Jundishapur Journal of Chronic Disease Care
Quarterly Journal of Ahvaz Nursing and Midwifery School

# Evaluation of health promotion activities in Diabetic Patients type II admitted to Clinics in Najaf Abad 2013

**Heydar Ali Abedi [1], Ali Shafiee [1]*, Arash Ghoddosi [1]**

*1. Department of Nursing, Khorasgan (Isfahan) Branch, Islamic Azad University, Isfahan, Iran.*
*2. Isfahan Social Security Organization. Fateme-Zahra Hospital, Isfahan, Iran.*

**Abstract**

**Introduction**: Health promotion activities can improve both, physical and spiritual health. Due to the effect of these behaviors on the quality of life in patients with chronic diseases, the aim of this study was to investigate these behaviors in diabetic patients.

**Materials & Methods**: This is a descriptive study of the state of health promotion and demographic affecting factors, in 152 patients with type 2 diabetes which by using a standard questionnaire HPLPII(Health Promoting Lifestyle Profile II) – that it's validity and reliability were approved-was done. The data were analyzed by using descriptive statistical tests.

**Results**: The average age was 57 years, 64% female, 36% male and 84.8 percent were married. Within the behaviors of health promotion, spiritual and developmental growth, and interpersonal relationships, respectively, with an average of 2.54 and 2.47 had the highest score, and physical activity and responsibility for health, respectively, with 1.78 and 2.3, had the lowest score, stress management and nutrition score were less than average. No statistically significant relationship between the practice of health promotion and gender, education, marital status, disease control methods was considered, but a statistically significant relationship with smoking status, job status and age of patients, was found ($p<0.05$).

**Conclusion**: Health promotion life style behaviors of samples are undesirable. It seems that in order to change the lifestyle and health behaviors of diabetic patients, more training is needed.

**Keywords**: Health behaviors, Diabetic patient, Lifestyle, HPLP2.

## Introduction

Nowadays people in different parts of the world are facing increasing emergence of chronic diseases and undesirable health conditions, especially due to their bad habits and health-affecting behavior. The pattern of disease spread is changing from contagious diseases to chronic and disabling ones. Some authors argue that chronic diseases affect people's lives more negatively than any other type of diseases (1).

Diabetes, as a consequence of misconduct in the supervision of health-related conditions and behaviors, is of more concern today. This specific disease can afflict both people and the society around them with severe economic problems (2). Diabetes is regarded as the most common disease in different parts of the world, changing the pattern and quality of individuals and family life in a negative way. Statistics show that currently nearly 4 million adults with Diabetes live in Iran (3).

Patients with Diabetes should be more conscious to their lifestyle and their health promotion behavior in order to live longer. If their confidence falls or they get more anxious, their blood sugar level will be

*Corresponding author:
School of Nursing and Midwifery, Islamic Azad University, Isfahan, Iran. Email: sahba1469@pnu.iaun.ac.ir
Tel:00989133332889
Received: 17 Nov 2013 Accepted: 16 March 2014

affected and consequently, body cells will become less responsive towards the injection of insulin and ultimately the disease can no longer be controlled (4,5).

Results from other researchers have shown that factors like healthy diet and stress management are effective in controlling the disease. On the other hand, those who do not care about their lifestyle or health-related behaviors experience more negative consequences (6).

One of the main requirements to achieve more societal developments is to promote health among people. Those seeking ways to cure this disease now are in search for ways to control and prevent it by employing a more suitable life style. Health promotion approach consists of six main components including: "physical activity", "healthy diet and health responsibility", "spiritual growth", " interpersonal relationships" and "stress management ability". This lifestyle contributes to establishing welfare, promoting health, and inducing a feeling of satisfaction and self actualization (7).

Not many researches are conducted on health-related behaviors among Diabetes patients, but Amin et al. explored the positive effects of an advising program on the behavior of Diabetes patients and their mental state in Ein-o-Shams University in Cairo. The results revealed that Diabetes patients not aware of their health-related behaviors as expected (8).

In another study conducted in China on Type II Diabetes patients, Lee observed that factors such as living conditions, level of education, depression and economic situation of the family had an impact on patients' health (9). Health promoting behaviors were discounted in most studies conducted on Diabetes. Therefore, regarding the in sufficient evidence on such behaviors in patients with type II Diabetes especially in Iran, we hypothesized that some factors among lifestyle conditions are more important than the others. Being aware of these behaviors in relation to Diabetes patients, we can propose a lifestyle, that better, suits them. This study aimed to discover different aspects of lifestyle and demographic information of patients attending hospitals and clinics in Najafabad affiliated with Social Security Organization.

**Materials and Methods**

This research was descriptive-analytical in nature, focusing on health promoting behaviors in patients with type II Diabetes attending Social Security Organization medical centers in Najafabad in the year. The sample included a group of males and females attending the clinics, suffering from type II Diabetes. The patients were identified with disease more than 6 months earlier and all had a complete profile in the medical centers. Simple random sampling was done for the selection of the participants. The participants of the study planned to be at most 160 according to Morgan's table and considering the loss of participants during the study. Questionnaires were completed by the participants and 152 of the patients participated voluntarily in this study.

The criteria for the selection of the participants were 1) previous attendance and having a complete profile (at least 6 months earlier), 2) with no record of mental or psychological disorder, 3) medical diagnosis with type II Diabetes, 4) ability to speak and

understand Persian language, 5) signing in the consent form and voluntarily participation, 6) with no other disease except for the side effects of Diabetes itself.

The criteria to deselect the participants also were those questionnaires that were partially answered or not answered at all were discarded.

The data collection instruments for this study included a tape meter, the Mark weight and height measure (Detecto-2006) assessed for reliability of measurement by external calibrations. In addition, a questionnaire addressing health promoting behaviors (HPLP2) was also distributed among the participants, the face and content validity of which were evaluated by Wi et al. (10) and Aubi et al. (11). The final questionnaire was also assessed by 6 faculty members of Nursing and Midwifery Faculty and their evaluations and corrections were included in demographic information part of the questionnaire and considered in the main questionnaire.

The instructions for answering the questionnaire were included at the beginning of it. The first part was devoted to demographic information including age, sex, marital status, vocation, type of family (extended or nuclear), other types of diseases, place of living, economic conditions, weight, height, abdominal circumference, duration of disease, smoker/non-smoker and education level. The data collected were both qualitative and quantitative and were scaled by terms such as graded, continuous and discrete and the required information was obtained. The second part of the questionnaire was composed of 52 questions and 6 sub-parts. The first sub-part was on the responsibility towards being healthy with 9 questions, the second on physical activity with 8 questions, the third on diet with 9 questions, the fourth on spiritual growth with 9 questions, the fifth on interpersonal relationships with 9 questions and the sixth one was about stress management with 8 questions. For the sake of data analysis, we used descriptive and inferential statistical methods. In addition, the relationship among different variables was determined via SPSS software (version 18).

The answers to the questions in the questionnaire were measured on a 4 point Likert scale ranging from never to always. According to the instruction of the questionnaire, the average answers were obtained by summing up scores of each sub-part divided by the number of questions in each. For statistical analysis, the total score for the participants in each part was calculated and the t-test was administered. In this study, the consent form was also presented to the medical centers where this study was conducted and they were also assured of confidentiality of information provided (12).

To complete the questionnaires, 152 participants with required characteristics were selected from February 2013 to May 2013. Height and weight of the participants were also measured. Demographic information including age, sex, marital status, job and education level was gathered by asking the participants directly or the accompanying people or through the patients' profiles. In the second part of the questionnaire, questions about health promoting behaviors were included on six important aspects to assess their stress

management, spiritual development and growth, physical activity, interpersonal relationships, diet and health responsibility.

**Ethical considerations**

In this study, the researcher has adhered to the following ethical considerations: respect the subjects rights of their choice after consent and explain the purpose of the study for all subjects. initial plan of the study was approved by the Ethics Committee of the manager of Isfahan Social Security Organization.

**Results**

In this study, 35.5% the participants were males (n=54) and 64.5% females (n=98). Their age ranged from 33 to 84 and the average age was 57.04 and the standard deviation was 9.6. The average duration patients reported for their Diabetes was 10 years with standard deviation of 6.9. The smallest family as reported by patients was of 1 and the biggest family of 12 members (mean=4, SD= 2.1), of which 46.42% had primary education and 23.2% were illiterate. Those with a diploma degree were 16.2%, 9.2% had secondary school education, and 2.1% a college degree. The biggest frequency obtained was for married ones (84.2%). The frequency for men and women participated in this study was also different; the frequency of male participants was 98.1% and the frequency of females participating in this study was 76.6%, of which 18.3% were divorced or widowed. In terms of job, 75.5% were unemployed (consisting of unemployed, homemakers and retired ones) and the rest (about 25%) were office personnel, worker or freelancers. The maximum and minimum number of weight was attributed to women with 46 and 143 kg, respectively. The average height of men and women was also different this was 169.3m (SD=6.9) for men and 157.3 (SD=7.9) for women. As shown in Figure 1: Abdominal circumference was significantly diverse among men, ranging from 47 to 160 cm. Among the male participants, 41% had a belly size over 102 cm, and of women, 52% had an abdominal circumference over 88 cm, considered as overweight. In summary, about half of the participants were suffering from overweight and body-fat especially in the belly area.

The average body mass indicator was 28.40 kg/m$^2$ for men and 30.24 kg/m$^2$ for women, bringing the average of 29.59 kg/m$^2$ to the whole population. These statistics indicate that a high portion of participants particularly women were suffering from overweight. About 11.8% of the whole participants (men=31.5% and women=1%) were smokers. More than 76.1% of the patients had low, 20.4% satisfactory and 3.5% had high income. There was no salient difference between men and women in terms of income since 76.7% of females and 75% of males contended that their income was less than what they needed ($p<0.05$). Around 57.9% of the patients with Diabetes use anti-Diabetes tablets as medication, 17.1% used insulin and the rest (about 25%) use both types of medications. 64.5/5 of the participants indicated Diabetes as

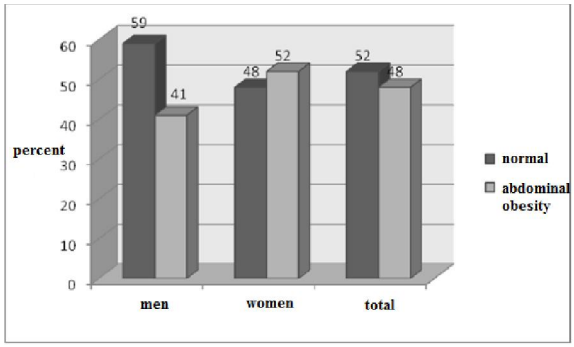


**Figure 1: Frequency diagram indicating men and women with abdominal obesity**

a genetic disease in their family and at least one of their close relatives had type II Diabetes. This was observed more in females than males (67.3%).

In order to promote health on different scales of qualitative demographic variables, at first we analyzed the results of observations on sub components of the desired variables. For normal results in the average scores on health promotion, we used parametric tests such as t-test and variance analysis. There was a significant difference between men and women just in terms of physical activity ($p<0.5$). The average score for men on physical activity was 1.92 and for women 1.70. The score for both groups were quite smaller than the expected value of 2.5; in other words, physical activity in Diabetes patients is less than average and in females significantly lower than males. With regard to other health-related behaviors, no significant difference was observed in males and females.

In order to study the relationship between education level and health-promoting behaviors, we compared illiterate and literate participants by means of t-test. 72.5% of the participants were of primary education or no education at all and were regarded as low-educated and illiterate respectively. 27.5% of the participants had secondary education or higher and were considered literate. In this comparison, the significance level obtained from t-test was equal to 0.619. Consequently it can be concluded that there was no significant difference in terms of health-promoting behaviors among illiterate and literate patients ($p<0.05$). However there was a significant difference in terms of physical activity in literate, illiterate and low-educated patients ($p<0.05$), leading to the fact that physical activity is much lower in illiterate and low-educated groups than in the literate group.

In order to investigate the relationship between marital status and health-promoting behaviors, we compared the average score of married and single patients by means of a t-test. The average score on physical activity among employed patients was more than unemployed or retired ones. The observed score for physical activity in unemployed participants was estimated to be 1.693 and the corresponding average score for employed ones was 2.037 ($p<0.05$)

To investigate the relationship between body mass indicator and health-promoting behaviors, first we divided the whole sample into three groups: normal (with body mass below 25), overweight (with body mass indicator of 25 to 30) and obese (with body mass indicator upper than 30). Then, through variance analysis, the three groups were compared with respect to the hypothetical relationship between body type and health-promoting average scores. Using variance analysis, no significant difference was observed among normal, with overweight and obese groups in terms of health-promoting behaviors ($p<0.05$)

As shown in Table 1, A t-test was used: a) to compare the health-promoting behaviors of smokers and non-smokers, b) to investigate the hypothetical relationship between smoking and health-promoting behaviors. Significance level obtained from t-test was about 0.695, showing no significant difference between the two groups with respect to smoking behavior. There was a significant difference in the scores

obtained by these two groups on physical indicates that physical activities in the smoker group is more than that in the non-smoker group.

As shown in Table 2, A t-test was used to investigate the relationship between health-promoting behaviors and economic conditions in lower-income and higher-income patients. 76.1% of the patients contended that their income was lower than they needed and 23.9% claimed that their income was satisfactory or high. In this study, the significance level was set at 0.589, that is to say no significant difference existed in two groups in terms of health-promoting behaviors ($p<0.05$). However, the average score for health-promoting behaviors regarding diet in patients with a suitable or higher income is significantly higher than the group with lower income ($p<0.05$). The correlation between age and physical activity was equal to -0.197 and significance level was lower than 0.05; activity ($p<0.05$). This substantial difference therefore, a negative relationship between age and physical activity existed (the lower the age, the higher the physical activity and vice versa).

The correlation between family size and spiritual growth was equal to 0.220 and the corresponding significance level was lower than 0.05, showing a positive relationship between family size and spiritual growth existed (the bigger the family, the higher the spiritual growth and vice versa).

Table 3 indicates that the average score on health-promoting behaviors on research variables related to physical activity ranges from 1.78 to 2.54 for spiritual growth. The mean is lower than 2.5. In addition, the average score on six aspects of health-promoting behaviors including health responsibility, physical activity, stress management, diet and interpersonal relationships, estimated to be lower than 2.5.

**Table 1: Average score on health-promoting behaviors in relation to smoking pattern**

| Health-promoting behavior | M±SD Smoker | M±SD Non-smoker | p-value |
|---|---|---|---|
| Health-promoting | 2.348±0.356 | 2.31±0.380 | 0.695 |
| Health responsibility | 2.390±0.372 | 2.292±0.57 | 0.292 |
| Physical activity | 1.993±0.474 | 1.752±0.496 | 0.041 |
| Diet | 2.279±0.364 | 2.457±0.412 | 0.085 |
| Spiritual growth | 2.466±0.684 | 2.468±0.451 | 0.150 |
| Interpersonal relationships | 2.500±0.597 | 2.274±0.480 | 0.221 |
| Stress management | 2.437±0.597 | 2.274±0.48 | 0.221 |

**Table 2: Average score on health-promoting behaviors in relation to economic conditions**

| Health-promoting behavior | M±SD Low income | M±SD Satisfactory income or high income | p-value |
|---|---|---|---|
| Health-promoting | 2.304±0.368 | 2.340±0.340 | 0.589 |
| Health responsibility | 2.306±0.570 | 2.296±0.506 | 0.920 |
| Physical activity | 1.742±0.480 | 1.871±0.535 | 0.148 |
| Diet | 2.390±0.387 | 2.543±0.447 | 0.035 |
| Spiritual growth | 2.535±0.600 | 2.564±0.492 | 0.780 |
| Interpersonal relationships | 2.483±0.450 | 2.447±0.467 | 0.660 |
| Stress management | 2.306±0.484 | 2.260±0.527 | 0.903 |

**Table 3: The frequency distribution of patients in relation to six aspects of health-related behaviors**

| Behavior | Number | Minimum | Maximum | M±SD | p-value |
|---|---|---|---|---|---|
| Health responsibility | 152 | 1.22 | 3.78 | 2.3032±0.55046 | 0.000 |
| Physical activity | 152 | 1.00 | 3.75 | 1.7803±0.49841 | 0.000 |
| Diet | 152 | 1.33 | 3.44 | 2.4355±0.40996 | 0.054 |
| Spiritual growth | 152 | 1.22 | 4.00 | 2.5437±0.56823 | 0.345 |
| Interpersonal relationship | 152 | 1.44 | 3.67 | 2.4719±0.45358 | 0.447 |
| Stress management | 152 | 1.25 | 3.75 | 2.2919±0.49548 | 0.000 |
| Health-promoting behaviors | 152 | 1.43 | 3.69 | 2.3147±0.37671 | 0.000 |

## Discussion

An average score was obtained for health-promoting behaviors for patients referring to Social Security Organization in the year 2013. These findings were fully consistent with the results of Lee's study on type II Diabetes patients (9). In addition, Tol et al. in their study on health-promoting lifestyle among students public health department found that health-promoting behaviors in relation to dietary issues was near average (13). However, the results of this study are proved this to be better. Considering faulty diet and overeating as an important cause of Type II Diabetes, weakness in health-promoting behaviors related to diet is predictable. Since a healthy and controlled diet is the key to control type II Diabetes, further considerations need to be taken into account in order to prevent and teach public in the future. The literature on Diabetes show that different assets of a healthy life such as healthy diet can reduce risk of diseases and consequently risk of death (14). Thus, one of the requirements in this area is to arrange educational courses for Diabetes patients.

Health-promoting behavior associated with physical activity was significantly lower than average among Diabetes patients in Social Security Organization in Najafabad in 2013. The results of this study were similar to those of Amin et al. with respect to the physical activities of the Diabetes patients (8). Fathi & Jafari in a similar study observed lifestyle and mental conditions of employees in two universities in Iran and reached approximately the same conclusion (15). Physical inactivity is one of the leading causes of chronic diseases. A good diet and enough physical activity can reduce the risk of such diseases to a great extent. Today, physical inactivity is of major concern in Iran (16). Some authors believe that another key in controlling Diabetes infection is doing exercises and physical activities, however further elaboration and follow-up are required in this regard.

As for stress management ability of the participants, it can be concluded that the participants intended ability was lower than average. Sadeqi Movahhed et al. in another study found that nearly half of the Diabetes participants were facing mental problems such as stress (17). Aqamohammadian et al. in a comparative study, investigating the effects of stressors in Diabetes patients and normal individuals, discovered stress-management strategies to be considerably helpful for patients (18). Regarding chronic diseases such as Diabetes as a major cause of stress for patients, it can be stated that stress management plays a key role. Prolonged and often impractical control of the disease and economic crisis can be the major causes of stress for both a patient

and his family. Stress management should be taught to patients as a way to prevent any kind of mental or psychological pressure. Given the lack of health-promoting behaviors on stress management, it is important to follow an efficient plan in teaching the patients relevant strategies to overcome and prevent the situation.

With respect to spiritual growth, the results of the study showed that health-related behaviors on spiritual growth were less visible among the participants and were almost average. Morovati Sharifabad et al. conducted a study concerning religious support as a component of health-promoting behaviors in elderly people (65 years old and over) in Yazd, and found to an acceptable average mean for this measured attribute (19). However, in this study the result was marginally beyond acceptable mean, there was no significant difference within spiritual growth and other factors. In addition, as mentioned earlier, lack of spiritual health can cause severe mental problems such as depression, sense of isolation and nothingness. Patients with enough spiritual growth can adapt themselves easily to the sever conditions such as diseases. Moreover, there was a negative relationship between spiritual growth and risk of mental disorders; hence, with an appropriate planning meetings or workshops can be held to improve the patients' mental health and to gain their confidence in spite of having a severe disease.

Interpersonal relationship was another factor of particular interest to the researcher. The results showed that Diabetes patients in Najafabad stood average in the regard. This was higher in the study of Safabakhsh & Nazemzadeh (20). The body of literature on personality disorders shows that lack of interpersonal relationship can bring about personality disorders. Investigating interpersonal relationship can be highly effective in predicting such mental disorders (21). In order to help people manage their interpersonal relationships and improve their interpersonal skills, workshops and meetings can be arranged to help Diabetes patients in this respect.

Regarding the responsibility of the participants towards their own health, we can conclude that Diabetes patients' responsibility was significantly below the average. Maftoon et al. discovered that more than 50% of the participants in their study attributed the blame more to themselves then government and society (22). One of the reasons for this can be sufficient expertise and knowledge about health-giving behaviors. Taking responsibility will also pave the ground for subsequent planning for health in the society, medical centers play a key role in making people take responsibility for their own health.

In addition, the results showed that physical activity was significantly higher among smokers and that it was more among literate people than illiterate people. By investigating the relationship between age and health-promoting behaviors, it was found that there was a negatively significant relationship between the age level of the participants and their willingness for physical activity; as participants get older, their physical activity decreases, this is explainable by problems brought up with aging. Employed people gained higher scores on health-related behaviors, especially on physical activity attribute. There was also a strong positive relationship between family size and spiritual growth; the bigger the family, the more spiritual growth they had.

**Conclusion**

The observed health-promoting behaviors in research sites were unfavorable. Concerning the

importance given to the quality of life rather than its duration, we should strive harder to meet the demands of our spiritual and mental welfare. Health-promoting behaviors are the main factors in controlling Diabetes and other disease. We should focus our attention more on the behaviors of the patients with Diabetes, because it was reported to affect their health strongly. One of the requirements in today's societies is to care for physical or mental welfare and well-being of people. One of the main responsibilities of medical centers and those in charge would be to train people and to prepare them for the demands of everyday life. The results of this study will be of a great help for the groups working in medical centers.

To sum it all up, in this study, the researcher found that observing health-promoting behaviors will be highly effective in controlling and preventing chronic diseases such as Diabetes and to improve patients' health. since the data collection procedure was partially dependent upon document storage in medical centers or the memory ability of the participants, retrieving the information from the participants themselves or their profiles was crucial. Therefore, we asked the participants to answer questions in a relaxed manner and in a quiet place. Another limitation was the length of the questionnaire and the fatigue resulted from; in order to tackle this problem, we invited them to eat and drink as they responded.

**Acknowledgement**

We would like to give special thanks to the manager of Isfahan Social Security Organization and Fateme-Zahra Hospital personnel for the assistance they gave the researcher from Islamic Azad University, Khorasgan Branch.

**References**

1. Esmaeeli S, Shojaeezade D, Azam K, Salehi L, Tol A, Moradian M. The impact of chronic diseases on the quality of life among the elderly people in the East of Tehran. Peyavarde Salamat. 2013; 6(3): 225-235. [Persian]

2. Davies MG, Chubb BD, Smith IC, Valentine WJ. Cost–utility analysis of liraglutide compared with sulphonylurea or sitagliptin, all as add-on to metformin monotherapy in type 2 Diabetes Mellitus. Diabetic Medicine. 2011; 10: 1464-5491.

3. Piri AR. Effects of education based on health belief model on dietary adherence in Diabetic patients. J of Diabetes and Metabolic Disorders. 2013; 9: 1-6.

4.Samadi N, Sahraee S, Allahyari A, Mehrnoosh N, Mostaalaziba M, Parsi S. Relationship between obesity and self steam in diabetic patients type 2. J of Ardebil Uni. 2012; 8(4): 394-402. [Persian]

5.Refahi S, Shamsi A, Ebadi A, Saeeid Y, Moradi A. Comparison of military and civilian life style of people with hypertension. JHPM. 2012; 1 (4): 43-50. [Persian]

6.Derakhshan R, Khoshnood A, Balaee P. Evaluation of abdominal obesity prevalence in diabetic patients and relation with other factors of metabolic syndrome. J of Endocrinology and Metabolism. 2010; 12(3): 208-12. [Persian]

7.Tol A, Shariferad GR, Eslami A, Alhani F, Mohajeri M, Shojaeezadeh D. Self management in diabetic patients type 2. J Edu Health Promot. 2011; 9(4): 21-32. [Persian]

8. Ameen DA, Elshakour SA, Abd-ELA ZIZ M, Ali HS. Effect of a counseling program for diabetic patients on their knowledge, health promoting lifestyle practices, and psychological status. J of American Science. 2012; 8(10): 1-6.
9. Lee PH. Study the relationships between depression and health promotion lifestyle in adults with diabetes. Health Industry Management. 2010; 6: 107-120.
10.Wei CN, Harada K, Ueda K, Fukumuto K, Minamoto K, Ueda A. Assessment of health-promoting life style profile in Japanese university students. Environmental Health and Preventive Medicine. 2011; 17(3): 222-227.
11. Aubi E, Shadnoush M, Nazarzadeh M, Bidel Z, Ranaei A, Delpisheh A. Translation and assessment of validity and reliability of the health-promoting lifestyle questionnaire, using factor analysis. Pejouhandeh. 2012; 17(3): 114- 20. [Persian]
12. Abedi H, Shahriari M, Kazemi M, Keshvari M. Nursing and Midwifery Research. Esfahan: Azad University Khorasgan Publisher. 2009; 256. [Persian]
13. Tol A, Tavassoli E, Shariferad GR, Shojaeezadeh D. Health-promoting lifestyle and quality of life among undergraduate students at school of health, Isfahan University of medical sciences. J Edu Health Promot. 2013; 2: 11. [Persian]
14.Sadighi J, Jahangiri K, Azin A, Aeenparast A, Omidvari S, Ebadi M, et al. Lifestyle and nutrition behaviors among Iranian population. Payesh. 2011; 10(3): 390-381. [Persian]
15. Fathi Ashtiani A, Jafari Kandovan Gh. Comparison of lifestyle, quality of life and mental health in two military dependent and non-military dependent university personnel. J of Military Medicine. 2011; 13 (1): 17-24. [Persian]
16. Daniali SSh, Azadbakht L, Mostafavi Darani F. The relationship between body image, self efficacy and physical activity in female employees of Isfahan University of Medical Sciences and University of Isfahan, Iran. J Health Syst Res. 2013; 8(6): 991-1001. [Persian]
17.Sadeghi Movahhed F, Molavi P,Sharghi A, Narimani M, Mohammadnia H, Deilami P, et al. On the relationship between coping strategies and mental health of diabetic patients. J of Fundamentals of Mental Health. 2010; 12(2): 476-83. [Persian]
18. Aghamohamadian H, Ali Ghanbari B, Vaezy M. Comparative exploration of stressors and coping strategies in diabetic and non-diabetic subjects. J of Sabzevar Uni Med Sci. 2010; 17 (1): 27-32. [Persian]
19. Morovvati MH, Ghofranipour F, Haidar Nia A, Babaei Gh. Religious support, perceived status of health-promoting behaviors, and these behaviors at Yazd aged 65 years and older. J of Yazd Sadoghi Martyr Uni Med Sci. 2004; 12 (1): 23-29. [Persian]
20. Safabakhsh L, Nazemzadeh M. The effect of health promotion education on high school students' lifestyle. Medical Education. 2013; 13(1): 58-65. [Persian]
21. Latifian M, Seif D. Effects of self consciousness on students' interpersonal problems. J of Shiraz Uni. 2007; 26(3): 138-50. [Persian]
22. Maftoon F, Aeenparast A, Azin A, Omidvari S, Jahangiri K, Sadighi J, et al. Who is responsible for health: Iranian health perception survey (Ihps). Payesh. 2011; 10(3): 347-353. [Persian]