Comparison of the Health Promoting Life Style in Patients Candidate for Coronary Artery Bypass Graft and Percutaneous Coronary Intervention in Isfahan Shahid Chamran Hospital, 2017

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Abstract

Health-promoting behaviors are a part of a lifestyle that include six dimensions of exercise situations, nutrition, health responsibility, self-actualization, interpersonal relationships, and stress management which affect cardiovascular diseases. In coronary artery disease treatment, bypass graft and percutaneous coronary intervention are preferred as invasive procedures. The objective of this study was to compare the health-promoting lifestyle in two groups of patients under organ transplantation of coronary artery and percutaneous coronary intervention. This is a descriptive-analytical research that was carried out by using the convenience sampling method. The statistical population included all patients candidate for surgery coronary artery bypass graft and percutaneous coronary intervention in Shahid Chamran hospital in Isfahan. In this research, 130 cardiovascular patients in two groups of 65 participants were evaluated by HPLP questionnaire. Data were collected by interview and analyzed by SPSS (version 22), through inferential and descriptive statistics. The results showed that, the average score of the health-promoting behaviors for patients was PCI=143/8±10/29 and for candidate patients were CABG= 136.15 ± 12.05. There was a significant difference between the average score of the two groups. Also, there were significant differences between score mean of all health-promoting behaviors dimensions, except for nutrition. The results showed that health-promoting behaviors in the two groups were in a moderate level and had significant differences. Because CABG surgery was more complicated than PCI, the patients can be candidate for PCI by the improvement of the health-promoting behaviors. In this context, society educations could be effective especially for cardiovascular patients in the field of health-promoting behaviors, especially in health responsibility, physical activity, and stress management.

Keywords: Health-promoting lifestyle, Coronary artery bypass graft, Percutaneous Coronary Intervention.

Resumen

Los comportamientos que promueven la salud son parte de un estilo de vida que incluye seis dimensiones de situaciones de ejercicio, nutrición, responsabilidad por la salud, autorrealización, relaciones interpersonales y manejo del estrés que afectan las enfermedades cardiovasculares. En el tratamiento de la enfermedad arterial coronaria, se prefieren el injerto de bypass y la intervención coronaria percutánea como procedimientos invasivos. El objetivo de este estudio fue comparar el estilo de vida que promueve la salud en dos grupos de pacientes sometidos a trasplante de órganos de arteria coronaria e intervención coronaria percutánea. Esta es una investigación analítica descriptiva que se llevó a cabo utilizando el método de muestreo de conveniencia. La población estadística incluyó a todos los pacientes candidatos a cirugía de injerto de bypass de arteria coronaria e intervención coronaria percutánea en el hospital Shahid Chamran en Isfahan. En esta investigación, 130 pacientes cardiovasculares en dos grupos de 65 participantes fueron evaluados por el cuestionario HPLP. Los datos fueron

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recolectados por entrevista y analizados por SPSS (versión 22), a través de estadísticas inferenciales y descriptivas. Los resultados mostraron que, el puntaje promedio de los comportamientos de promoción de la salud para los pacientes fue de PCI = 143/8 ± 10/29 y para los pacientes candidatos fue CABG = 136.15 ± 12.05. Hubo una diferencia significativa entre el puntaje promedio de los dos grupos. Además, hubo diferencias significativas entre la media de la puntuación de todas las dimensiones de comportamientos que promueven la salud, excepto la nutrición. Los resultados mostraron que los comportamientos de promoción de la salud en los dos grupos estaban en un nivel moderado y tenían diferencias significativas. Debido a que la cirugía de CABG fue más complicada que la ICP, los pacientes pueden ser candidatos a la PCI por la mejora de los comportamientos que promueven la salud. En este contexto, la educación de la sociedad podría ser efectiva especialmente para los pacientes cardiovasculares en el campo de los comportamientos que promueven la salud, especialmente en la responsabilidad de la salud, la actividad física y el manejo del estrés.

Palabras clave: estilo de vida que promueve la salud, injerto de derivación de la arteria coronaria, intervención percutánea coronaria.

Introduction

Cardiovascular disease refers to any disease that affects the circulatory system, which includes heart diseases, kidney and brain cardiovascular diseases, and artery diseases[1].Coronary artery disease (CAD) is one of the most important reasons for death in the world[2]. This disease even with excellent progress in its medical and surgical treatment is still considered as one of the causes of death and inability in patients[3]. Nowadays, about 30% death of developed country and about 35% to 82% of deaths in developing countries are due to CAD[4]. Nowadays, this disease is the second cause of death among patients in Iran, causing approximately 38% of deaths. The number of deaths caused by cardiovascular disease in the developed countries has been declining in recent years because of preventive actions and effective interventions while in the developing countries such as Iran, it is still increasing[5]. Examining the presented statistics showed that 50% to 80% of all heart diseases were directly related to moderator risk factors such as hypertension, obesity, diabetes, dyslipidemia, inactivity, and smoking. Hence, it should be attempted to encourage people to correct their dangerous health behaviors, resulting in a great effect on preventing cardiovascular diseases[6,7]. Because of the increased heart diseases, the use of treatment and new treatment methods such as Percutaneous Coronary Intervention to treat this patients is increasing daily[8]. Coronary interventions through

skin were known through effective and safe treatment method which gradually increases its usage[9]. Patients with one or two damage vein with natural ventricle function, and its losses from anatomy are appropriate to PCI are suggested to coronary intervention through Percutaneous and another method is coronary artery bypass graft in this method patient with three coronary vessels or two vessels, or those with damage left ventricular function or diabetes, or those who had left coronary artery disease or other inadequate lesions for action have a catheter, should be considered for CABG[10].

In health evaluation, not only the prevalence and severity of the diseases should be measured, but also the estimation of the patients' perception and opinion about their health status is necessary[11]. Nowadays, one of the important problems the society and healthcare providers face is the increased prevalence of chronic diseases whose incidence and severity are considerably influenced by the individuals' health habits and behaviors[12,13]. The prevalence of chronic diseases leads to high health cost and has important complications to human health. The results showed that the related behaviors to health and life style such as amount of activity, diet and stress management had a role in controlling and incidence of these diseases, and undesirable behavioral habits could cause worst situations for those who suffer from these diseases. Although our knowledge about diseases and deaths is not complete, what is clear is that a number of these diseases are largely related to lifestyle choices in nutrition term, exercise, alcohol and cigarette smoking. Today, due to urbanization, changes in food consumption patterns, over-calorie intakes from daily diet, sugar and fat consumption more than recommended levels, and reducing physical activity, provided the basis for chronic diseases such as diabetes, cancer, hypertension, cardiovascular disease and obesity[14]. Studies showed that people who have health behaviors such as non-smoking, doing physical activity, vegetables and fruits consumptions, not taking alcohol, sitting less than 8 hours, sleeping 7 hours or more, are less likely to be hospitalized in the hospital by 46%, compared to one who have one of this behaviors[15]. Nowadays, the results showed that, the cause of many chronic diseases is life style and human behaviors. Performing health-promoting behaviors is one of the best ways by which people could protect and control their health[16]. Health-promoting behaviors are a subset of lifestyle that have six dimensions of physical activity, nutrition, health responsibility, mental development, interpersonal relationships and stress management. This lifestyle in addition to continuity and support of health and welfare caused satisfaction and self-actualization. In recent years, the researchers have a high tendency to examine behaviors related to cardiovascular diseases health, but mostly the focus of this research was on the lifestyle of this people which generally include related and unrelated behaviors to health. This lifestyle, in addition to continuity and support of health and welfare level caused satisfaction and self-actualization[17]. Since approximately 70% of deaths are caused by heart attacks, it could be prevented by change in lifestyle such that it

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seems necessary to persuade people to change dangerous aspects of their lifestyle. In fact, developing and preventive programs at the national, institutional and local levels are an important part of the responsibilities of medical personnel, nursing, health education and health promoting[7]. It seems that conducting studies that directly focus on health behaviors and compare them in different heart diseases patients with different treatment method could provide useful information for designing and preventive actions for policymakers and also the healthcare staff. The objective of this study was to compare the health-promoting behaviors in the patient's candidate for coronary artery bypass graft (CABG) and percutaneous coronary intervention (PCI) and how lifestyle affects the patient severity of these two patient groups.

Methods

A descriptive-analytic cross-sectional study was conducted between august 2017 and October 2017 in Chamran hospital affiliated to Isfahan University of medical sciences in Iran. The research units were compared in two patient groups of percutaneous coronary intervention and coronary artery bypass graft. The inclusion criteria included all patients under organ transplantation surgery of coronary arteries or percutaneous coronary intervention, being interested in participating in the study, being in-patient in one parts of Shahid Chamran heart hospital during the research, patient ability or its care in answering questions, and getting doctor permission. The exclusion criteria included participants' unwillingness to continue to complete the questionnaire and change in patient hemodynamic condition, especially in coronary artery bypass graft surgery. The research qualified samples were selected by convenience sampling and sampling continued until the required sample were completed. From 130 qualified samples, 65 people were evaluated in percutaneous coronary intervention group and 65 were evaluated in coronary artery grafts intervention group. The questionnaires and patient's clinical records were used for data collection. The questionnaire included two parts, the first part consisted of demographic and clinical information (age, gender, marital status, occupation, educational level, residence and disease duration), and the second part consisted of the walker questionnaire that was evaluated the reliability and validity. This questionnaire included 54 questions and its objective was to evaluate the health-promoting behaviors in six dimensions including nutrition (diet pattern evaluation, 9 questions), exercise (investigating physical exercise and regular exercise pattern, 7 questions), stress management (evaluating the ability to cope stress, 8 questions), responsibility (accepting health responsibility, 12 questions), interpersonal relationship (determining intimacy and close relationship, 5 questions), self-actualization (evaluating spiritual growth

rate, 11 questions), each question had 4 four answers that were scored by the Likert scale which included never (1 score), sometimes (2 scores), usually (3 scores) always (4 scores). The total score of the health-promoting behaviors was minimum 54, and maximum 216 and for each dimension a separable score was calculable, the higher score means better health situations. Each of these two groups of patients was evaluated by descriptive statistics and the score differences between these two groups will be compared by inferential statistics. Scores (54-108) were equivalent to the health-promoting behavior in the low level, scores (108-162) were equivalent moderate level, and scores (162-216) were equivalent to the high level. After accepting the project in the university and getting the required permission from the ethics committee by number of ir.iau.najafabad.rec.1396.65, the introduction letter from Islamic Azad University Isfahan branch (khorasgan), was received to present to Chamran hospital manager in Isfahan and for conducting research were offered to hospital managers. The mentioned license was presented to the matron of the special cardiology and surgery ward, women division, and men division. The research objectives and method were explained for the matron and coordinated by her for data collection. Based on the research presence time in division, participants were selected according to the patient characteristics and based on the inclusion criteria in a way that the patient had the required characteristics to enter the study at first researcher introduced him, and explained the objective and research necessity. It was explained to research units that, at the time of completing satisfaction, they could participate in research and their participation or non-participation in this research had no effect on the treatment process or their costs. Patient's physical and mental conditions and also patient status were examined to patient had total residence in participating interview and if the patient did not have this readiness interview were postponed by patient coordinate. Then, in terms of agreement, the researcher began the interview and completed the questionnaire. Patients were asked to respond honestly and explained that information was completely confidential and there was no need to mention the name and birth certificate. Patients were asked to express any vague or obscure question. Sometimes, the patient's clinical records were used in order to read the biography and know the underlying disease or if the patients did not know any information about own experiments. The average time for completing the questionnaire was 20 to 25 minutes and the questionnaires were completed by the researcher in the morning. At the end of the interview, the permission was received to use the obtained information in the research. The participants and the authorities of the hospital who cooperated in conducting the present study were appreciated. After data collection, data were entered the SPSS software version 22, and then examined by inferential and descriptive statistics.

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Results

The average age of the participants in percutaneous receiving coronary intervention (PCI) group was equal to 62.86 ± 12.40 and in receiving coronary artery bypass graft (CABG) group was 59.01 ± 11.36. The results of independent t-test did not show any significant difference between the average age of the two groups (p<0.05, t = 0.892). The frequency distributions of the participants based on patient's individual characteristic in two groups were summarized in table 1. The studied variables in the two groups were the same (p-value> 0.05).

Table 1. Frequency distribution of participants based on patients' individual characteristic in two groups

Variable	Category	PCI Number	CABG percentage	PCI Number	CABG Percentage	Significant level
Gender	Female Male	15 50	25/7 74/3	18 47	27/7 72/3	0.795
Marital status	Single Married Widow	1 64 0	1/4 98/6 0.0	3 61 1	4/6 93/8 6/1	0.230
Occupation	Housekeeper Self-employed Employee Retired	15 29 3 18	24/3 44/3 4/3 27/1	18 30 5 12	6/27 46/2 7/7 18/5	0.605
Educational level	Illiterate Primary school High school Higher education	29 23 8 5	42/9 34/3 14/3 8/6	24 29 10 2	36/9 44/6 7/7 18/5	0.899
Residence place	Village City	34 31	51/4 48/6	32 33	49/2 50/8	0.799
Total		65	100/0	65	100/0	

In order to compare the health-promoting behaviors score and its dimension, the multivariate analysis of variance was used between patients of the two groups. Based on the result of multivariate analysis of variance, there were a significant difference between two groups in at least one of the variables of health-promoting behaviors and its six dimensions (p<0.05) (Table 2).

Table 2: Comparing the average score of the health-promoting lifestyle behaviors in patients of CABG and PCI groups

Statistical index Source change	Wilks' lambda	F statistic	1 degree of freedom	2 degree of freedom	Significant level
Groups	0.879	2/948	6/00	128/00	0.010

In order to determine the differences between two groups in each dimension, the univariate variance analysis was used. There were significant differences between the

average score of the two groups in dimensions of self-actualization, responsibility, interpersonal relationships, stress management, physical activity and also total score of health-promoting behaviors (p<0.05). The average score of the patients in PCI group was significantly more than patients in CABG group. There was no significant difference between the average score of the two groups in nutritional dimension (p<0.05).

Table 3. Comparison of the health-promoting behaviors in CABG and PCI groups

	PCI Mean	PCI Standard deviation	CABG Mean	CABG Standard deviation	F-value	Significant level
Self-actualization	31/74	3/49	30/05	3/08	5/131	0/025
Responsibility	34/07	3/60	32/62	3/87	15/202	0/001
Interpersonal relationships	23/14	2/19	21/69	2/13	7/124	0/009
Stress management	15/06	1/58	14/25	1/94	9/027	0/003
Physical activity	18/49	2/45	17/05	3/04	2/024	0/001
Nutrition	21/31	1/40	20/94	1/67	13/310	0/157
Health-promoting lifestyle behaviors (total)	143/81	10/92	137/60	12/05	8/911	0/003

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Discussion

In this study, it was attempted to compare the health-promoting behaviors in coronary artery bypass graft (CABG) and percutaneous coronary intervention (PCI). The results of table 3 showed that there is a significant difference between the total score of the health-promoting lifestyle behaviors and dimensions of self-actualization, responsibility, interpersonal relationships, stress management and physical activity. Moreover, the average score of the patients in PCI group was significantly more than the patients in CABG group (p <0.05). However, there was no significant difference between the average score of the two groups in nutrition dimension (p<0.05). It should be mentioned that no research has been conducted on evaluating the differences in the health-promoting lifestyle behaviors and its components between patients in PCI group and patients in CABG group, but most of the research focused on impact of health-promoting behaviors in preventing coronary artery disease without comparing these factors in patients under PCI and CABG. Eftekhar Ardebili et al. (2013) examined the relationship between lifestyle and ischemic heart, showing that lack of enough physical activity, high-fat and low-fiber diet and also inappropriate psychological status could be major causes and risk factors for ischemia incidence[18]. Mansourian et al. (2012) studied the relationship between lifestyle and hypertension in rural population, showing that there is a significant relationship between lifestyle and physical activity dimensions, spiritual

growth, interpersonal relationships, stress management, and hypertension[6]. Also, for regular physical activity with reduced cardiovascular disease risk, Nagheyii and Alamdadi (2011) showed that by reducing risk factors and increasing physical activity, the cardiovascular events could be partly prevented[19]. Amberson et al. (2005) studied cardiovascular patients' lifestyle in middle-aged men and health responsibility were reported medium. According to reasons such as severe disabilities, aging, disabilities, chronic obstructive pulmonary disease or weak left ventricular function are an obstacle to CABG surgery, and according to CABG surgery follow up and control disease process by individual caused to increases health promoting life style and its components (self-actualization, health responsibility, interpersonal relationships, stress management, physical activity, nutrition) in the long term and also caused to prevent CABG surgery[20]. Peteet (2012) believed that the people's quality of life with CABG surgery was affected due to depression after surgery[21]. Fortescue et al. believed that the increased or decreased quality of life after surgery depends on various factors such as underlying disease, mental health before surgery, gender, vessel involvement, or the presence or absence of thrombus[22]. Arthur et al. (2008) believed that people's quality of life after PCI depends on the time that person has been waiting for surgery. If the time between diseases diagnose to operation was short, the people's quality of life increased faster and remained alive in a longer period[23]. In a context of lifestyle by using health method on heart risk factors, Abedi et al. (2011) showed that reduced fat levels and increased physical activity, has been effective in reducing coronary artery disease[24]. Hekar et al. (2012) in a study conducted in menopausal women with and without coronary artery disease, showed that there was a significant difference between the total lifestyle score between both populations of women[25]. Naghii and Alamdari (2011) in their research about the effect of regular physical activity as an basic part of life style correction on reducing cardiovascular risk factors, concluded that increasing physical activity could partly prevent cardiovascular events[19]. For explaining these findings, it should be mentioned that this study and other numerous studies focus on determining effective factors on preventing sever cardiovascular disease for this reasons patients under PCI have been treated, but none of these studies has been specially mentioned effective factors in infection cardiovascular disease in patients under PCI. Commonalities of these studies with present research are the effectiveness of physical factors, physical activity, and lifestyle in the disease.

Mohseni Pouya et al. (2015) examined the relationship between health-promoting behaviors and severity of coronary artery stenosis and concluded that educational interventions to improve health responsibility, stress management and physical activity promoting among people in risk of cardiovascular disease could reduce severity of coronary artery stenosis[26]. The studies showed the necessity of developing a comprehensive care plan for patients in the CABG group. Siavoshi et al. (2012) conducted a study on determining the effect of the health-promoting behavior on the lifestyle of patients with heart graft surgery showed that the health-promoting plan in patients who suffer from coronary artery disease could be effective in health behaviors awareness and improvement of the quality of life[27]. Mohseni Pouya et al. (2015) also conducted a study to determine the effectiveness of Pender health-promoting model to predict the heart surgery patients' lifestyle which showed that self-care behaviors of the health-promoting model could help identify and predict heart surgery patient lifestyle in Iran[26]. This pattern could be used as a frame for discharge plan and educational intervention implementation in order to improve CABG patient lifestyle. Weberger et al. (2013) and other studies that have indirectly expressed this issue, in inpatient rehabilitation and changes in self-reported health related quality of life (HRQOL) research concluded that, in improving life quality related to health during time rehabilitation, caring cardiac patients, especially in physical role and physical performance, vitality, physical and emotional pain, physical and social well-being, in all areas are important for active life[28-34].

The limitations of this study are as follows: it should be cautious to generalize results to other groups as other experimental study[35]. Existence of invention factors such as anxiety before surgery or other considerations such as unwillingness to provide information by patients could be proposed as a limitation; in this context, the researcher attempted to minimize these limitations by providing adequate explanations and making patient sure that questionnaire information completely confidential and had no effect on the treatment and recovery process.

Conclusions

The results of this research showed that there is a significant difference between the mean of the health-promoting behaviors in patients under PCI and patients under CABG, in a way that patients under PCI surgery compared to candidate patients or under CABG surgery have higher level of health-promoting lifestyle. Because CABG surgery has more complications compared to PCI and, sometimes, because of the incidence of complications in patients, an invasive action cannot be done; therefore, improving the lifestyle-promoting behaviors may lead patients from CABG surgery to candidate for PCI.

References

1. Afzalaghaiee E, Hadian M, Attarbashi Moghadam B, Tavakol K, Zandparsa A, Jalaei S, et al. The Effects Of Cardiac Rehabilitation On Changes In The Lipid Profile Of Iranian male and female With Coronary Artery Disease Refered To Emam Khomeini Hospital Complex. Modern Rehabilitation. 2010;4(1):45-9.

2. Hosseini M, Ashktorab T, Taghdisi M. Health Promotion Lifestyle in Nursing Students: a systematic review. Journal of Health Promotion Management. 2013;2(1):66-79.

3.   Davoudvand SM, Elahi N, Ahmadi F, Haghighi-Zadeh MH. Effectiveness of the Short-Term Cardiac Rehabilitation Programs on the Rate of Disease Relapse, Again Refer and Rehospitalization in Patients with Myocardial Infarction. Archives of Rehabilitation. 2008;9(1):17-22.

4.   WHO. Cardiovascular diseases (CVDs) WMcFsCd. 2013 [Available from: http://www.who.int/mediacentre/factsheets/fs317/en/.

5.   Shams M ST, Hojatzadeh A, Afkhami A, Bashti Sh, Ghotbi M, Rezvani A. Preventive and control Measures of cardiovascular disease. 2 ed. Tehran: Javan; 2013.

6.   Mansoorian M, Qorbani M, Shafieyan N, Asayesh H, Rahimzadeh Barzaki H, Shafieyan Z, et al. Association between life style and hypertension in rural population of Gorgan. Journal of Health Promotion Management. 2012;1(2):23-8.

7.   Shafipour V, Shafipour L, Jafari H. The Effect of the cardiac rehabilitation program on the quality of life in patients with myocardial infarction. Journal of Arak University of Medical Sciences. 2011;14(5):34-42.

8.   Wong MS, Chair SY. Changes in health-related quality of life following percutaneous coronary intervention: A longitudinal study. International Journal of Nursing Studies. 2007;44(8):1334-42.

9.   Brilakis ES, Patel VG, Banerjee S. Medical management after coronary stent implantation: A review. JAMA. 2013;310(2):189-98.

10. Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J. Harrison's principles of internal medicine 18E Vol 2 EB: McGraw Hill Professional; 2012.

11. Naghibi F, Golmakani N, Esmaily H, Moharari F. The Relationship between Life Style and the Health Related Quality Of Life among the Girl Students of High Schools in Mashhad, 2012-2013. The Iranian Journal of Obstetrics, Gynecology and Infertility. 2013;16(61):9-19.

12. Esmaeili Shahmirzadi S, Shojaeizadeh D, Azam K, Salehi L, Tol A, Moradian Sorkhkolaei M. The Impact of Chronic Diseases On The Quality Of Life Among The Elderly People In The East Of Tehran Payavard Salamat. 2012;6(3):225-35.

13. Refahi S, Shamsi A, Ebadi A, Saeeid Y, Moradi A. Comparison of military and civilian life style of people with hypertension. Journal of Health Promotion Management. 2012;1(4):43-50.

14. Pour VN, Pasha A, Ghanbari A, Atrkar RZ, Majd TR. Health Behaviors of Faculty members of Guilan University of Medical Science and their relations with demographic factors. Journal of Holistic Nursing and Midwifery. 2009;19(2):8-13.

15. Tran B, Falster MO, Douglas K, Blyth F, Jorm LR. Health Behaviours and Potentially Preventable Hospitalisation: A Prospective Study of Older Australian Adults. PLOS ONE. 2014;9(4):e93111.

16. Nilsaz M, Tavasoli E, Mazaheri M, Sohrabi F, Khezeli M, Ghazanfari Z, Mirzaei A. Study of Health-promotion behaviors and Life Style among students of Dezful universities. Journal of Ilam University of Medical Sciences. 2013;20(5):168-75.

17. Thelle DS. The causal role of blood lipids in the aetiology of coronary heart disease – an epidemiologist's perspective. Scandinavian Cardiovascular Journal. 2008;42(4):274-8.

18. EftekharArdebili H, Rahimi foroushani A, Barkati H, Babaei Heydarabadi A, Ashrafi Hafez A, Omrani A. Evaluation of correlation between lifestyle and Morbidity of Ischemic heart disease. Advances in Nursing and Midwifery. 2013;23(81):47-54.

19. Naghii1 M-R, Almadadi M. Effect of Regular Physical Activity as a Basic Component of Lifestyle Modification on Reducing Major Cardiovascular Risk Factors. 2011. 2011.

20. Emberson JR, Whincup PH, Morris RW, Wannamethee SG, Shaper AG. Lifestyle and cardiovascular disease in middle-aged British men: the effect of adjusting for within-person variation. European heart journal. 2005;26(17):1774-82.

21. Peteet JR. Spiritually integrated treatment of depression: A conceptual framework. Depression research and treatment. 2012;2012.

22. Fortescue EB, Kahn K, Bates DW. Major adverse outcomes after percutaneous transluminal coronary angioplasty: a clinical prediction rule. Journal of clinical epidemiology. 2003;56(1):17-27.

23. Arthur H, Smith K, Natarajan M. Quality of life at referral predicts outcome of elective coronary artery angiogram. International journal of cardiology. 2008;126(1):32-6.

24. Abedi P, Huang Soo Lee M, Kandiah MK, Yassin Z, Shojaeezade D, Hosseini M. Lifestyle Change Using the Health Belief Model to Improve Cardiovascular Risk Factors among Postmenopausal Women. The First International & 4th National Congress on health Education & Promotion. 2011.

25. Hekari d, Mohammadzadeh R, Khajavikia H, Zarei S. Comparing lifestyle between menopause women with and without coronary heart diseases during 2010-2011. Medical Sciences Journal. 2012;22(1):69-77.

26. Mohseni Pouya H, Hajimiri K, Esmaeili Shahmirzadi S, Golshani S, Hashemi Amrei sh, Seifi Makrani A. Relationship between Health Promoting Behaviors and Severity of Coronary Artery Stenosis in Angiography Department in Mazandaran Heart Center. Journal of Mazandaran University of Medical Sciences. 2015;25(130):19-29.

27. Siavoshi S, Roshandel M, Zareiyan Z, Ettefagh L. The effect of cardiac rehabilitation care plan on the quality of life in patients undergoing coronary artery bypass graft surgery. Cardiovascular Nursing Journal. 2012;1(2):38-46.

28. Weberg M, Hjermstad M, Hilmarsen C, Oldervoll L. Inpatient cardiac rehabilitation and changes in self-reported health related quality of life–a pilot study. Annals of physical and rehabilitation medicine. 2013;56(5):342-55.

29. Zarei E, Nikkhah A, Pouragha B. Utilization and out of pocket (OOP) payment for physiotherapy services in public hospitals of Shahid Beheshti University of Medical Sciences. Med J Islam Repub Iran. 2018.32 (1) :105-110

30. Pouragha B, Pourreza A, Jaafaripooyan E, Heydari H, Rahimi Froushani A, Hassanzadeh A. The effect of access and out of pocket payment on the utilization of physicians services. World Appl Sci J. 2013;22(1):104-2.

31. Tayebi Arasteh M, Pouragha B and Bagheri Kahkesh M. The performance of select universities of medical sciences based on the components affecting medical education [version 1; referees: 2 approved]. F1000 Research 2018, 7:301 (doi: 10.12688/f1000research.13938.1).

32. Ghalesefidi M. J., Maghsoudi J., Pouragha B. Effectiveness of gratitude on psychological well-being and quality of life among hospitalized substance abuse patients. Electronic Journal of General Medicine. 2018. (doi:10.29333/ejgm/94091).

33. Pouragha B, Khabiri R, Pourreza A, Zarei E. Behavior of under the Iranian Social Security Organization-Insured Persons on Utilization of Laboratory and Imaging Services. J Mazandaran Univ Med Sci. 2013; 23 (106) :38-47

34. Tayebi Arasteh M, Pouragha B and Norouzinia R. Studying the conformity of self-assessment results of higher education lecturers with the assessment by others. International Journal of Pharmaceutical Research. July- Sept 2018; 10(3):269-276.

35. Bazrafcan L, Takmil F, Shokrpour N. Assessing the Effectiveness of Problem-Based Learning as a New Approach on Health Care Provider Ethical Reasoning Development in Shiraz University of Medical Sciences. The health care manager. 2018 Jul 1; 37(3):273-7.

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