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Validity and Reliability Evaluation of the Dietary Habits Scale for Adults (25-55 years old) Derived from Iranian Traditional Medicine

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A B S T R A C T

Background: Currently, a healthy lifestyle that also covers eating habits plays a vital role in the prevention of many diseases, especially chronic diseases. These habits have been precisely classified in the texts of Iranian traditional medicine. These classifications help better understand and make better use of food, which can be confirmed with new tools and information. This study aimed to evaluate the validity and reliability of dietary habits scale for adults derived from Iranian medicine.

Methods: This cross-sectional study was designed to develop the dietary habits scale and evaluate its validity and reliability. The scale was drafted with two subscales including eating manners and drinking manners based on the principles of Iranian medicine. Afterward, to determine the construct validity and reliability of the scale, it was administered to 40 people aged 25 to 55 years. Data were analyzed using SPSS21 and AMOS software.

Results: The content validity ratio (CVR) and content validity index (CVI) were 0.99 and 0.79, respectively. The confirmatory factor analysis (CFA) test was used to evaluate its dimensionality. The CFMIN/DF was 1.80, and RMSEA, GFI, and CFI were 0.05, 0.91, and 0.93, respectively. The internal consistency of the scale was confirmed by calculating the Cronbach's alpha coefficient (α = 0.805).

Conclusion: The eating habits scale developed based on the Iranian medicine has acceptable reliability and validity for its administration on the participants. In future studies, researchers are recommended to focus on different demographic groups and examine the impact of contextual and clinical variables.

Keywords: Eating Habits, Traditional Medicine, Eating Manners, Drinking Manners, Psychometrics

Introduction

Nutrition as one of the important aspects of lifestyle is directly related to health and diseases. Nutritional problems are the root cause of many major chronic diseases in most countries. Food is one of the basic human needs and one of the important indicators of human health and value (1). Nutrition is an important issue for people. Many studies have shown that nutrition plays an important role in people's health and diseases and is one of the most important factors for improving health (2). Eating habits which refer to "what food, how, and when to eat" are among the main elements of disease treatment plants in the modern world. Accordingly, sometimes by changing a wrong eating habit into the right habit, very desirable results can be achieved. Paying attention to eating habits can promote self-management eating behaviors in the patient and affect the progression of the disease. Assessment of a person's eating habits should be in line with disease planning, control, and management including nutrition education (3).

Currently, lifestyle modification is known as an

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introduction to the correction and treatment of many diseases. Besides, having a healthy lifestyle is known to be effective in the prevention of many diseases, especially chronic diseases. In Iranian ancient medicine, which has been known for more than a thousand years, wise scholars have defined and developed six essential principles to prevent diseases and also identify the first step of treating diseases. Compliance with these six principles can contribute to maintaining health. For this reason, these six principles are also called the principles of health protection. These six principles include the principle of air, the principle of eating and drinking, the principle of sleep and wakefulness, the principle of movement and stillness, the principle of confinement and excretion of substances, and the principle of sensual qualities (4). The instructions provided in line with these principles seek to maintain health. However, the principle of eating and drinking is one of the important principles that can be controlled and observed throughout life and in all societies. Therefore, since the focus of Iranian medicine is to treat diseases using non-pharmacological procedures, it provides a set of eating and drinking instructions highlighted in various texts. In his comprehensive book on medicine Razi, one of the greatest physicians of Iranian medicine said: "Do not treat diseases with medicine when treatment is possible with food"(5,6). Besides, Mohammad Kazem Gilani stated in the book of Naseri Health: "The main reason that most people are exposed to deadly diseases and illnesses, experience the state of incomplete physical health, or constantly report boredom, physical weakness, and indigestion and appetite problem is that they do not adhere to eating and drinking guidelines and other health instructions related to the six essential principles" (7).

Given the significance of food for human health, the Iranian traditional medicine texts have provided precise classifications of food to better understand and more effectively use food. These classifications were very efficient at the time they were published and their trustworthiness can be confirmed with new tools and information. Therefore, the quality and quantity of food consumed by people have a direct effect on the quality and quantity of phlegm produced in the liver (8). Digestion is one of the key and important functions. If the digestive system functions well, it can provide nutritive materials needed by the body. However, if the digestive system does not function properly it does not provide the nourishment needed by the body and has adverse effects on the body. Therefore, if eating and drinking principle is well observed, it will have a great effect on gastric digestion, which is the beginning of the digestion process and will play an essential role in maintaining health and preventing diseases.

Various references of Iranian traditional medicine have provided some instructions about the observance of the principle of eating and drinking. Examples of these references are Mofarah al-Gholoob by Mohammad AkbarshahArzani on eating and drinking instructions (9), Kholase al Hekmahby Hakim Mohammad Hossein AghiliKhorasani on the etiquette of eating and drinking water (10), and al-SehatNaseriby Mohammad Kazem Gilani, nicknamed Malik al-Ataba, dealing with eating and drinking habits (11).

However, some studies have been conducted on psychometrics of dietary habits scale such as food frequency questionnaires (12, 13) and children eating behavior questionnaire (14) in Iran, none of these tools are derived from Iranian traditional medicine. Therefore, developing a standard tool is essential to investigate the effect of eating habits mentioned in traditional medicine sources on health and diseases. Besides, there is a self-structured questionnaire addressing eating habits highlighted in Iranian traditional medicine. Accordingly, the present study aimed to develop the dietary habits scale and evaluate its validity and reliability based on the instructions provided by Iranian traditional medicine.

Materials and Methods

The present study was a cross-sectional

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methodological study that developed and evaluated the validity and reliability of the dietary habits scale.

The participants in the cultural adaptation part of the study dealing with the face and content validity of the scale were key informants, experts, and specialists in the field of Iranian traditional medicine. The participants in this stage were selected using purposive sampling. Willingness to participate in the study and having a board of expertise in the field of traditional medicine were among the criteria for entering the study. To this end, the scale was completed face to face and via email by seven specialists including five specialists of traditional medicine and two epidemiologists.

The construct validity and reliability of the scale were assessed using the data from a sample of 40 people aged 25 to 55 years. Ability to read and write and willingness to participate in the study were considered as inclusion criteria

The instrument used in this study was a scale that addressed two dimensions: eating and drinking manners. The eating manners were addressed using 17 items and the drinking manners were addressed using 5 items. Each item was scored numerically on a scale of 1 to 3, and the correct answer was assigned a score of 3by a respondent.

The content validity of the scale was assessed using the content validity ratio (CVR) and content validity index (CVI). The former evaluates the necessity of an item in the instrument and the latter measure the relevance of the item. Face validity was calculated using the mean CVI. Afterward, the scale was distributed among the respondents and its construct validity and reliability were assessed.

The reliability of the scale was assessed using Cronbach's alpha coefficient. The Cronbach's alpha values higher than 0.9 were considered as excellent, the values ranging from 0.7 to 0.9 were rated good, the values ranging from 0.5 to 0.7 were considered average, and finally values less than 0.5 were unacceptable. Only the items with acceptable internal consistency were excluded from the analysis. Besides, the Cronbach's alpha coefficient for each subscale was measured separately. Afterward, the average weight measured via the Cronbach's alpha coefficients for the subscales was considered as the total Cronbach's alpha of the scale, which was used as the basis for weighting the number of items in each scale.

Before distributing the questionnaires among the samples, the required letter of introduction and permission was obtained. The paper version of the anonymous questionnaire was distributed in person by the researcher. It should be mentioned that oral consent was also obtained from the participants for completing the questionnaire.

The collected data were analyzed using SPSS software (version 20) for Descriptive statistics analysis and AMOS software used for Confirmatory factor analysis (CFA). The internal consistency of the scale was assessed using Cronbach's alpha coefficient and its construct validity was evaluated using CFA.

Results

To assess the content validity of the scale, 7 specialists including faculty members and specialists with a Ph.D. degree or a board degree in medicine were surveyed. The content validity of the scale was assessed using the CVR which was equal to 0.99. The CVI was equal to 0.86, confirming the relevance of the items in the scale. Besides, since according to experts, the items with a CVI above 0.79 were acceptable and the items with a CVI above 0.6 needed revisions, only four items were revised and the remaining items were confirmed. The face validity for all items in the scale was 4.10 using a 5-point Likert scale.

The results of the CFA showed that the root mean square error of approximation (RMSEA) was 0.05.The goodness of fit index (GFI), comparative fit index (CFI), and the chi-square statistics/ degrees of freedom (CFMIN/DF) were 0.91, 0.93, and 1.80, respectively. The fit indices in the factor analysis confirmed the good fit of the model. In this model, items 1 to 22 were loaded on the eating habits factor. The factor load for all items was higher than 0.4, implying that all items did not

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need to be revised as indicated by the factor loads (Figure 1).

The factor loads for the items and the standard errors are shown in Table 1.

The internal consistency of the scale was assessed using Cronbach's alpha coefficient with a value of 0.805, indicating that the internal consistency of the scale was acceptable.

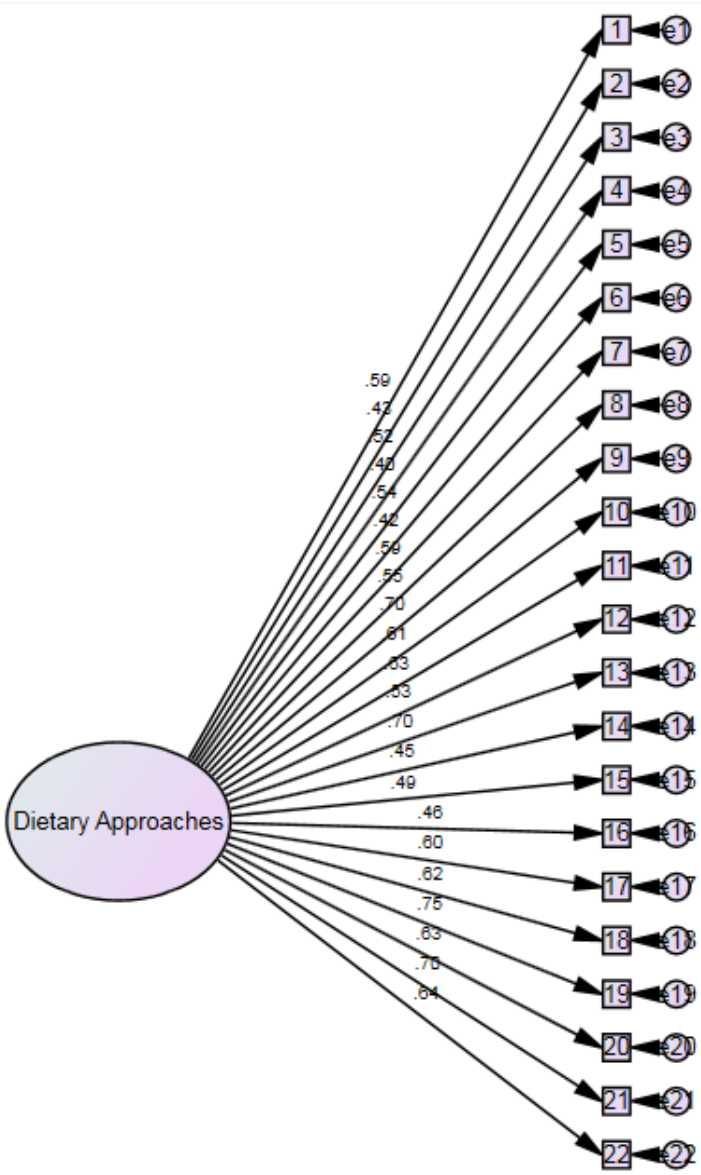

Figure 1. Confirmatory factor analysis

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Table 1. The factor loads and standard errors for the items

Items	Factor loads	Standard errors
Q1	0.588	1
Q2	0.427	0.873
Q3	0.523	0.857
Q4	0.404	0.707
Q5	0.544	0.924
Q6	0.421	0.844
Q7	0.591	0.814
Q8	0.548	1.09
Q9	0.700	1.099
Q10	0.610	1.056
Q11	0.626	0.957
Q12	0.531	0.928
Q13	0.697	1.307
Q14	0.450	1.022
Q15	0.494	0.995
Q16	0.457	1.01
Q17	0.604	1.219
Q18	0.624	1.096
Q19	0.751	1.492
Q20	0.634	1.332
Q21	0.704	1.174
Q22	0.644	1.286

Q=Question

Discussion

The validity of the Dietary Habits Scale for Adults developed based on the instructions of the Iranian traditional medicine was evaluated using content, face, and construct validity indices and its reliability was assessed by measuring its internal consistency. CFA was also run to evaluate the construct validity of the scale. The results of this study suggested that the data fitted the factor structure, providing the desired and consistent construct validity and confirming the GFI of the model factor. Factor loadings assessed by factor analysis were confirmed for all items in the scale.

After performing factor analysis, Cronbach's alpha coefficient was estimated to measure the internal consistency of the scale and the corresponding value was 0.805, indicating that the scale had a strong internal consistency. Nunnally and Bernstein (1995) (15) suggested an internal consistency coefficient above 70. Cortina (1993) (16) believed that internal consistency and homogeneity of the items affect the reliability of the scale, as indicated by the findings of the present study.

The scale developed in this study can be used as a useful tool to help measure eating habits and their components. Furthermore, the reliability and validity of the developed scale were acceptable and satisfactory compared to its original version and similar scales. The data obtained from administering the scale can be used to improve the eating habits of people aged 25 to 55 years. Besides, these data can be used by physicians to assess the severity of diseases caused by eating habits especially chronic diseases in different groups of patients. Overall, it can be suggested that the Dietary Habits Scale for Adults developed based on the instructions of the Iranian traditional medicine has a relatively good construct (theoretical) validity in studies related to Iran. One of the main limitations of this research was the lack of texts related to the topic, which reduced the possibility of a comprehensive and accurate comparison of the findings. However, an attempt was made to compare it with other related tools.

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Conclusion

The present study is one of the first studies in Iran to examine the eating habits of people aged 25 to 55 years. The insights from this study can provide reliable evidence of basic needs for this group of people. Future studies can focus on different populations and explore the effect of contextual and clinical variables on them.

Ethical Consideration

This research was approved by the Ethics Committee of Kerman University of Medical Sciences with code IRCT20200524047558N1 was obtained.

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Conflict of interest

The authors declared no conflict of interests.

Authors, contribution

H.A designed research; M.S and M.N conducted research; H.A and M.N analyzed the data; and H.A wrote the paper. All authors read and approved the final manuscript.

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