Fig-1]: Sociodemographic characteristics of participants.
Economic situation: To assess the economic situation, the questionnaire had two options: Inappropriate and appropriate. Each person selected an option as their economic situation.

Component variable	Mean± SD
Physical health	11.56± 3.60
Sports and fitness	4.49±3.37
Weight control and nutrition	8.75±4.12
Prevention of diseases	13.81±2.63
Psychological health	9.98±3.57
Spiritual health	9.36±3.54
Social health	10.33±3.38
Avoiding drugs and alcohol	13.04±2.97
Prevention of accidents	6.84±2.75
Environmental health	12.03±3.28
Lifestyle	100.23±20.45

[Table/Fig-2]: Descriptive statistics of lifestyle components of participants.

GHQ-28 subscale	Mean±SD	Healthy Number (%)	unhealthy Number (%)
Somatic symptoms	9.12±6.47	53 (40.2%)	79 (59.8%)
Anxiety-Insomnia	7.21±5.46	63 (47.7%)	69 (52.3%)
Social dysfunction	6.78±3.92	65 (49.2%)	67 (50.8%)
Severe depression	5.28±5.49	89 (67.4%)	43 (32.6%)
GHQ-28 total scale	28.46±16.41	55 (41.6%)	77 (58.3%)

[Table/Fig-3]: Descriptive statistics of general health of participants.

As shown in [Table/Fig-4], a negative significant correlation existed between lifestyle and GHQ-28 total score.

To estimate the effect of lifestyle components on general health score, multivariate regression analysis was used.

According to the results presented in [Table/Fig-5], among the items entered into the multivariate regression analysis, the beta coefficient was significant in education, sports and fitness, and psychological health. As a result among the regression predictor variables, education, sports and fitness and psychological health components can reversely predict the GHQ score [Table/Fig-5].

GHQ Variables of lifestyle	Physical health	Sports and fitness	Weight control and nutrition	Prevention of diseases	Psychological health	Spiritual health	Social health	Avoiding drugs and alcohol	Prevention of accidents	Environmental health	Lifestyle	GHQ-28 total scale
Physical health	1											
Sports and fitness	0.548**	1										
Weight control and nutrition	0.297**	0.167	1									
Prevention of diseases	0.318**	0.368**	0.456**	1								
Psychological health	0.509**	0.363**	0.376**	0.540**	1							
Spiritual health	0.213*	0.145	0.163	0.377**	0.594**	1						
Social health	0.291**	0.096	0.318**	0.304**	0.608**	0.567**	1					
Avoiding drugs and alcohol	0.143	0.250**	0.005	0.191*	0.342**	0.357**	0.384**	1				
Prevention of accidents	0.293**	0.204*	0.238**	0.253**	0.499**	0.256**	0.480**	0.277**	1			
Environmental health	0.175*	-0.091	0.229**	0.084	0.316**	0.378**	0.407**	0.075	0.490**	1		
Lifestyle	0.630**	0.496**	0.556**	0.623**	0.841**	0.661**	0.726**	0.472**	0.630**	0.498**	1	
GHQ-28 total scale	-0.499**	-0.4380	-0.273**	-0.321**	-0.597**	-0.319**	-0.448**	-0.271**	-0.402**	-0.218**	-0.619**	1

[Table/Fig-4]: Correlation matrix for lifestyle component with general health.
**. Correlation is significant at the 0.01 level, *. Correlation is significant at the 0.05 level

Predictors		Univariate regression					Multivariate regression				
		Unstandardized Coefficients	Standardized Coefficients	95% Confidence Interval for B		p-value	Unstandardized Coefficients	Standardized Coefficients	95% Confidence Interval for B		p-value
		B	Beta	Lower Bound	Upper Bound		B	Beta	Lower Bound	Upper Bound	
Age		0.283	0.115	-0.142	0.708	0.19	-0.250	-0.101	-0.589	0.089	0.146
Education	Illiterate	Ref									
	Primary	-13.64	-0.4	-19.72	-7.56	<0.001	-10.595	-0.313	-15.529	-5.660	<0.001
	High school	-11.13	-0.2	-21	-1.27	0.02	-7.242	-0.132	-15.587	1.103	0.088
Husband's education	Illiterate	Ref									
	Primary	-10.95	-0.33	-17.82	4.08	0.22	-	-	-	-	-
	High school	-5.47	-0.14	-13.47	5.52	0.27	-	-	-	-	-
Employment status	Housewife	Ref									
	Employed	15.942	0.186	1.334	30.550	0.033	2.981	0.035	-8.349	14.311	0.603
Employment status of husband	Unemployed	Ref									
	Employed	-8.498	-0.210	-15.379	-1.618	0.016	-4.054	-0.100	-10.556	2.449	0.219
Economic situation	Inappropriate	Ref									
	Appropriate	-8.602	-0.192	0.0	0.0	0.027	3.796	0.114	-1.297	8.888	0.143
Body mass index (kg/m²)		0.045	0.014	-0.515	0.605	0.875	-	-	-	-	-
Physical health		-2.276	-0.499	-2.961	-1.591	<0.001	-0.750	-0.165	-1.543	0.043	0.064
Sports and fitness		-2.128	-0.438	-2.886	-1.370	<0.001	-1.036	-0.213	-1.856	-0.215	0.014
Weight control and nutrition		-1.087	-0.273	-1.752	-0.422	0.002	-0.117	-0.029	-0.737	0.502	0.708
Prevention of diseases		-2.001	-0.321	-3.025	-0.997	<0.001	0.310	0.050	-0.750	1.369	0.564
Psychological health		-2.741	-0.597	-3.380	-2.102	<0.001	-1.649	-0.359	-2.658	-0.639	0.002
Spiritual health		-1.481	-0.319	-2.244	-0.719	<0.001	0.398	0.086	-0.481	1.278	0.372
Social health		-2.173	-0.448	-2.297	-1.420	<0.001	-0.656	-0.135	-1.561	0.249	0.154
Avoiding drugs and alcohol		-1.497	-0.271	-2.418	-0.576	0.002	-0.100	-0.018	-0.938	0.738	0.814
Prevention of accidents		-2.397	-0.402	-3.346	-1.499	<0.001	-0.193	-0.032	-1.246	0.861	0.718
Environmental health		-1.089	-0.218	-1.395	-0.243	0.012	-0.095	-0.019	-0.920	0.729	0.819

[Table/Fig-5]: B and Beta Coefficients, p-values, and confidence interval for predictors of GHQ total.
* In univariate regression analysis, p-value < 0.2 was set as a threshold level of significance to include the variable into the multivariable regression model and in multivariable regression analysis, a p-value < 0.05 was considered statistically significant
By increasing the score of GHQ questionnaire, the health status of the person decreases. The negative Beta in the table shows, there is an inverse relation between GHQ questionnaire score and the level of education of the individual.

DISCUSSION

The aim of this study was to evaluate the relation between lifestyles and general health in suburban women of Shirabad, Zahedan. This study demonstrated that suburban women had poor lifestyle and health status. Also, our findings showed that there was a significant correlation between lifestyle and general health. The regression analysis showed that, among predictor variables, education, sports and fitness and psychological health components can predict general health.

In other Iranian population, average lifestyle has been investigated by LSQ [19,22,23]. In Bandar Abbas oil refining company employees, the mean LSQ was 148.15±13.45 [22], mean of LSQ in samples of Tehran was 142.31±23.14 [23] and in teachers of Isfahan was 145.47±22.01 [19]. In all three studies, the average score of LSQ was higher than the suburban women of Shirabad.

Ardian N et al., in marginal settlers of Yazd showed that mean score of GHQ-28 was 17.04±9.54. Based on the result of this study, twenty three percent of the suburban population of Yazd was placed in the mental disorder group [24]. In suburban Thailand, prevalence of social dysfunction, abnormal somatic symptoms, depression, anxiety and insomnia were 39.7%, 7.4%, 0% and 4.4% respectively [25]. Ghaffari E et al., showed that 40.4% of women and 33.5% of men in poor social district of Gorgan had psychological disorders [26]. Subbaraman R et al., reported that in an Indian slum, 23% of the participants got a score that showed them to be at risk of having a common mental disorder [27]. Compared to other studies, in our study, mean GHQ-28 score was higher [24-26]. Issues such as employment, housing, economic situation, income and poverty in these people were linked with low level of general health [24,26,27].

Results of the present study indicated that, there was a significant correlation between lifestyle and general health. Studies from other parts of Iran and Korea are consistent with the results of our study and showed a significant relationship between lifestyle and general health. In these studies; sleeping hours, nutrition, breakfast consumption, eating habits, balanced mental stress, stress management, smoking, walking and exercise had significant correlation with health status [28,29].

Our results indicated that, education level can predict general health. Many studies have shown a strong relationship between health and education [30,31]. With increasing education level, healthier and longer life is expected [31]. There is a strong link between education, determinants of health and behaviour of the person. People with higher education levels are less likely to have high-risk behaviours. These people are less exposed to high-risk environments and use more prevention services [32]. In our study 77 (58%) people had poor health [Table/Fig-3], 72 of them only had primary education or were illiterate [Table/Fig-1].

Based on our study, sports and fitness component can predict general health. While Roohafza H et al., in a cross-sectional study in Isfahan, stated that physical activity had no association with GHQ score [33]. Nasr-e Azadani Z et al., findings are consistent with the results of the current study. In their study, lifestyle was related with general health and sports was a predictor of general health [34].

Studies show that, moderate-intensity exercise leads to improvement of mental and physical health [35], quality of life [36], general health, physical functioning, depression and stress [37] and reduce the morbidity and mortality caused by chronic diseases [36].

Several studies reported low level of physical activity in suburban population. A 23.8% of men and 27.3% of women in a slum of Brazil had low physical activity [38]. Only 39% of the suburban population of British Columbia had enough physical activity [39]. In our study, sports and fitness component had the lowest average among all components of lifestyle.

Most inhabitants of Shirabad are poor migrants. The high rate of fertility, large family size, illiteracy, unemployment, low income, occupation false (jobs that are not in accordance with social norms or jobs that are not stable, such as; colportage and beggary), inappropriate physical environment, bad housing, lack of sanitation, lack of services and infrastructure and pollution are the prominent characteristics of this area [40]. These factors have effects on behaviour. All of these factors can lead to an unhealthy lifestyle, and thus poor health. In most societies, women don't have equal opportunities to participate in activities such as sports. In addition, women are bound with different restrictions, including structural, administrative, financial, social and cultural. So, these restrictions make them susceptible to poor lifestyle. As there is a significant relationship between lifestyle and general health, poor lifestyle leads to a poor general health in these women.

LIMITATION

Present study involved participants from a suburban area of Zahedan city and was conducted at a comprehensive health service center. For better generalizability of findings, it is recommended to conduct a broader investigation in other communities.

CONCLUSION

The results of this study indicate that lifestyle and general health in suburban women of Shirabad is low. Also, it was found that, there was an adverse relationship between lifestyle and their GHQ score. Education and sport component are predictors for health status. In the components of lifestyle, the component of sports obtained the lowest score. Policy, creating long and short term programs and implementation of action plans for education and lifestyle improvement can increase general health among suburban women.

Giving importance to barrier of education and exercise in these women is essential. Poor economic conditions, poor social welfare, lack of entertainment and sports facilities are common in suburban areas, offering subsidised or free public services could be useful in promoting lifestyle.

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