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# Investigation of health-promoting behaviors of employees of medical university: A perspective from West of Iran

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## Abstract:

**BACKGROUND:** Employees spend most of their time at work, and hence, it is important to pay attention to health-promoting behaviors. The purpose of the present study was to investigate the status of health-promoting behaviors of employees in the Medical University of Ilam-Iran.

**MATERIALS AND METHODS:** This cross-sectional, descriptive study has been conducted by the participation of 208 employees, whom selected through the simple random sampling method. In the present study, participants completed Walker's Health Promoting Life Style Profile II in the self-report form. The gathered data were analyzed using software at the significant level of 0.05. Data were analyzed by the independent samples *t*-test, one-way analysis of variance, and Pearson correlation coefficients.

**RESULTS:** The highest correlation of health-promoting behaviors was related to spiritual growth ( $r = 0.785$ ), stress management ( $r = 0.777$ ), interpersonal relationships ( $r = 0.767$ ), health responsibility ( $r = 0.730$ ), nutrition behaviors ( $r = 0.641$ ), and physical activity ( $r = 0.611$ ) were in the next places ( $P < 0.001$ ), respectively. Among sub-scales, the highest correlation was observed between spiritual growth and stress management ( $r = 0.676$ ,  $P < 0.001$ ) and the lowest correlation between physical activity and interpersonal relationships ( $r = 0.253$ ,  $P < 0.001$ ).

**CONCLUSIONS:** The score of physical activity was lower compared to other dimensions of health promoting behaviors. Therefore, it is necessary to make more effective interventional measures for improving physical activity status.

## Keywords:

Employees, health-promoting behavior, healthy lifestyles, physical activity

## Introduction

Lifestyle is a way of living and daily activity of individuals that affects the health status and quality of life. They take measures to maintain and promote his health and prevent diseases, including proper diet, sleep, exercise, body weight control, avoid smoking etc.<sup>[1-3]</sup> Studies have shown that the reason for many chronic diseases is the existence of a problem in lifestyle and human behaviors.<sup>[4,5]</sup> Changes in the lifestyle have

led to increased noncommunicable diseases such as cardiovascular disease, diabetes, and cancers in the societies.<sup>[6]</sup> According to the World Health Organization, the diseases related to lifestyle have allocated 38 million (68%) of the global burden of diseases in 2012<sup>[6]</sup> and will 7 cause out of each 10 deaths in developing countries in 2020.<sup>[7]</sup>

Several studies have examined the status of health-promoting behaviors in different populations. For instance, Mahmoodi *et al.*

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conducted a study to compare the health promoting behaviors among nurses, health, and administrative staff. Their results indicate that the highest score of health-promoting behaviors was related to health centers staff. The highest total score among health-promoting behaviors was related to nutrition and spiritual growth dimensions, and the lowest score was related to physical activity dimensions.<sup>[8]</sup> According to Chenary *et al.*, employees were in an undesirable situation in terms of health promoting behaviors that the highest score was related to spiritual growth dimension and the lowest score was related to physical activity dimension.<sup>[9]</sup> Furthermore, in the study of Kalroozi *et al.*, the mean total score of health-promoting behaviors in nurses were at an acceptable level, that the physical activity had the lowest mean score.<sup>[4]</sup>

According to Pender, health-promoting behaviors include any activity which undertaken by individuals or groups to increase the level of health and self-actualization and are the major indicators of investigation of the health status of individuals.<sup>[10,11]</sup> The health-promoting behaviors are the most important elements of health promoting lifestyle, including nutrition, physical activity, health responsibility, stress management, interpersonal relationship, and spiritual growth.<sup>[11]</sup>

Performing health-promoting behaviors are the appropriate way for people to maintain their health, prevention of noncommunicable diseases and has significant effect on quality of life.<sup>[12-14]</sup>

Health-promoting behaviors involve activities that lead to the development of well-being, and the potential health of individuals, families, and the community. Improving health-related behaviors will help maintain people's performance, their independence, increase their quality of life, and reduce health-care costs.<sup>[15]</sup>

The workplace is made up of physical, psychological, and social stimuli, each of which can be a source of fatigue and homesick, and these stresses and pressures can undesirable effect well-being physical, mental-psychological, health, its function. The employee job is one of the least active and widely used jobs in Iranian society, which can cause all the harms of sedentary life. However, compared to other jobs, less attention has been paid to the harms and anomalies of this group of society.<sup>[9,16]</sup> The emergence of health-promoting behaviors has significant potential for improving employee health, productivity, and quality of life in the workplace.<sup>[8]</sup>

Helping employees to have a healthy life is one of the goals of health promotion in the workplace. If health care providers do not follow health promotion

behaviors, it can impose costs on the health-care system.<sup>[8]</sup> Employees should be aware of proper health behaviors so that utilize from these behaviors to improve their health and quality of life. As like other behaviors, health-promoting behaviors are trainable and it would be possible to develop a proper lifestyle for employees through training, informing, and identifying healthy and unhealthy behaviors and habits and training the employees is an important priority to promote healthy lifestyles in the society, because employees are one of the most influential groups in improving the lifestyle of people and pushing them into healthy behaviors. The results of various studies show the effectiveness of educational interventions on health-promoting behaviors. Health-promoting behaviors have different dimensions, so designing training programs for all dimensions is time-consuming and probably less effective. However, the effectiveness of educational interventions on health-promoting behaviors in different groups of society depends on examining the status of health-promoting behaviors in these groups and extracting their problematic dimensions. The present study was conducted to assess the needs of an intervention study, the results of which are used to design educational programs to improve the physical activity dimension. The purpose of present study was to investigate the status of health promoting behaviors of employees in Medical University of Ilam.

The purpose of the present study was to investigate the status of health-promoting behaviors of employees in the Medical University of Ilam.

## Materials and Methods

This cross-sectional study has been conducted in Ilam City in West of Iran in 2019. The statistical population of the present study included all the employees of Ilam University of Medical Sciences. The sample size was estimated to 221 using the following Cochran formula. The participants of the study were selected by using the simple random sampling method. The including criteria was being the employee, lack of physical restraint, at least 1 year of work experience, the consent of individuals to participate in the study.

$$n = \frac{Nz^2pq}{Nz^2 + z^2pq}$$

$$= \frac{520 \times (1.96)^2 \times 0.5 \times 0.5}{520 \times (1.96)^2 + (1.96)^2 \times 0.5 \times 0.5} = 221$$

The study data were collected by Health Promoting LifeStyle Profile II (HPLP II) questionnaire which developed by Walker's.<sup>[17]</sup> This questionnaire is consisting of 52 items that its scoring is based on the 4-point Likert

scale (never 1, sometimes 2, usually 3, and always 4). The questionnaire have been classified in six dimensions, including 9 items for health responsibility (For example, I attend in individual care and health education programs), 8 items for physical activity (for example, I follow a regular exercise program), 9 items for spiritual growth (for example, I believe my life has a purpose), 9 items for nutrition (for example, I usually eat breakfast), 9 items for interpersonal relationships (for example, I talk with my friends about my problems and concerns) and 8 items for stress management (for example, I balance between my work and leisure time). The total score of health-promoting behaviors questionnaire is between 52 and 208, that higher score means the better status.<sup>[18]</sup>

For the data collection, the HPLP II questionnaire was distributing between 221 employees of the Ilam University of Medical Sciences. Participants completed the questionnaire in a self-report method. Data were analyzed by the SPSS software version 22 (IBM Corp, Armonk, New York) at the significant level of 0.05 (confidence interval was 95%) by conducting the Independent sample *t*-test, one-way analysis of variance (ANOVA) and Pearson correlation.

## Results

Totally, 208 employees were returned the HPLP II questionnaire. Respondent rate was 94.11. The mean age of the participants was  $39.49 \pm 7.76$ . Among 208 participants of the present study, 105 (50.5%) were male and 103 (49.5%) were female. 83.2% of participants were married, and rest of them were single.

Participants had between 1 and 30 years of work experience, and the average work experience was  $15.01 \pm 9.17$  years. 46.6% of employees had a master's degree. 74% of employees reported a medium income level. In the present study, the mean total score of health-promoting behaviors was  $138.93 \pm 22.96$ . It was equal to  $141.29 \pm 21.18$  for males and  $136.53 \pm 22.59$  for females. According to the independent sample *t*-test, the mean score of health-promoting behaviors in males was higher than females, but there was no statistically significant difference ( $P > 0.05$ ).

Among the dimensions of health promoting lifestyle, the highest score was related to the subgroup of spiritual growth with a score of  $27.07 \pm 5.94$ , and the lowest score was related to the subgroup of physical activity with a score of  $16.92 \pm 5.73$  [Table 1]. The results showed that the score of total health promoting behaviors of single individuals ( $141.51 \pm 22.72$ ) was higher than married individuals ( $138.41 \pm 23.04$ ). However, there was no statistically significant difference ( $P > 0.05$ ) [Table 2].

**Table 1: Possible range, observed range, mean and standard deviation of health-promoting behaviors in each subgroup and total score**

Variable	Possible range	Observed range	Mean±SD
Nutrition	9-36	15-36	24.25±3.94
Physical activity	8-32	8-30	16.92±5.73
Health responsibility	9-36	9-36	22.67±6.35
Spiritual growth	9-36	10-36	27.07±5.94
Interpersonal relationships	9-36	11-36	25.99±4.89
Stress management	8-32	10-32	22.03±4.98
Health-promoting behaviors	52-208	82-187	138.93±22.96

SD=Standard deviation

The independent sample *t*-test was used to investigate the relationship between gender, marital status, and total score of health-promoting behaviors and its dimensions [Table 2]. The mean score of physical activity, spiritual growth, and stress management dimensions as well as total score of health-promoting behaviors were higher in males compared to females, but a significant difference was only observed in the physical activity dimension ( $P < 0.05$ ). No statistically significant correlation was found between marital status and lifestyle. However, single people had better lifestyle. The findings of the independent sample *t*-test indicated the higher mean score of single individuals compared to married ones in all dimensions of lifestyle, except for responsibility and interpersonal relationships ( $P < 0.05$ ).

Pearson correlation analysis was used to examine the relationship between age and health-promoting behaviors. The results were indicated that no significant relationship between age and total score of health promoting lifestyle ( $P < 0.05$ ). There was a statistically significant relationship between age and dimension of physical activity ( $P < 0.05$ ). According to the one-way ANOVA, there was no significant difference between mean of health-promoting behaviors in terms of education level ( $P < 0.05$ ).

The findings of the one-way ANOVA were demonstrated that despite that lifestyle and dimensions of nutritional behaviors, accountability, and interpersonal relationships were higher in employees with higher income, but there was no statistically significant difference between the subgroups ( $P < 0.05$ ).

The results were showed that the highest mean score of health-promoting behaviors was related to the work history of 5 and 11 years. However, there was no statistically significant difference between dimensions and health-promoting behaviors in term of work experience ( $P < 0.05$ ).

The results related to correlation between subscales are presented in Table 3. The Pearson correlation test was

**Table 2: Independent sample t-test: Mean and standard deviation of health-promoting behaviors dimensions of by gender and marital status**

Variable	Male	Female	P	Married	Unmarried	P
Nutrition	24.01±3.74	24.50±4.14	0.367	24.14±3.82	24.83±4.50	0.367
Physical activity	19.01±5.73	14.08±4.90	0.001	16.82±5.61	17.46±6.32	0.547
Health responsibility	22.73±6.32	22.60±6.42	0.882	22.76±6.47	22.20±5.82	0.634
Spiritual growth	27.32±6.23	26.81±5.64	0.531	28/87±5/99	28/03±5/64	0.295
Interpersonal relationships	25.91±4.77	26.07±5.03	0.822	26.00±4.83	25.94±5.25	0.950
Stress management	22.30±4.71	21.76±5.25	0.438	21.82±5.01	23.06±4.77	0.182
Health-promoting behaviors	141.29±23.18	136.53±22.59	0.136	138.41±23.04	141.51±22.72	0.467

SD=Standard deviation

**Table 3: Pearson correlation coefficients between dimensions of health-promoting behaviors with total health-promoting behaviors**

Variable	Nutrition	Physical activity	Health responsibility	Spiritual growth	Interpersonal relations	Stress management	Health promoting behaviors total
Nutrition	1						
Physical activity	0.307	1					
Health responsibility	0.413	0.371	1				
Spiritual growth	0.428	0.306	0.374	1			
Interpersonal relations	0.412	0.253	0.494	0.592	1		
Stress management	0.367	0.335	0.402	0.676	0.597	1	
Health-promoting behaviors total	0.641	0.611	0.730	0.782	0.767	0.777	1

conducted to the investigation of correlation between total health promoting behaviors and its dimensions. Based on these results, a correlation was observed between total health-promoting behaviors and all dimensions. Highest correlation was found with spiritual growth ( $r = 0.785$ ) and then with stress management ( $r = 0.777$ ), interpersonal relationships ( $r = 0.767$ ), health responsibility ( $r = 0.730$ ), nutrition ( $r = 0.641$ ) and physical activity ( $r = 0.611$ ) ( $P < 0.001$ ). Among sub-scales, the highest correlation was observed between spiritual growth and stress management ( $r = 0.676$ ) and the lowest correlation between physical activity and interpersonal relationships ( $r = 0.253$ ) ( $P < 0.001$ ).

## Discussion

The purpose of the present study was to investigate the status of health-promoting lifestyle of employees in the Medical University of Ilam. The health-promoting behaviors in employees were in good status. In a study conducted by Moradi and Shojaizade on lifestyle of employees in health-care centers of Andimeshk, the findings of the study revealed that health-promoting behaviors were reported at an average level.<sup>[7]</sup> Several studies had been reported the moderate status of health-promoting lifestyle including the study of Chenary *et al.*<sup>[16]</sup> on the employees' Bushehr university of medical sciences, study of Mostafaei Najafabadi and Rezaei<sup>[15]</sup> on nurses that confirm present study. Furthermore, in a study conducted in Taiwan, the total score of most nurses was moderate, which is in accordance with the results of the present study.<sup>[19]</sup>

Totally, men compared to women had reported better lifestyle. This result is consistent with the results of Moradi and Shojaizade<sup>[7]</sup> Mahmoodi in the study on health promotion lifestyle had been showed that women had better lifestyle in compare to men which this result is not consistent with our findings. This difference in health-promoting behaviors among women and men can be due to the level of awareness, level of education, the availability of appropriate conditions for activity, and culture of community governing the health-promoting behaviors.<sup>[8]</sup>

Performing health-promoting behaviors had not correlation with marital status. Although single people had been reported better lifestyle than married ones. This result is consistent with the results of studies conducted by Chenary and Moradi and Shojaizade.<sup>[7,9]</sup>

The findings showed that the participants had appropriate condition in spiritual growth dimension in compared to other dimensions of health-promoting behaviors. Participants physical activity level was low and was not enough to impact on health status and quality of life.

A review of studies conducted showed that the results of similar studies are consistent with the results of the present study. In the studies of Chenary *et al.*,<sup>[9]</sup> Motlagh *et al.*,<sup>[5]</sup> Kalroozi *et al.*,<sup>[4]</sup> the highest score was in the dimension of spiritual growth that this results are consistent with the result of present studies.

In the present study, the lowest score on behavior was in the dimension of physical activity. In line

with this finding, the lowest score of behavior in the studies of Chenary *et al.*,<sup>[9]</sup> Edrisi *et al.*,<sup>[12]</sup> Moradi and Shojaizade,<sup>[7]</sup> McElligott *et al.*,<sup>[20]</sup> and Harooni *et al.*<sup>[21]</sup> were in the dimension of physical activity. In the study of Mostafaei Najafabadi and Rezaei,<sup>[15]</sup> the lowest score was related dimensions of stress management and physical activity.

In a study of Yu *et al.* spiritual growth, interpersonal relationships and nutrition had the highest and physical activity had the lowest score that in the present study, the dimension of spiritual growth and physical activity correspond to the relevant study.<sup>[22]</sup>

However, in a study of Wei *et al.*, the highest mean score was obtained for interpersonal relationships and the lowest mean score was related to the sense of responsibility and then, to physical activity.<sup>[23]</sup> Perhaps, the domination of Islamic values and attention to spiritual issues are the reason for higher score of spiritual growth in Iranian society. Spirituality allows individuals to find a unique meaning in life and believe in a supernatural power.<sup>[6,24]</sup>

In the present study, women had lower physical activity compared to men. It seems that physical activity facilities and freedom of action is more available for men. Women perceived more cultural and environmental constraints than men, and it could be a major reason to low intention of them to engage in physical activity programs. In a study which conducted by Dearden and Sheahan, physical activity in women was also undesirable and personal, familial and social factors such as lack of facilities, lack of safe places to walk, and time constraints led to decreased physical activity.<sup>[25]</sup> Charkazi *et al.* conducted a study to investigate lifestyle of teachers working in Gorgan and showed that men performed exercise more regularly than women.<sup>[26]</sup> Can *et al.* have reported that the mean score of physical activity is higher in men compared to women.<sup>[27]</sup>

According to the findings, no significant relationship was observed between age and total score of lifestyle of employees and lifestyle dimensions except for physical activity. In a study of Chenary *et al.* had been reported no significant relationship between age and promoting behaviors of employees.<sup>[9]</sup> Furthermore, these findings are consistence with the Bahar study on women promoting behaviors.<sup>[28]</sup> However, findings were not consistence with Rakhshani *et al.*'s study on the elderly people.<sup>[29]</sup> It should be mentioned that range of age in the present study was 30–50 years and Rakhshani *et al.*'s study was conducted the elderly people, which they should engage in promoting behaviors to maintain and improve their health status.

The findings were indicated that health-promoting lifestyle had not association to educational level. These findings were consistent with the results of Bahar *et al.* study which has been shown that education has no significant relationship with nutritional behaviors.<sup>[28]</sup> In the similar study which Chenary *et al.* conducted on employees, the education level has been identified as an effective factor of nutritional behaviors.<sup>[9]</sup> Also, in the another study, Chen *et al.* had been demonstrated that education level is an effective factor of nutritional status of elderly.<sup>[30]</sup> According to these results, it should be mentioned that the higher education is major reason of performing health-promoting behaviors in desire level and most of the participant in the present study had master degree and worked in the field of medical sciences.

The limitations of the present study are the lack of cooperation of employees to complete the questionnaire, incomplete answers to questions, and not observing their real behavior about healthy lifestyle, limited studies on employees' lifestyles.

It is suggested that similar studies be conducted on employees in other provinces to achieve more accurate results and better generalization of results in the Iranian employee community.

It is suggested that in order to promote a healthy lifestyle in employees, descriptive studies should be conducted to assess educational needs, and then, training programs tailored to extract the results should be designed for better effectiveness.

## Conclusions

The employees had low intensity of physical activity. In the other hand, they spend more time in worksite every day. Hence, it is suggesting that worksite manager should aware about the change worksite policies which support physical activity interventions in employees.

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## Ethical approval

The study was confirmed by the research ethics committee (code: IR. MEDILAM. REC.1398.098).

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## Conflicts of interest

There are no conflicts of interest.

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