

# Explanation of Depression Level Based On Lifestyle through the Mediation of Social Health and Quality of Life

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## Abstract

**Introduction:** The lifestyle of individuals is important and is considered as a determinant for the status of psychological and social health. Lifestyle refers to the way a person's lives according to his/her abilities, but because of the important role of this issue in the health of the individual and the society, it means choosing the best way of improving the health aspects in life.

**Method:** This study is a basic research type and is in the framework of correlational plans. The population of the study included 383 people, a sample of all the adults of Ahwaz, chosen through a multistage random cluster sampling method. The data of the study was collected by using the Health Promoting Lifestyle Questionnaire of Walker and Polerrcky (1987), and also the Keyes Social Health (2004), and Beck Depression Inventory II (1996) and Quality of Life Questionnaire (1993). Besides, the data was collected and analyzed using structural equation modeling.

**Results:** The results of the hypothetical model were confirmed. The outcome of the coefficients and path analysis revealed that: lifestyle has a direct effect on depression, Social health and quality of life also had an indirect effect on depression.

**Conclusion:** According to the results of the research, depression can be used to explain the components of lifestyle, social health and quality of health.

**Keywords:** Lifestyle, Social Health, Quality of Life, Depression

## Introduction

The health condition of different classes of the society is one of the most fundamental issues in each country that must be considered in physical, mental and social terms. Studies show that mental disorders are increasing in developing countries. Moreover, in their socio-economic developmental plans, such disorders receive the lowest amount of priority [1]. Depression disorder is an illness of major clinical and public health significance [2]. It is the fourth major cause of diseases in the world allocating the largest portion of the non-fatal diseases. It has also imposed a large volume of public health resources due to its significant costs [3] [4]. Worldwide, major depressive disorder is a leading source of morbidity, and by 2030 it is projected to be the number one contributor to the global burden of disease. Among the factors influencing the emergence of depression in people is lifestyle. Lifestyle refers to the way a person lives according to his/her abilities, but because of the important role of this issue in the health of the individual and the society, it means choosing the best way of improving the health aspects of life [5]. Many researches have been done in Iran which mostly have dealt with the relationship between lifestyle with other health-related variables [6], lifestyle and psychological variables [7], or have studied lifestyle within social studies [8]. If we accept that the integral personality of each individual is the result of the

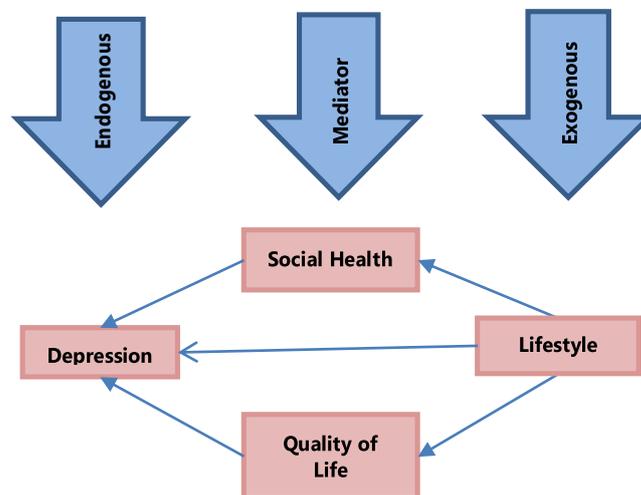
lifestyle a person has personally selected, then we can discern the importance of lifestyle [9].

Recently, especially in developed countries, the relationship between lifestyle and mental illnesses, including depression, has attracted the attention of many people. One of the items to evaluate different communities as well as health is the social health of communities. Social health plays an important role in every society's dynamism and efficiency. Social health is a function of social and cultural factors [10].

Genetics, environment, and behavior are the three factors determining the health or illness of any individual or community. Among these elements, only behavior depends on the individuals' choice. Moreover, time, evaluation, intervention and the application of appropriate behavior can yield appropriate changes [11]. The concept of life quality forms the basis of treatment. Accordingly, the control of consciousness, thoughts, feelings and physical senses is the biggest challenge for clinicians [12]. Meta-analyses have shown that interventions addressing social relationships, including couples therapy and peer support may be effective in reducing depressive symptoms. Therefore, the essential duty of the Ministry of Health is the prevention and treatment of depressive disorders and related problems [13].

A study conducted on nurses has investigated the effect of training healthy lifestyle (nutrition, sleep, exercise and stress management). The method of the study was based on a group discussion on stress, anxiety and depression. After three months of intervention, the results of the experimental and control groups showed that the groups

were significantly different in terms of stress, anxiety and depression [14] [15]. In a study which compared patience among patients with major depression, generalized anxiety, and normal people, the results showed that there is a significant difference between the three groups. The normal group was found to be much more patient compared to the two other groups. An important area to determine depression among adults is their social and interactional relations. Unluckily, there is high prevalence of low-quality of social relationships between adults [16]. In a study which was conducted on American adults of 25-75 years old during ten years, the follow-up study of their social support, social pressure and life quality relationship showed that depression was higher between those with low social support. It was also found that low-quality relationships with their spouse or family each independently increased the risk of depression [17]. In regards to Iran, it is said that 20 percent of the population of this country are depressed and depression is contagious. The results of a national study in Iran showed that besides the burden of diseases and injuries as well as the intentional or unintentional events or accidents, mental diseases and behavioral disorders are the largest health problems in Iran. This is an indicator of the prediction of abundant global attention to the importance of mental health in the next two decades [18]. Based on the mentioned evidence, the present study is to test the proposed model directly related to lifestyle as exogenous variables on depression as the criterion. It also investigates an indirect relationship through social health and quality of life as an intermediate variable. Figure 1 shows the proposed model.



**Figure 1.** Proposed model of direct and indirect effect of lifestyle on depression

## Methods

This study is a basic research with a correlational framework. The population included all the adults of Ahvaz, in 2016. Deciding on the minimum sample size for the equation studies is of great prominence. Most scholars have accepted the minimum size to be 200 [19]. The sample size selection was based on the Iranian national census in 2012 in Ahvaz with the application of the multistage random cluster sampling method. To run and collect the data, we first visited the census center of

Ahvaz and took permission to know about the number of the families and districts of the Ahvaz municipality, then 383 participants were chosen. From among the eight district city zones of Ahvaz, and based on the population density, three zones were selected and a list of each zone was prepared. Each zone consists of 12 local-zones. With regard to the population features of the local-zones, totally 9 local zones all over the city and in each local zone, four blocks and in each block ten families and

consequently the adult members were selected. In order to conduct the study, the researchers visited each house and after introducing themselves showed the permission letter from the authorities and explained their aims. They afterwards presented the questionnaires and asked the participants to fill them out. To obtain uniformity in the research implementation, seven people were trained by performing role-playing techniques and communication tips: five as the examiners and two as observers. After refining the collected questionnaire and ensuring the data integrity, 330 questionnaires were prepared for statistical analysis. Moreover, in order to answer the research hypotheses, structural equation modeling was used. Because the main argument in this study was to investigate the relationship between the predicting, mediating and criterion variables, the use of path-diagramming was necessary. To investigate a set of hypotheses in a model, the path diagram was drawn to explore the relationships of a set of variables. Besides, to examine the significance of the coefficients of the path diagram, the t-analysis was used. If the index was calculated greater than 1.96 and 2.58, respectively, the coefficient was statistically significant at the level of 0.05 and 0.01[20]. The SPSS software version 20 and Lisrel8.7 was used and P values less than 0.05 were considered significant.

In order to collect data, the Health Promoting Lifestyle Questionnaire [21], Social Health Questionnaire [22], Quality of Life Questionnaire [23] and Depression Questionnaire [24] were used.

**Health Promoting Lifestyle Questionnaire:** This questionnaire consists of 52 questions [21]. This tool measures health-promoting behaviors in 6 dimensions: nutrition, exercise, responsibility for health, stress management, interpersonal relationships, spiritual growth and self-actualization. Its Persian version has been translated and administered [25] and its validity and reliability have been calculated. Its Persian version has been administered in 10 medical centers in Qazvin among 466 people using the sampling method. Moreover, to determine the validity and the reliability of the tool, the test-retest method with an interval of two weeks was used. However, to check the internal consistency of the questionnaire, the Cronbach's alpha coefficient was used, and it was calculated to be 0.82 for the entire tool. Nevertheless, the reliability of its sub-categories was 0.94 and 0.64, respectively. Additionally, all cases indicated a satisfactory correlation.

**Social Health Questionnaire:** This questionnaire consists of 33 items and has five subscales and has been designed in

MacArthur scientific foundation in the United States of America in 2004; besides [22]. Its validity and reliability were tested in several studies. This tool is ranked from "strongly agree" scored 5 to "completely disagree" scored 0. (Questions 9 to 19, 21, 23 to 29 are reversely scored). Cronbach's alpha values obtained in this questionnaire for the entire Social Health Questionnaire was 0.80 and the reliability of its subscales were calculated between 0.72 and 0.85. In this study, the Cronbach's alpha of the variables of social health was calculated to be 0.84.

**The Quality Life Questionnaire of World Health Organization:**

The short form of this questionnaire was used to measure the quality of life in the past two weeks. This questionnaire was designed in 1993[23], in collaboration with the International Centre. It has 26 questions and is scored in range (up to 5). The Cronbach's alpha coefficients of the scales were between 0.73 and 0.89. In this study, the correlation coefficient was calculated to be between 0.45 and 0.83 respectively.

**Beck Depression Inventory 2:** The (BDI-II) is a newer version of the original Beck Depression Inventory. Beck Depression Inventory-2 mostly coordinates with the DSM-IV criteria [24]. The questionnaire has been designed for assessing the severity of depression in adults and adolescents above 13 years. The Beck Depression Inventory-2 (BDI-II) has 21 items. Each item is scored from 0 to 3. Therefore, anyone can get a score of 0 to 63. In the present study, by using the Cronbach's alpha, the reliability was calculated to be 0.83.

**Results**

The tables for the descriptive findings are presented below. The findings related to the research hypothesis are also presented. In the f table 1, the descriptive index (mean, standard deviation, etc.) are discussed.

**Table1.** The distribution of sample population based on gender and marital status  
n=330

Percentage	Frequency	Status	Sex/ Marital
63/6	210		Women
36/4	120		Men
22/1	73		Single
77/9	257		Married

Table 1 shows the distribution of the sample based on their gender and marital status. As it can be seen, about 64 percent of the participants are women and the remaining 36 percent are men. Besides, most of the participants are married and almost 22 percent are single.

**Table2.** Descriptive statistics and correlation matrix between the research variables  
n= 330

Scales	Average	Standard deviation	The least score	The highest score	Life style	Depression	Social health	Quality of life
Life style	138.52	22.57	87	200	1			
Depression	19.78	8.76	1	41	-0.420 (0.001)	1		
Social Health	113.24	14.49	76	150	0.48 (0.001)	-0.508 (0.001)	1	
Quality of Life	83.77	11.82	60	108	0.52 (0.001)	-0.567 (0.001)	0.523 (0.002)	1

In table 2, the descriptive information related to lifestyle, social health, quality of life, and depression have been reported. The coefficients of the correlation between the variables are significant and have been calculated to be 0.01. The relationship between lifestyle and depression has been reported to be -0.420. Also, the relationship between quality of life and social well-being and depression, have been reported to be -0.567 and -0.508 respectively. Thus, according to the established assumptions of the analysis in this study, it is now possible to use path analysis in order to investigate the multiple relationships among the research variables by using LISREL version 8.7.

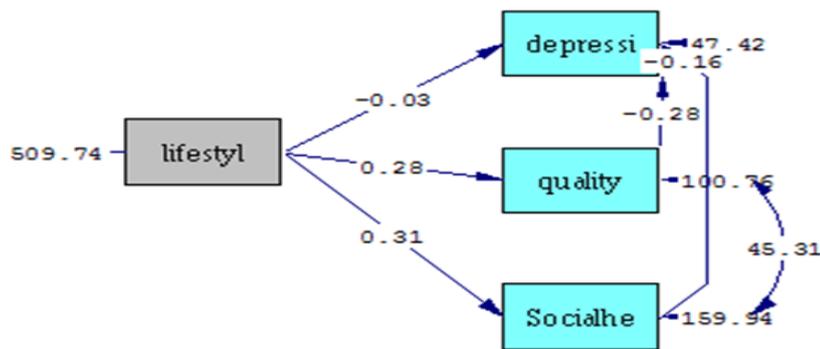
As it can be seen in Table 3, the results of the overall index model of path analysis confirmed the proposed model of a perfect fit. Furthermore, the direct and indirect effects of total exogenous variables (lifestyle) on the mediating variables (quality of life and social health) and the criterion variable (depression) as well as direct effects / mediator variables on criterion variables are discussed.

Nevertheless, it is shown that the gained amount is larger than the index of desirable RMSEA (Root of mean square error of approximate), which is lower than 0/1. The adjusted index of goodness of fit, AGFI, GFI, and goodness of fit index indicated an appropriate and high goodness of fit of the data. It can be seen that the Goodness of Fit Index (GFI), the Comparative Fit Index (CFI), the Normal Fit Index (NFI), and the Not Normal Fit Index (NNFI) are at a desirable amount and level for accepting the model. Overall, it can be stated that the research model meets a satisfactory goodness fit model. Figure 2 shows the proposed model with standardized coefficients.

As it can be seen in Figure 2, the significant path coefficients are generally obtained. There is a direct and meaningful relationship between the factors and lifestyle which suggests a direct effect on depression. One assumption underlying the proposed model is the presence of indirect paths by which the results can be seen in Table 4.

**Table 3.** Goodness of fit index model

Fit index	Chi-square test	Chi square of the degree of freedom	Root mean square error of approximation	Goodness of fit index	Adjusted index of goodness of fit	Comparative fit index	Normal fit index	Not normal fit index
Statistics	$\chi^2$	$\chi^2/df$	RMSEA	GFI	AGFI	CFI	NFI	NNFI
Optimal level		$\leq 0.3$	$\leq 0.1$	$\geq 0.9$	$\geq 0.9$	$\geq 0.9$	$\geq 0.9$	$\geq 0.9$
The value obtained	00	00	00	1	1	1	1	1



Chi-Square=0.00, df=0, P-value=1.00000, RMSEA=0.000

**Figure 2.** The proposed model with standard factors

**Table 4.** Standard and non-standard regression coefficients and t-values of variables

Relations	Kind of effects	Standardized regression coefficients		Non-standardized regression coefficients		T
Depression ← life style	Direct	-0.25	-0.07	-0.07	-3.57**	
	Indirect	-0.34	-0.13	-0.13	7.83**	
	total	-0.59	-0.16	-0.16	-8.66**	
Social health ← life style	Direct			0.31	-10.15**	
	total	0.49				
Quality of life ← life style	Direct			0.28	11.27**	
	total	0.53				
Depression ← social health	Direct			-0.16	-5.36**	
	total	-0.39				
Depression ← quality of life	Direct			-0.28	-7.50**	
	total	-0.27				

0/01\*\* ≤ p

As it can be observed in table 4, the largest standardized regression coefficient is related to the direct effect of lifestyle on the quality of life (0.53), and the smallest standardized regression coefficient (-0.27) is related to the direct effect on depression and quality of life. It was also observed that all the regression coefficients are significant at 0.01, while the total affect (standardized regression

coefficient) of lifestyle on depression is -0.59. The indirect effect mediated by the quality of life and social well is indicated to be -0.34, and the direct effect index is calculated to be -0.09. Therefore, it can be stated that there is a considerable degree of depression due to the effect of lifestyle on the quality of life mediator and social health variables.

**Table 5.** Direct and indirect effects on depression and lifestyle through the mediation of social health and quality of life

Route	Index	Direct effect	Indirect effect	Total effect
Social health -Lifestyle –Depression	Standardized regression coefficients	-0.23	-0.19	-0.42
	Non-standardized regression coefficients	-0.09	-0.08	-0.16
	T	-4.24**	6.03**	-8.37**
Lifestyle - Quality of life-Depression	Standardized regression coefficients	-0.17	-0.25	-0.42
	Non-standardized regression coefficients	-0.06	-0.10	-0.16
	T	-3.16**	7.70**	-8.37**

The regression coefficient in the above model that the effect of lifestyle on depression -0.23. Also, its indirect effect on the mediating role of social health is -0.19 and is significant at the level of  $p \leq 0.01$ . So, it can be said with 99% confidence that public health plays a mediating role in the relationship between lifestyle and depression. Besides, the indirect effect of depression mediated by quality of life is -0.25 and it is significant at the level of  $p \leq 0.01$ . This shows that the quality of life plays a mediating role between lifestyle and depression.

## Discussion

The purpose of this research is to explain depression based on the life style through the mediation of social health and quality of life and checking the fitness of the model. In order to achieve this goal, the study was set in 5 hypotheses. The first hypothesis stated that the causal model of depression was based on lifestyle through the mediation of social health and the quality of life variables. Measurements show that the model of this study has achieved a good level of fitness. The second hypothesis was that lifestyle has a direct effect on depression. The findings of this study confirmed a direct link between lifestyle of depression. The third hypothesis suggests that lifestyle has an impact on depression—through the mediation of social health and quality of life. As the results show, it can be said that a considerable degree of depression occurs due to the effect of lifestyle on health mediator variables related to social and life quality.

The fourth hypothesis confirmed an indirect effect of lifestyle on the prevalence of depression with a mediating role of social health. The findings showed that in relation with lifestyle and depression, social health has a mediating role. The fifth hypothesis investigates that lifestyle has an indirect effect on the level of depression with the mediated role of the quality of life.

The findings of the study and, the third, fourth and fifth hypothesis of this study examines the role of lifestyle and the mediating role of social health and quality of life on depression, which is consistent with many previous studies. Researchers confirmed many relationships

between lifestyle, social health, and quality of life with depression. This finding is consistent with the results of many previous researches [3], [6], [7], [8], [9], [10], [16]. The study findings revealed that lifestyle has a direct effect on depression. Lifestyle is defined as a reflection of attitudes and values of an individual or group, because it covers a set of attitudes, values, practices, behavior, mood, and tastes in everything. Music, television, advertising, all assumptions, and projections provide a potential lifestyle. Lifestyle is composed of six dimensions: physical activity, nutrition, responsibility for health, spiritual growth, interpersonal relations, and stress management [18]. An individual needs to take some measures and activities in order to maintain and promote health and to prevent diseases. Such activities include maintaining a healthy diet, having good sleep and doing exercises, controlling weight, and not smoking or drinking alcoholic beverages and immunizing against microbes. These sets make up the lifestyle kit [22]. In general, according to the findings of the third, fourth and fifth research hypotheses, it can be concluded that mediating role of social health and quality of life can be used to predict the relationship between lifestyle and depression. In explaining the findings of this study, it can be pointed out that as identified in a previous study [10], lawlessness, injustice and inequality (social health factors) play important roles in the prevalence of depression in communities. When people are suffering from a situation where they cannot defend their rights or cannot find a way to enforce their rights, they face depression. In other words, consequentially we can pay attention to the quality of life theory as the idea of quality of life factors or variables being considered as inhibitors which may increase or decrease sadness, and make life satisfactory (or unsatisfactory). Other factors like depression and mental disorders, particularly anxiety are associated with it [26]. Although previous studies have shown the relationship between lifestyle and depression, and social health and depression [6], [7], [8], none has dealt with the mediating role of social health and quality of life in relation with lifestyle and depression. It is notable in this

study that depression was calculated to be 19.87. This figure is similar to other statistics and studies in that area.

### Conclusion

The results of this study showed that lifestyle through the mediation of social health and quality of life has an effect on depression. Despite the specific characteristics of the present study, it is limited to Ahwaz and we should be cautious in generalizing the results. In this study, the social health and quality of life mediator shows an indirect relationship between lifestyle and depression. But, it is

also probable that there might be other desirable goodness for the indicators of the model. In the final step, given the high prevalence of depression and mental health and social care in communities in terms of psychology, psychiatry, sociology and forecast factors in the creation and management of depression, it is recommended that the model be considered in later researches and studies by therapists, and health authorities in order to plan and train people to keep and have a desirable lifestyle.

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