

# Effectiveness of Hefz-Al-Sehah on the Number of Visits to health care centers

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## ABSTRACT

**Background:** Based on the Iranian traditional medicine, health protection principles (i.e., Hefz-Al-Sehah) include the instructions having a close relationship with the lifestyle.

**Aim:** To evaluate the effect of a tailored education intervention based on the Iranian traditional medicine on reducing the number of visits of the insured.

**Methods:** This trial was performed in Tehran, Iran, in 2017. The population of this study consisted of 101 insured people in the Iranian Health Insurance Organization who were in the 50 - 70 percentile rank in terms of the number of visits to the health centers during the previous year. They were randomly divided into intervention and control groups. The intervention group (n=51) received the Hefz-Al-Sehah education both through face-to-face and virtual approaches. The control group (n=50) did not receive any education.

**Results:** Results showed that the two study groups were the same in terms of demographic characteristics. According to the results, a significant decrease was found in the number of visits to the laboratory (I=-13.46, C=4.81), drug store (I=-10.59, C=0.91), radiology center (I=-4.65, C=-1.47), and clinic (I=-1.37, C=-0.28) before and after the intervention in the intervention group compared to the control group. (P<0.001)

**Conclusion:** Our results revealed that, the Hefz-Al-Sehah education is effective in reducing the number of visits to the health centers. Therefore, adherence to its instructions is recommended to increase the health and reduce the number of visits.

**Trial Registration:** IRCT20171125037625N1

**Keywords:** Health, Education, Iranian Traditional Medicine, Hefz-Al-Sehah.

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## INTRODUCTION

In the medical science, prevention has always been superior to the treatment. In the Iranian medicine references, it is referred to as "Hefz-Al-Sehah", which is of special importance. Iranian medical scientists introduce the medicine as a science that pursues two goals: first, protection of the health; second, treatment of the diseases. They refer to the health protection as the first goal and thus, it is a more important task for the physicians. According to the Iranian medicine, observance of the health protection principles (Hefz-Al-Sehah) is effective not only in preventing the diseases, but also in their treatment.<sup>[1]</sup> Hefz-Al-Sehah includes the instructions having a close relationship with the lifestyle.<sup>[2]</sup> Today, with the evolution of the technology, lifestyle has changed, which unfortunately has had a detrimental effect on the people's health and quality of life. This has increased the number of visits to the health centers, and subsequently imposed heavy costs upon the individuals and governments that are responsible for providing the healthcare services.<sup>[3]</sup> In 2013, there were over 165 million registered visits in Iran for 35 million people covered by the insurance, which has brought heavy costs to the insurance companies and citizens.<sup>[4]</sup> According to the reports of the Statistics Center, more than half of all the health care costs were paid by the people from 2002 to 2008 and were inevitably included in the household expenditure basket.<sup>[5]</sup> Therefore, it is necessary to preserve and improve the public health and thus, reducing the

number of visits and medical costs. Health promotion and disease prevention through education is one of the most successful and cost-effective ways to achieve this purpose. Studies have shown that the lifestyle education and correction can improve the quality of life and prevent and control many diseases, such as ischaemic heart disease,<sup>[6]</sup> metabolic syndrome,<sup>[7]</sup> diabetes,<sup>[8]</sup> chronic obstructive pulmonary disease (COPD),<sup>[9]</sup> obesity,<sup>[10]</sup> depression and anxiety,<sup>[11]</sup> dental care,<sup>[12]</sup> osteoporosis,<sup>[13]</sup> and sleep hygiene.<sup>[14]</sup> Educating the health protection principles based on the Iranian medicine can be effective in promoting the health and preventing the disease by modifying the lifestyle. There are many commonalities between these principles in the classical medicine, but since the Iranian medicine also considers the difference between individuals' temperaments, so the Iranian medicine might have a better functionality toward this purpose.<sup>[15]</sup> Studies have shown that the lifestyle changes based on the Iranian medicine can be effective and useful in treatment of depression,<sup>[16]</sup> dry eye disease,<sup>[17, 18]</sup> constipation,<sup>[19]</sup> diabetes,<sup>[20]</sup> reflux,<sup>[21]</sup> and health promotion,<sup>[22]</sup> and therefore, following the instructions has been suggested.

**Objective:** This clinical trial was carried out to evaluate the effect of health education program based on the Iranian traditional medicine on reducing the use of medical services.

## METHODS

**Trial design:** A parallel group randomized trial with two groups (intervention and control) was conducted in Tehran, Iran, in 2017. The trial was approved by the ethics committee of Shahed University (IR.Shahed.REC.1396.83) and accordingly registered in the Iranian Registry of Clinical Trials (IRCT20171125037625N1).

**Participants:** The study population was consisted of all insured individuals registered by the Iranian Health Insurance Organization who were in 50 to 70 percentile in terms of the number of visits to the health centers (clinic, drug store, laboratory, and radiology center) based on the health insurance software in 2016. Inclusion criteria were signing the informed written consent for participation in the study, having 15-50 years of age, lack of pregnancy and lactation, no history of psychiatric disorders and serious and specific diseases (such as multiple sclerosis (MS), hemophilia, dialysis, and kidney transplantation), Exclusion criteria included unwillingness to participate in the study, pregnancy at the time of study, and having psychiatric disorders, serious and specific diseases (MS, hemophilia, dialysis, and kidney transplantation). Eligible participants then randomly were selected from the list and assigned to the intervention and the control groups. The intervention group received the Hefz-Al-Sehah education and the control group received nothing.

**Intervention:** The educational contents were extracted from the Iranian medicine texts in order to perform the Hefz-Al-Sehah education. The intervention group initially received face-to-face education for two sessions each lasted 2-hours. Each session consisted of a group of up to 10 members. In the first session, the educational topics of the Hefz-Al-Sehah were taught as follows: 20 minutes introduction, 35 minutes for eating and drinking, 30 minutes for movement and rest, 20 minutes for sleeping and waking up, and 15 minutes for mental states. Educational topics for the second session and their corresponding durations included: 30 minutes for eating and drinking, 20 minutes for movement and rest, 15 minutes for sleeping and waking up, 20 minutes for waste disposal and preservation of the essential materials, 10 minutes for mental states, and 25 minutes for air. After face-to-face education, they also received the reminders during the following 6 months through Internet. The number and topic of the reminder messages were: introduction (41 messages), eating and drinking (93 messages), movement and rest (59 messages), sleeping and waking up (66 messages), waste disposal and preservation of the essential materials (52 messages), mental states (48 messages), and air (33 messages). A summary of topics are presented in Table 1.

**Measure:** The primary outcome of this study was the number of visits to the clinic, laboratory, drug store, and radiology center; which were evaluated and compared at two points in time: before intervention (baseline) and after intervention (follow-up). The information was derived from electronic records of insured for both intervention and control groups.

at two points in time:

Sample size

For estimating the sample size, 50 individuals were considered per each group using the following formula:

$$n = 2 \left( Z_{\frac{\alpha}{2}} + Z_{\beta} \right)^2 / d^2$$

Values for parameters to calculate the sample size were:  $\alpha=0.05$ ,  $\beta=0.1$ , and  $d=0.6$ . However, in practice we recruited 75 individuals per each group to overcome possible drop outs.

**Randomization:** Randomization was carried out by an external body not connected to the study using a computer generated sequences based on exiting electronic records for selecting required sample size from the list of eligible individuals.

**Statistical analysis:** Descriptive statistics (mean, standard deviation, and frequency) were used to explore the data. The normality of data was assessed using the Kolmogorov-Smirnov (K-S) analysis. Comparison between and within groups were made using Chi-squared test, Mann-Whitney U test, and Wilcoxon Signed-Rank test. The SPSS software was used for data analysis and a significance level of 5% was considered as statistically significant.

## RESULTS

**Participants:** The study flowchart is presented in Fig. 1. In all 200 individuals were enrolled. Of these 50 individuals declined to participate. The remaining 150 eligible participants were randomly allocated to the intervention and the control groups (75 per each group). There were no significant differences between two groups. The results are shown in Table 1.

**Number of visits:** Numbers of visits before and after intervention are shown in Table 2. The analysis of the data showed that the number of visits to laboratory, drug store, radiology center, and clinic was significantly decreased in the intervention group ( $P<0.001$ ). However, in the control group, the number of visits to the laboratory was increased significantly (17.92 vs. 22.73 the mean number of visits before and after intervention respectively;  $P=0.007$ ). The number of visits to the drug store was also increased, but it was not significant (15.34 vs. 16.25 the mean number of visits before and after intervention respectively;  $P=0.470$ ). The number of visits to the radiology center was reduced significantly (3.84 vs. 2.37 the mean number of visits before and after intervention respectively;  $P<0.001$ ). The number of visits to the clinic was also reduced, but it was just significant (1.13 vs. 0.85 the mean number of visits before and after intervention respectively;  $P=0.05$ ).

In addition, the mean difference of number of visits to the laboratory, drug store, radiology center, and clinic before and after the intervention was compared in both study groups. The results indicated that the difference was significantly reduced in the intervention group compared to the control group in terms of number of visits to the laboratory, drug store, radiology center, and clinic ( $P<0.001$ ). The findings are presented in Table2.

**Table 1:** Hefa-AI-Sehah topics

	Time of face to face education	Number of educational massages
<b>Introduction</b>	20 minutes	41 messages
The importance of Iranian Traditional Medicine in health promotion and prevention medicine		
Definition of Hefz-AI-Sehah and its six principles		
Definition of temperament and its types		
<b>Air</b>	25 minutes	33 messages
Outdoor guidelines during air pollution		
Indoor air purification guidelines during air pollution		
Dietary guidelines during air pollution		
Physical activity and exercise guidelines during air pollution		
Other lifestyle guidelines during air pollution		
Hot and dry climates guidelines according to each temperament		
Hot and humid climates guidelines according to each temperament		
Cold and dry climates guidelines according to each temperament		
Cold and humid climates guidelines according to each temperament		
Spring guidelines according to each temperament		
Summer guidelines according to each temperament		
Fall guidelines according to each temperament		
Winter guidelines according to each temperament		
<b>Movement and rest</b>	50 minutes	59 messages
Definition of moderate exercise		
Pre-exercise recommendations according to each temperament		
Exercise recommendations according to each temperament		
Post-exercise recommendations according to each temperament		
<b>Sleeping and waking up</b>	35 minutes	66 messages
Recommended amount of sleep according to each age and temperament		
The best times to sleep		
Pre-sleep instructions		
Instructions related to the place of sleep		
Sleeping instructions		
<b>Eating and drinking</b>	65 minutes	93 messages
Classification of foods based on Iranian Traditional Medicine		
General instructions for eating		
General instructions for drinking		
Appropriated foods for each temperament		
Foods that should not be eaten at the same time		
Arrangement to eating a variety kind of foods		
Avoidance of harmful foods and beverages		
Instructions for food containers		
<b>Waste disposal and preservation of the essential materials</b>	20 minutes	52 messages
All kinds of natural body cleansing		
All kinds of body cleansing by physician		
Instructions for body cleansing according to each temperament		
Instructions for preservation of the body essential materials according to each temperament		
<b>Mental states</b>	25 minutes	48 messages
Types of mental states and instructions for each type according to each temperament		

**Table 2:** Frequency and percentage of demographic variables studied in the intervention and control group.

	Intervention (n =51)		Control (n =50)		P
	No.	(%)	No.	(%)	
Gender					0.365
Male	23	(45)	27	(54)	
Female	28	(55)	23	(46)	
Age					0.467
Lower 40 years	30	(59)	26	(52)	
Upper 40 years	21	(41)	24	(48)	
Education					0.632
Non-academic education	44	(86)	41	(82)	
Academic education	7	(14)	9	(18)	
Occupation					0.072
Employed	38	(75)	28	(56)	
Housewife	8	(15)	14	(28)	
Retired	5	(5)	8	(16)	

**Table 3:** Number of visits to laboratory, drug store, radiology center, and clinic in two groups at baseline and follow-up evaluation

	Before Intervention		After Intervention		P-value*
	Mean (SD)		Mean (SD)	Mean Difference	
Laboratory					
Intervention	20.63	(13.28)	7.17	(10.23)	-13.46
Control	17.92	(9.06)	22.73	(11.53)	4.81
P-value**	0.232		<0.001		<0.001
Drug store					
Intervention	17.49	(8.84)	6.90	(5.82)	-10.59
Control					

Control	15.34 (7.32)	16.25 (10.00)	0.91	0.470
P-value**	0.185	<0.001	<0.001	
Radiology center				
Intervention	5.30 (4.35)	0.65 (1.15)	-4.65	<0.001
Control	3.84 (3.02)	2.37 (1.91)	-1.47	<0.001
P-value**	0.052	<0.001	<0.001	
Clinic				
Intervention	1.63 (1.57)	0.26 (0.82)	-1.37	<0.001
Control	1.13 (1.18)	0.85 (0.91)	-0.28	0.048
P-value**	0.072	0.001	<0.001	

\* Derived from paired samples t-test, \*\*Derived from independent samples t-test.

## DISCUSSION

The findings from this study highlighted that a traditional lifestyle intervention (Hefz-Al-Sehah) could be useful in improving people's health and decreasing the burden of health care system. In fact, inappropriate lifestyles might increase the number of visits and impose extra costs to both governments and families. There is evidence that a large portion of the costs associated with the household expenditure is spent on medicine and treatment.<sup>[5]</sup> However, it is argued that education and prevention is the best way to reduce the number of visits and medical costs. Tapp et al.<sup>22</sup> and Michael Laxy et al.<sup>23</sup> showed that the lifestyle education was effective in reducing the number of visits and treatment costs of the asthmatic and diabetic patients.

Similar to previous studies<sup>[16]-[21]</sup> the findings from current study showed that adherence to the health and lifestyle recommendations based on the teachings of traditional Iranian medicine, considering the temperaments and personal characteristics of the individuals might be useful. Also, Sabourian et al.,<sup>[15]</sup> in a study on the role of Iranian traditional medicine in preventing diabetes and its progression showed that the strategies for prevention of diabetes and its progression includes diet, weight loss, physical activity, adequate sleeping and rest, and improving the behavioral habits that are very similar with classical medicine.

As far as life style concern the Iranian traditional medicine focuses on six main topics that are air, eating and drinking, movement and rest, sleeping and waking up, waste disposal and preserving essential materials, and mental state.<sup>2</sup> Participants in the study received the topics well and showed support for following-up the instructions.<sup>24</sup> In general, the instructions were simple, easy to practice and inexpensive. Studies from Iran and elsewhere on different topics showed that the proper lifestyle education was effective in controlling and reducing the disease burden in different populations and settings.<sup>7,10,11,16,17,23,25,26</sup>

**Strengths and limitations:** The study was benefited from a randomized design and we used the data recoded by the Iranian Health Insurance Organization and thus the accuracy was high. However, it seems that a study with a bigger sample size needed to ensure that the results could be reproduced. In addition, the study lacked a different educational intervention for the control group to reduce the placebo effect.

## CONCLUSION

The findings showed that the lifestyle education based on the Iranian traditional medicine and its recommendations is effective in reducing the number of visits of the insured. It is

simple, easy and could be recommended to use this approach in order to improve public's health.

**Acknowledgement:** The authors would like to thank all the esteemed staff of the Iranian Traditional Medicine Health Center who cooperated with us in providing the space to hold the training sessions as well as the Health Insurance Organization for providing us with the data on the number of visits of the insured under study, and all the participants who helped us in performing the study.

**Funding:** No funding was provided for this research.

**Declaration of Competing Interest:** No conflict of interest has been declared by the authors.

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Figure 1: The study flowchart

