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Factors Affecting for Lifestyle Adoption in Patients with Myocardial Infarction

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ABSTRACT

Aims Epidemiological transition of acute and infectious diseases to non-communicable ones, aging population, together with rapid lifestyle changes all have given rise to prevalence rate of cardiovascular diseases (CVDs). Thus, it is of utmost importance to reflect on lifestyles, especially in this period. The main purpose of the present study was to assess lifestyle in patients affected with myocardial infarction (MI).

Instruments & Methods This study was a cross-sectional study examining health-related lifestyle behaviors in patients with MI in 2019. To this end, a total number of 176 patients were selected using purposive and convenience sampling methods. The research instrument was also the Health-Promoting Lifestyle Profile II (HPLP-II) as a standardized self-report questionnaire. The data analyzed using IBM SPSS 22 and the generalized linear models were used. Moreover, coefficient at a significance level less than 0.05.

Findings The results of Wilks' lambda distribution revealed that the effect of gender on the linear combination of the dependent variable (i.e. lifestyle) was significant and 11.4% of changes in this variable had resulted from variation in gender. Besides, the results demonstrated that health responsibility scores in men were on average 2.703 lower than those obtained by women. This relationship was also significant and its effect size was by 3.3% (p= 0.016).

Conclusions It was concluded that the concept of lifestyle can be an analysis tool to better understand differences between genders, as an effective variable in adopting a healthy lifestyle, especially in patients suffering from MI.

Keywords Lifestyle; Myocardial Infarction; Gender Identity; Patients

CITATION LINKS

[1] Epidemiology of coronary heart disease and acute coronary ... [2] Cardiovascular diseases (CVDs) fact ... [3] Development of a new core health-related quality of life questionnaire for patients with ischemic heart ... [4] Psychometric properties of the health-promoting lifestyle profile II: Cross-cultural validation of the Malay language ... [5] Patients' experiences with symptoms and needs in the early rehabilitation phase after coronary artery bypass grafting. Eur J Cardiovasc ... [6] Factors influencing quality of life of elderly people with dementia and care implications: A systematic ... [7] Integrative medicine strategies for changing health behaviors: Support for primary ... [8] Lifestyle and hypertension in rural population of Tangestan town, ... [9] Evaluation the lifestyle of patients with hypertension who reffered to heart clinices dependent on Islamic azad university of ... [10] Relationship between health promoting behaviors and severity of coronary artery stenosis in angiography department in Mazandaran Heart ... [11] Association between life style and hypertension in rural population of ... [12] Association between a healthy lifestyle score and the risk of cardiovascular disease ... [13] The role of social support in health status and depressive symptoms after acute ... [14] A survey on the the lifestyle of the heart desease patients after discharge from hospital in urmia seyyed alshohada in ... [15] Socio-demographic and lifestyle correlates of commuting activity in ... [16] Assessment of healthy lifestyle among elderly in Isfahan, ... [17] Health promoting self-care behaviors and its related factors in elderly: Application of health belief ... [18] Hypertension and lifestyle in 24-65 year old people in Qazvin Kosar region in ... [19] A study on the health promoting behaviors regarding hospitalized older adults' health in ... [20] Application of theory of planned behavior in prediction of health responsibility, spiritual health and interpersonal relations in high school girl students in ... [21] Investigating factors affecting social health in Paveh ... [22] How gender affects patterns of social relations and their impact on health: A comparison of one or multiple sources of support from ...

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Introduction

The prevalence rate of cardiovascular diseases (CVDs) in developing countries is on the rise because of aging population and rapid lifestyle changes, in particular, tobacco use, high-fat food intake, lack of physical activity and exercise, as well as adoption of industrial lifestyle [1]. Nowadays, CVDs are known as the world's leading cause of death. Estimates in 2015 in this respect had also established that 17.7 million people had died from CVDs, accounting for 31% of global mortality. Statistics had further revealed that 7.4 million people had lost their lives caused by coronary artery disease and 6.7 million people had died due to myocardial infarction (MI) [2]. Mortality and recurrent MI are thus considered as the main clinical outcomes following an acute heart attack. Ability to perform daily living activities, level of comfort, and lifestyle behaviors after a heart attack among patients are also taken into account as important factors affecting their survival [3]. Moreover, evidence has demonstrated that lifestyle can shape individuals' health status and longevity [4]. Epidemiological studies further report that a healthy lifestyle, such as proper diet, no tobacco use, healthy weight maintenance, and physical activity can play a role in controlling cardiovascular risk factors [5].

The World Health Organization (WHO) also recognizes the concept of lifestyle based on definable patterns of behavior resulting from interactions between personal characteristics, social relationships, environmental conditions, and socioeconomic situations [6]. In fact, lifestyle refers to routine daily living activities accepted automatically by individuals, so they can affect health status [7]. To pick a lifestyle to maintain and promote one's health and to prevent diseases, individuals take several measures including proper diet adherence, enough sleep, rest, physical activity and exercise, weight control, as well as no tobacco use, and immunization against diseases [8]. It should be noted that health-promoting lifestyle consists of six behavioral aspects of physical activity, nutrition, health responsibility, spiritual growth, interpersonal relations, and stress management [9].

In this line, the results of the study by Manavifar and Asaei had found that lifestyle in patients with hypertension referred to clinics affiliated to Islamic Azad University of Mashhad was not at a favorable level. In terms of physical activity, majority of the patients had also answered "never" to items about regular, vigorous, or even moderate exercise. In addition, more than half of the patients had insufficient information about sodium and oil intake with regard to nutrition [9]. The findings reported by Mohseni Pouya *et al*. had correspondingly demonstrated a significant relationship between lifestyle and prevalence rate of coronary artery disease in patients affected with CVDs [10]. Moreover, Mansourian *et al*. had revealed a significant difference between lifestyle (i.e. physical activity, spiritual growth, interpersonal relations, and stress management) and high blood pressure [11].

On the other hand, epidemiological transition of acute and infectious diseases to non-communicable ones as the leading cause of mortality and health disorders has made the assessment of lifestyle an essential issue especially in this period [12]. Considering the importance of lifestyle and its effect in helping individuals have access to favorable health status, the present study was conducted to assess factors affecting lifestyle adoption in palliative care of in patients affected with myocardial infarction admitted to Mazandaran Heart Center, Iran, in 2019.

Instruments & Methods

The present study was a descriptive-analytical cross-sectional research assessing health-related lifestyle behaviors in patients affected with MI in 2019. Ethics committee Mazandaran University of Medical Science approved this study with the ethical code no.IR.MAZUMS.REC.13971105. To observe the research ethics, a letter of introduction was initially received from the Vice-Chancellor's Office for Research and Technology at Mazandaran University of Medical Sciences and then submitted to the head of Mazandaran Heart Center. After introducing oneself to study samples, the researcher also explained the main research objectives and obtained an informed consent from them. In this study, the designed research instrument was distributed among 176 patients selected via purposive and convenience sampling methods. The patients were further informed that they were free to participate in the project or withdraw. To ensure confidentiality of data, the patients' names were not mentioned on the information forms. The inclusion criteria were willingness to participate in the study, no emergency critical conditions, complete alertness during the study, no mental illnesses, and at least 5 days of being affected with MI. As well, the exclusion criteria were unwillingness to be involved in the study and being in emergency critical conditions. According to the formula for determining sample size, a total number of 176 patients participated. The sample size was correspondingly calculated based on research results by Leifheit-Limson *et al*. as follows [13]:

$$n=\frac{(z_{\frac{\alpha}{2}}+z_{\beta})^2\sigma^2}{d^2}=176, \sigma=26 \quad d=5 \quad \alpha=0.05, \beta=0.2$$

The main research instruments were a demographic characteristics form (including age, gender, marital status, and level of education) and the 52-item

Health-Promoting Lifestyle Profile II (HPLP-II) as a standardized self-report questionnaire, used in the study by Mohseni-Pouya *et al*., reflecting on six aspects of lifestyle i.e. health responsibility, nutrition, spiritual growth, interpersonal relations (each one with 9 items) as well as physical activity and stress management (each one with 8 items) using a Likert-type scale containing never (1)", sometimes (2), often (3), and always (4). The total score of lifestyle could also range from 52 to 208. The validity of this study instrument was measured by 10 experts through content validity method. Cronbach's alpha coefficient was also calculated to determine internal validity, which was 0.83 and at a desirable level.

The data were collected based on medical records and through direct interviews with patients in the ward. The data analysis was further conducted using the IBM SPSS 22 software and statistical tests of mean, frequency, and generalized linear models (GLMs). The level of significance was finally set at 0.05.

Findings

The findings illustrated that the mean age in men and women was 56.21±5.31 and 55.14±4.81, respectively. As well, 72.9% of the male patients and 89.2% of the females were married. Among the six aspects of lifestyle, physical activity was the poorest behavior demonstrated by the patients.

Table 1 shows the frequency distribution of demographic characteristics of patients with MI.

Table 2 depicted comparison of aspects of lifestyle in terms of gender among patients with MI in 2019 using Hotelling's T-squared distribution (T^2).

The results of Wilks' lambda distribution in 0.886, F (6.176)= 3.62, and p= 0.002, as well as partial eta-squared= 0.114 revealed that the effect of gender on the linear combination of the dependent variable (i.e. lifestyle) was significant and 11.4% of the changes in the given variable had resulted from variation in gender. For this purpose, independent T-test was employed to specify the significance source, whose results are outlined in Table 3.

The results in Table 3 showed that the score of health responsibility in men compared with women was on average 2.703 lower. So, this relationship was significant and its effect size was reported by 3.3% (p= 0.016). Considering other variables, no statistically significant difference was found between both genders.

According to the comparison of total score of lifestyle in men (128) and women (48) affected with MI in 2019, no significant difference was established between the total score of lifestyle in both genders (p= 0.154), namely, lifestyle scores in men and women were 151.18±29.69 and 144.71±25.51, respectively.

Table 1) Frequency distribution of demographic characteristics of patients with MI

Variable	Number (Percent)
Gender	
Male	178 (72.9)
Female	48 (27.3)
Status of marriage	
No marriage	8 (4.6)
Died of Wife	11 (6.3)
Marriage	157 (89.2)
Educational level	
Underdiploma	66 (37.5)
Diploma	42 (23.9)
Advanced diploma	15 (8.5)
Bachelor	19 (10.8)
Master's degree	18 (10.2)
Others	16 (9.1)
Job	
Governmental	25 (14.2)
Private	29 (16.3)
Self-employed	35 (19.9)
Retired	41 (23.3)
Housewife	38 (21.6)
Others	8 (4.5)

Table 2) Statistics mean of aspects of lifestyle in terms of gender among patients with MI in 2019 using Hotelling's T-squared distribution (T^2)

Variable	Male	Female
Responsibility	23.10±6.80	25.81±5.73
Physical activity	16.51±5.86	18.62±10.69
Nutrition	25.95±4.50	26.58±5.03
Spirituality	29.09±5.99	27.89±7.09
Communication	28.12±4.71	29.47±4.10
Stress management	21.91±6.76	22.79±5.15

Table 3) Estimation of effects of gender on aspects of lifestyle in patients with MI in 2019

Variable	β	Std. Error	p-value	Partial Eta Squared
Responsibility	-2.703	1.106	0.016	0.033
Physical activity	-2.109	1.267	0.098	0.016
Nutrition	-0.630	0.788	0.425	0.004
Spirituality	1.198	1.068	0.264	0.007
Communications	-1.354	0.771	0.081	0.017
Stress management	-0.878	1.079	0.417	0.004

Discussion

In the present study, factors affecting lifestyle adoption in palliative care of patients with MI were investigated. The results showed that the effect of gender on the linear combination of the dependent variable (i.e. lifestyle) was significant and 11.4% of changes in this variable had resulted from variation in gender. In this study, lifestyle scores obtained by women (151.18±29.69) were higher than those of men (144.71±25.51).

The results were also consistent with the findings reported by Abedi *et al*. in which a significant relationship had been observed between lifestyle and gender and also men's lifestyle had been poorer than that in women [14]. In the study by Manavifar *et al*., women in all age groups had been more active than men, maybe due to their health consciousness behaviors. In the given study, the total score of

health-promoting lifestyle behaviors was lower in women than in men, but it was not statistically significant. It seems that this discrepancy might be attributable to the small sample size (i.e. 67 female patients with hypertension) [9, 15]. However, in the study by Babak, the total score of lifestyle in older men had been reported significantly higher than that in women. It looks as if such a difference was the result of factors such as level of education as well as socioeconomic characteristics in men [16].

In the present study, only 27.3% of the patients were women, which could be considered as a limitation. So it was recommended to select a larger sample size of female patients in further research.

In this study, the lowest mean score was related to physical activity, which meant that these patients did not have a good level of health-promoting lifestyle behaviors in this aspect. In the studies by Azadbakht *et al*. [17], Manavifar *et al*. [9], Barough *et al*. [18], and Mansourian *et al*. [11], the majority of the individuals had poor lifestyle with regard to physical activity and exercise. Also, in the study by Sargazi *et al*., only 38% of the elderly aged over 65 years had reported moderate to vigorous physical activity [19]. This could be due to factors such as underdevelopment of sports culture in this age group, lack of sports facilities around city, and problems of commuting by older individuals in the city.

In this study, the score of health responsibility in men was on average 2.703 lower than that in women. This relationship was also significant with the effect size of 3.3% (p= 0.016). Health responsibility means that individuals reach a perception of what activities can be performed for being healthy [20]. The results of the present study also demonstrated that men had poor health responsibility than women. The findings of various investigations had further revealed that women had adopted significantly better behaviors than men in terms of health responsibility, nutrition, interpersonal relations, and spiritual growth in health-promoting lifestyle [21]. Research findings by Fuhrer and Stansfeld had also shown that women compared with men had healthier lifestyles. For example, men had alcohol consumption by 2.21 times more than women, and they were smoking 16 times more likely than women [22].

Conclusion

The results of the present study implied that the concept of lifestyle could be an analysis tool to better understand differences between genders as an effective variable in adopting a healthy lifestyle, especially in patients with MI. Therefore, there is a need to expand research and education programs about lifestyle in this group of patients and approve appropriate policies in this respect.

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