



Concept of Food in Persian Medicine

Mohammad Ali Zareian¹, Shabnam Rafiei¹, Alireza Yargholi¹, Mohammad Ahmadi²,
Laila Shirbeigi¹, Fatemeh Nejatbakhsh^{1,3*}

¹Department of Traditional Medicine, School of Persian Medicine, Tehran University of Medical Sciences, Tehran, Iran

²Department of Community Nutrition, National Nutrition and Food Technology Research Institute, Faculty of Nutrition and Sciences and Food Technology, Shahid Beheshti University of Medical Sciences, Tehran, Iran

³Food Microbiology Research Center, Tehran University of Medical Sciences, Tehran, Iran

Received: 17 Sep 2021

Revised: 21 Nov 2021

Accepted: 16 Dec 2021

Abstract

In Persian Medicine (PM), food is considered as a basic concept, the proper understanding of which, will prove beneficial in nutrition of healthy individuals and diet therapy of patients. The objective of this article is to examine the defining attributes of the concept of food in PM. Concept analysis was performed using Walker & Avant's approach, comprising eight stages of 1) selecting a concept; 2) determining the objective of analysis; 3) identifying all uses of the concept; 4) determining the defining attributes of the concept; 5) constructing a model case; 6) constructing borderline, contrary and invented cases; 7) identifying antecedents and consequences; and 8) defining empirical referent. The results showed that, the defining attributes of the concept of food in PM are: 1) replacement of body tissues and organs; 2) resemblance to tissues and organs; 3) adding to body quantity; 4) prerequisites for childbirth; 5) delicious and sweet or tasteless or greasy flavors; and 6) production of blood humors, warmth and moisture. In order to clarify the concept, borderline, contrary and invented cases were also presented. The results of this study can provide an objective and understandable picture of the use of the concept of food for researchers and open new horizons in nutrition and diet therapy.

Keywords: Iranian traditional medicine; Nutrigenomics; Temperament; Nuzj; Digestion

Introduction

One of the definitions of human is the omnivorous animal, which has many implications in nutrition. Prior to the industrial advances in recent centuries, human access to food depended on climate, season, culture, and religion, whereas nowadays, technology has diminished or eliminated many of these boundaries, bestowing man with unlimited access to all foodstuff [1]. But the fundamental question remains, "What is worthy as food for humans?" Different approaches to nutrition, such as vegetarianism and raw veganism, and their subtypes, and the various advertised diets,

show that human beings still do not have a proper answer to this question. In the introduction of the book "Krause's food & the nutrition care process", food is defined as follows: "Food provides energy and building materials for countless substances that are essential for the growth and survival of every human being" [2].

At the first glance, this definition is similar to the definition of the food in Persian Medicine (PM), which states that "food replaces what is lost from the body" [3]. However, it is not certain whether this definition

Citation: Zareian MA, Rafiei S, Yargholi A, Ahmadi M, Shirbeigi L, Nejatbakhsh F. **Concept of Food in Persian Medicine.** Trad Integr Med 2022;7(3):350-356.

*Corresponding Author: Fatemeh Nejatbakhsh

Department of Traditional Medicine, School of Persian Medicine, Tehran University of Medical Sciences, Tehran, Iran

Email: nejatbakhsh@tums.ac.ir

Copyright © 2022 Tehran University of Medical Sciences. Published by Tehran University of Medical Sciences. This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International license (<https://creativecommons.org/licenses/by-nc/4.0/>). Noncommercial uses of the work are permitted, provided the original work is properly cited.



is sufficient or there are more details to explain and clarify the concept of food in PM references, and deserve research and report. The objective of this article is to find an answer to this question to ultimately determine the defining attributes of the concept of food in PM.

Methods

This study was conducted as a concept analysis aimed to investigate the concept of food in PM. Concept analysis is a type of research, in which the attributes and relationships of the concept with other meanings are investigated. Clarification of concepts is very important in this type of research [4]. Taking the Walker & Avant's approach, this study was designed to analyze the concept of food [5]. This approach is a simple variant of Wilson's eleven-stage approach and has the advantage of using and deducing results in the clinic, in addition to clarifying the concept. Walker & Avant's approach includes the eight following stages: 1) selecting a concept; 2) determining analysis objectives; 3) identifying all uses of the concept; 4) determining the defining attributes of the concept; 5) constructing a model case; 6) recognizing borderline, contrary and invented cases; 7) identifying antecedents and consequences; and 8) defining empirical referent. In this study, the books written by top Persian physicians of the 4th to 13th centuries, including Avicenna, Rhazes, Azam Khan, Arzaani, Baha-al-dolah Raazi, and Hakim Aghili, have been reviewed and the keywords "food" (طعام /*Ta'aam* or غذا /*Ghazaa*) and "nutrition" (تغذیه /*Taghzieh*) and their derivatives were searched using Noor Library software. The Noor Library is a comprehensive software with various tools that provides access to about a thousand PM texts from the 4th to the 13th century and has facilitated searching in these references.

Results

1. Selecting a concept

Food is a qualitative concept in PM, the clarification and analysis of which can open new horizons in the knowledge of nutrition and diet therapy. We selected this concept as it is a fundamental one, and no study has been conducted in this regard so far.

2. Determining the objective of the analysis

Using Walker and Avant approach, the meanings, characteristics and features of the concept of food were investigated, in order to facilitate scientific and practical application in clinical studies.

3. Defining the concept and identifying its uses

Various definitions and applications have been specified for food in various texts, which are discussed separately below:

rately below:

In *Kamil Al-Sina'a*, Ahwaazi has stated that the human body is subtly or conspicuously diminishing constantly due to internal and external heat, and therefore, needs a replacement for what is lost from tissues and organs. On the other hand, due to differences in the temperaments of organs and tissues, the body needs different foods so that each organ gains access to a suitable replacement similar to what it has lost [6].

- In the physics (*Tabi'iaat*) section of Alaei encyclopedia, Avicenna mentions two kinds of change in the quantity of an object, namely hypertrophy (*Nomov* / نمو) and atrophy (*Zobool* / ذبول). Hypertrophy is dependent on food that can replace lost tissues, resemble tissues and as a result increase the body in quantity. Food is potentially, but not actually similar to the body. Upon action of body faculties on food, it actually resembles the organs of the body, flows through body, replaces the lost tissues and organs and if all conditions are met, causes hypertrophy. The feeding faculty (*qāziye* / غازیه) is active throughout life, although it produces less food than the lost content with aging. The developmental faculty (*Nāmīeh* / نامیه) functions until adulthood, then comes to a halt. After puberty, the productive faculty (*Movalledeh* / مولده) begins functioning [7].

Abu Sahl al-Masihi has given a similar definition in *Al-Me'ah fi Al-Tib*, explaining that food causes growth as long as the body is growing, and keeps it in a state of stability when the body is out of the growth state (homeostasis), because the body is constantly losing substances due to external and internal factors. Since food replaces the lost content of the body, it should not oppose, but similarize the body. A true food should not deviate body temperament towards any of the four warm, cold, wet and dry qualities, but keep it in balance. Nevertheless, all food alters body temperament, however small. It is thus necessary to recognize foods that change body temperaments, and the strength and extent of the effect of each on the body should be determined separately, so that they can be combined to yield moderate foods that are proper for daily consumption [5]. However, when the aim is changing a quality in the body, a suitable food that helps achieves this, should be selected.

- In the physics (*Tabi'iaat*) section of the book *Shifa*, Avicenna has explained that growth is caused by matter and the amount of the growth-inducing material. Food causes growth because it is similar to the body in terms of matter, and moreover, it has a quantity that can increase the quantity of growth-inducing material of the body. The process of converting food into tissues has several names such as *Nuzj* (preparation to be used by the body) and *Istihalah* (changing from one state to another), which is a description of the change in temperament and consistency of food to become part of the body. Perfection of food lies in resembling

the body (*Tashbboh/ تشبه*), becoming a part of it (*Illisaq/ التصاق*), and replacing what is lost from organs. If food does not resemble the tissue, it would not be at its perfection, like what happens in vitiligo. Likewise, if it resembles tissues but does not become a part of them, diseases such as ascites occur. The mentioned conditions do not meet perfection, because a complete food is one that both resembles tissues and becomes a part of them [8].

- According to PM, all bodies are composed of four main components. These four components are distinguished on the basis of weight and compactness. The heaviest and most compact body components are the components of earth, then the components of water, then air, and finally the lightest and most non-compact are components of fire. In *Al-Shamil*, under the entry of pomegranate, Ibn Nafis has mentioned that the nutritiousness of pomegranate is low, because the bond between components of earth and water in pomegranate is weak. In other words, the strength of bonds between earth and water components can affect nutritiousness. One way of recognizing food features is taste. Some tastes are signs of nutritiousness (*Ghazaeiat/ غذائیت*), while others are indicative of being pharmaceutic (*Davaeiat/ دوائیت*). For example, sweet and tasteless are two tastes that imply significant nutritiousness. In contrast, spicy and bitter tastes indicate being pharmaceutic. Any compound that has a temperament contrary to body nature, like spicy and bitter compounds, is not considered food [9].

- In *Daf'e Al-Mazar Al-Kolia*, Avicenna states that since food ultimately becomes a part of the body, it is necessary for a person who wants to stay healthy, to select food that is consistent with body temperament, and that which the body can benefit from the most. Therefore, vegetables and fruits should be consumed to a lesser extent and only to modify other consumed food. For example, if old mutton or rumen or other difficultly-digested foods are used, it is appropriate to eat warm-tempered vegetables to facilitate digestion. If the same vegetables are used with an easily-digested food, they will lead to over-digestion, and poor-quality blood will be produced. If easily-digested foods such as chicken broth and sweets are used with cold-tempered vegetables such as lettuce, they will be modified and will not be over-digested. Therefore, it is better to be content with moderate foods that have little wastes in the process of digestion, such as well-cooked wheat bread, meats of young mutton or young fat calf, and sugar Halvah or grape sap. If fruits and vegetables are desired, more nutritious fruits, such as grapes, figs, and dates, and vegetables that are not strong-tempered and strengthen the stomach, such as a little mint, horseradish and tarragon, can be used moderately and cautiously. Pickles and sweets can be used in the same way [10].

- In *Khwarezmshahi Zakhira*, Jorjani has stated that the term food cannot be applied to all nutrients because what is eaten is not a food until it is digested by the stomach and liver and turned into blood [11]. In *Al-Mansouri*, Rhazes has also mentioned that after liver digestion, when black bile and yellow bile are transferred to their storage places in the gallbladder and spleen, the blood can feed the organs. This is because the most important matter for feeding the organs is blood and the rest of the humors have a modifying role [12]. Jorjani explains that food is something that is eaten, half-digested in the stomach, transferred from the stomach to the liver, transformed into blood in the liver, entering the arteries and reaching each organ, resembling that organ, replacing what has been lost, keeping the body balance, not deviating any quality (warmness, coldness, dryness or wetness) in the body. Bread and meat are thus regarded as foods. Whatever changes the temperament of the body and does not resemble the organs (such as myrobalan, and ginger), is a drug. Also, anything that changes the temperament of the body to a lesser degree than drugs and is not as beneficial as food for the organs, is called medicinal food or food medicine i.e. a food that is a medicine or a medicine that is also food, such as mint, lettuce, squash, and etc.

It should be mentioned that the blood, which is actual food, has a warm-wet temperament. Thus, it is obvious that substances with a warm-wet temperaments are reduced sooner, and whenever this occurs, food should be consumed to replace the lost portion. So, a real food has components that mostly have warm and wet temperament. Any food feeds the body due to its warm and wet temperament, and there is no food without warmness and wetness. The digestive faculty uses up some of the warm and wet quality of any food and the feeding faculty turns them into blood so they can reach the organs and resemble them. Whatever the feeding faculty cannot change, turns into feces and is excreted by the repulsive faculty.

- Jorjani has also stated that a good food does not have a dominant taste. Elsewhere, he has considered food as something that turns into meat (muscle). This interpretation arises from the embryological view in PM references that categorizes organs into blood-originated (*Damavi/ دموی*) or semen-originated (*Manavi/ منوی*), which are renewable and non-renewable respectively. The chief tissue with the ability of regeneration is meat, an example of which is muscle. In PM, meat is a more general concept compared with muscle [11].

- In *Al-Mansouri*, Rhazes has mentioned that being delicious is a condition of nutritiousness. He states that the mouth has both senses of touch and taste, because it should be able to distinguish delicious foods from tasteless foods, and delicious foods can feed and be favorable to the body most of the time [12]. To explain

this issue, Avicenna explains that what is more delicious is not necessarily more nutritious. Although all foods have a degree of sweetness and deliciousness, food has conditions other than being sweet and delicious. He discusses that the most favorable food for man is the most delicious one, because the stomach digests it well. However, this is true on the condition that the main organs are healthy and no temperamental differences between them exists. It is not considered in the case of dystemperaments or temperamental differences among the organs [13].

- In *Minhaj al-Bayan*, Ibn Jazla states that whatever food and drink enters the body, is not out of four states:

- The body changes it first, but is afterwards affected by it and accepts its temperament. This is called a drug, like ginger.
- The body is dominated by what is consumed and cannot overcome it, and this is called deadly poison.
- The consumed substance changes the body first, but is eventually, changed by the body. These are regarded as medicinal food or food medicine, such as non-alcoholic beer.
- The body changes the substance and finally it resembles the body, and this is called food.

In other words, medicinal foods have an equal or relatively equal force to the body, both of which are affected by each other by precedence or delay. A poison is stronger than the body and for this reason the body is not able to change it. Food is less strong than the body and cannot change the body [14]. In *Al-Me'ah fi Al-Tib*, *Abu Sahl al-Masihi* has given a similar definition that a food is in fact something that can add to the substance of the body but does not change its temperaments, and medicine is something that changes the temperaments of the body, but cannot add to the substance of the body; and medicinal food can add to the substance of the body, but less than absolute food, and changes the temperament of the body less than absolute medicine [15].

4. Determine the defining attributes of food

The characterization of a concept is related to its attributes, and each abstract concept has usually more than one defining attribute. But for concept analysis, the appropriate attributes of the concept should be considered [16]. The attributes of a food, can be defined as follows:

1. A food is something that flows in the body and replaces substances and tissues that are constantly being lost from the body. The best state is that the food becomes almost completely part of the body and does not cause any adverse changes in the temperament or balance of the body [6,10,14,15].
2. A food is something that is potentially, but not actually, similar to the body, but is affected by the forces

of the body and after resemblance, becomes a part of the organs and tissues of the body. From the viewpoint of PM, diseases such as vitiligo occur if the process of resemblance of a food to the body is disrupted, and diseases such as ascites occur if the process of tissue replacement is disrupted. The perfection point of the food is both of resembling tissues and becoming part of them [7].

3. A food is something that can add to the quantity or three dimensions of the body (length, width, and height). A food has this feature for two reasons, firstly because it is similar to the body, and secondly because its quantity can be added to the quantity of the body [7,8].

4. A food is something that, in addition to development, also plays an essential role in the reproductive process and constitutes the raw material of the sperm [7].

5. In the process of replacing the food in the components and tissues of the body, various faculties are involved, all of which are natural ones derived from the liver. These faculties form a chain of dependent and continuous events such as digestion, absorption, storage, excretion of waste products due to digestion, conversion of food into components and organs required by the body, and also development and reproduction. Disruption in any loop of this chain can affect the processes of aging, growth, development and fertility [7].

6. In the process of digestion or elaboration, foods turn into humors and humors are consumed in the body. The most important humor needed by the body is the blood. The blood has a warm-wet temperament, and is considered the best matter for feeding the organs and is used up more than other humors. Therefore, the major part of the digestive product of a food would be blood, and each food can feed the body via warm and wet qualities [11,12].

7. Although the tools necessary for microscopic evaluation were not available to ancient Persian scholars, foods have also been considered from a microscopic point of view. Indeed, the microscopic features were inferred through observation. A food is microscopically a body, in which earth and water components are predominant, earth components are in moderation, the ratio of earth to water components is close to each other, and the bonds between the earth and water components is strong. Realization of these conditions has been through macroscopic observations, based on which a substance with the above attributes either does not have a predominant taste or will be sweet or greasy or a combination of these, free from undesired tastes such as bitter, spicy and salty and it will have little nutrition for the body because of the bond between earth and water components [9]. Figure 1 shows a summary of these points.

5. Constructing a model case

A model case shows an example of the concept to clarify the attributes in a real and vivid way, and enable the

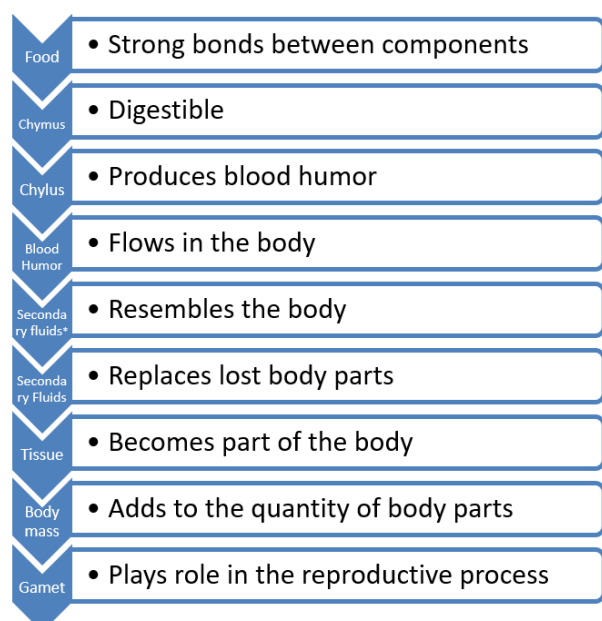


Figure 1. Defining attributes of food in Persian Medicine

* Avicenna states that food is converted into fluids in the process of digestion and divides these fluids into primary and secondary types. Primary fluids are equivalent to humors, while secondary fluids are the stages that humors go through to become part of a tissue [13]

reader to interpret and define the concept [17]. A relatively perfect match for the above-mentioned attributes, is absolute food (*Ghaza-ye Motlagh*, غذای مطلق) in PM.

An absolute food is a food that influences the body merely via matter, not temperament. This type of food does not alter balance and temperament of the body, but rather the body acts on, changes and turns it into humors. This process paves the way for food to become part of, and increase the length, width, and height of organs and the body.

Matter prevails over quality in absolute food, and there is no dominant quality. The blood produced from this type of food is fully digested and is in moderate amounts. Therefore, it warms the body i.e., it maintains the warm temperament of the body by replacing raw material from which this warmth is produced, not by generating warmth excess to the body's heat. The following foods are considered as absolute foods: wheat; bread that is free from impurities and is the product of healthy cultivation; high-quality rice; healthy one-year-old lamb, six-month-old goat, and one-year-old calf, provided that they are not be confined, but on the move and in pastures with good grasslands; mild sweets made from sugar and almonds; and fruits such as figs and grapes consumed before meals, pomegranate after meals, melon between two meals, and fresh dates [18].

6. Identify borderline, contrary and invented cases

Borderline cases

A borderline case has some, but not all of the attributes of the intended concept and is in fact an example similar to the model cases, but is distinguishable due to the absence of some attributes [19]. There are two concepts as borderline concepts of food, namely medicinal food and food medicine. Medicinal food (*Ghaza-ye Davaei*, غذای دوائی) is a substance that influences the body via both temperament and matter, with predominance of matter. That is, in addition to replacing tissues, it changes the temperament and consolidation of tissues. Instances include lettuce, malt, barley soup, cucumber, squash, watermelon, spinach, chamomile, dill, turnip, beet, carrot, cabbage, mung bean, lentil, and pea.

- Food medicine (*Dava-ye Ghazaei*, دوائی غذایی) is a substance that influences the body via both temperament and matter, with predominance of temperament. Indeed, these substances can also replace the body's lost matter and include leek, mint, chicory leaf, garlic, onion, plum, and the seeds of vegetables such as cucumber, melon, watermelon, pumpkin and etc. (11). The composition of these two groups plays an important role in the treatment of diseases, because they can change the temperament of a patient towards health or lead to so-called temperament moderation [13].

Contrary cases

Contrary cases do not have any of the attributes of the intended concept. This difference is quite obvious and easily recognizable by individuals [19]. There are two concepts as contrary cases of food, one being absolute medicine, and the other poison.

- Absolute medicine (*Dava-ye Motlagh*, دوائی مطلق): In addition to not resembling the body or having the capability to replace what is lost from organs of the body, absolute medicine deviates the temperament of the body from the existing state [20]. Although spices -as instances of absolute drugs- are used for food modification, they are not considered as food as they do not meet food conditions. For this reason, their consumption in healthy individuals should be limited to as little as possible, and only their aqueous extracts are recommended in order to protect against their adverse effects [21].

- Poison (*Sam*, سم): Poison is not considered as food because of the same reasons mentioned for absolute medicine, and also its opposition to health and life. Nevertheless, they may be used for the treatment of some diseases [20].

7. Identify antecedents and consequences

The antecedents are conditions that exist before a

concept can be created [22]. The first condition for a material to be considered food is being delicious and acceptable for eating. So, if a food is not acceptable in terms of taste, color and smell, it is not a suitable food for a person [20]. Even during treatment, patients should receive delicious food [23]. To explain this, Persian scholars have stated that when a food is not accepted by the bodily nature of a person, it will not be properly digested and can be pathogenic [24].

The next condition for a substance to be considered food is digestibility. Therefore, if a substance does not enter the digestive process in spite of being swallowed and chewed, it cannot be regarded as a food [3]. The third condition is that the substance provides the body with warm and wet temperaments and replaces body organs after digestion and absorption. Since medicines do not provide the body with warm and wet qualities and do not replace the lost organs of the body, they are not considered as food in spite of the changes they cause in the body [11].

The consequences of the food consumption are growth and development or an increase in the three body dimensions (length, width and height) [7], homeostasis [15], childbirth [7] creation of warm and wet qualities in the body [11] and replacement of lost substances from the body [6].

8. Definition of empirical referent

The empirical referent is related to classes and groups connected to real phenomena, which show how the intended concept occurs and is understood [22]. What is evident in the clinical recommendations of PM references, is that for a person, the choice of an edible substance as food also depends on other conditions. For example, in spite of being in the category of absolute foods, one-year-old lamb should be limited in feverish patients [24], or *Sefidbaj*, which is a simple broth and also categorized as absolute food, should not be consumed continuously in hot cities, warm-tempered individuals and young ages despite being [25], while it can be consumed continuously under other conditions. In other words, the concept of food has been completely personalized in PM and changes from person to person.

Discussion and Conclusion

According to PM references, the definition of good food is a personalized definition, dependent on age, climate, and temperament, as well as other factors. Nevertheless, under healthy conditions, a good food is what can both replace the lost substances and tissues of the body and not change the temperament and consistency of body organs [7]. This is due to the fact that any change in health indicates deviation from the healthy state towards diseases [13]. Regarding food temperaments, a warm-tempered food is what increas-

es the warm quality in the body following digestion. In contrast, a cold-tempered food is a substance that reduces the warm quality in the body after being digested [11]. Indeed, the warm quality of the body is not equivalent to body temperature, but implies the quality that triggers all actions in the body that require energy [26]. In order to personalize diets, various internal and external factors have been considered. Internal factors include eating habits, level of physical activity, mental status, body mass, health status, function of the gastrointestinal tract, temperament, and age. External factors considered in the diet comprise seasons and living environment [13,24]. For example, in explaining foods that are difficult to digest, Avicenna states that they should be consumed by individuals with heavy physical activity to provide necessary strength [13]. On the other hand, as Jorjani mentions under the topic of elderly health, foods that are difficult to digest are forbidden in this age [11].

Fundamental principles in today's nutritional science include adequacy (adequate intake of nutrients needed during the day), balance (balancing intake of different nutrients), calories (considering the calories of different foods), nutrient density (selecting foods that provide the most nutrients with the least calories), moderation (avoidance of overeating), and variety (choosing different foods from a subset) [27,28].

The view of modern nutritional science is mainly based on chemistry and molecules that foods comprise, with no sufficient consideration of the macroscopic quality of foods. On the contrary, in spite of suffering a lack of chemical and microscopic view, the science of PM focuses on the physical properties and temperaments of foods, which can lead to a synergistic knowledge with modern nutrition. Another focus of nutrition in PM is food digestibility, which is somehow related to the concept of bioavailability. Persian scholars believe that if not digested appropriately, even the best foods cannot nourish the body and can even cause diseases [29]. Due to such belief, PM references state that absolute foods should be used for health maintenance. Absolute foods are digestible and absorbable for the most part. The more the indigestible parts of a food are, the higher is the risk that their continuous consumption causes damage to health. Thus, these types of food should only be recommended for short-term use and for special preventive and therapeutic purposes. Finally, PM pays utmost attention to environmental and individual factors in food selection, which is sometimes far from the view of modern nutritional science. These factors include food selection according to temperament and individual properties or considering temperature and humidity of the living environment [13].

To conclude, it is worthy to point out to novel pharmacogenetics and nutrigenomics, that aim individualized

design of drugs and diets. It seems that studies can be designed based on PM knowledge to personalize the diets of healthy individuals and patients, and to show the strong effect of diets more than ever. Rearranging clinical studies in the field of nutrition according to temperament and other conditions affecting nutrition from the perspective of PM, may help achieve different results from current findings in the field of nutrition and diet therapy.

Conflict of Interests

None.

Acknowledgements

None.

References

- [1] Michael Pollan. *The Omnivore's Dilemma: A Natural History of Four Meals*. Penguin. New York 2007.
- [2] Mahan LK, Raymond JL. *Krause's Food & The Nutrition Care Process*. Elsevier. Toronto 2016.
- [3] Arzani MA. *Mufarrih al-qulub (The Joy of Hearts)*. Almaee. Tehran 2012. [in Persian]
- [4] Nuopponen A. Method of concept analysis—a comparative study. *J Lang Spec Purpose Prof Commun Knowledge Manage Cogn* 2010;1:4-12.
- [5] Walker LO, Avant KC. *Strategies for Theory Construction in Nursing*. Pearson/Prentice Hall. New Jersey 2005.
- [6] Ahvazi AA. *Kamil al-Sana'a al-Tebbiya (Complete book of medical profession)*. Jalaluddin Publications. Qom 2008. [in Arabic]
- [7] Avicenna. *Tabieiat Daneshnameh Alaei (Physics of Alaei Encyclopedia)*. Bu-Ali Sina University. Hamadan 2004. [in Persian]
- [8] Avicenna. *Al-sheefa*. Mar'ashi Najafi Library. Qom 1984. [in Arabic]
- [9] Ibn Al-Nafis A. *Al-Shamil fi al-Sina'a al-Tibbiyya (Comprehensive Book on the Art of Medicine)*. Tehran University of Medical Sciences. Tehran 2008. [in Arabic]
- [10] Avicenna. *Daf' al-mazar al-kolli'eh 'an al-'abdan al-Ensanieh (Paying off the total harm from human bodies)*. Institute for the History of Arabic Science. Damascus 1983. [in Arabic]
- [11] Jorjani E. *Zakhireh Kharazmshahi (Khwarazmshah's repertoire)*. Institute of Natural Medicine Restoration. Qom 2013. [in Persian]
- [12] Rhazes. *Al-Mansuri fi Al-Teb (Al-Mansoori in medicine)*. Al-Monazama Al-Arabia al-Tarbia va Al-Thaqafa va Al-Olum. Kuwait 1988. [in Arabic]
- [13] Avicenna. *Al-Qanun fi al-Tib [The Canon of Medicine]*. Alaalami Beirut Library Press. Beirut 2005. [in Arabic]
- [14] Al-Baghdadi I. *Minhaj al-bayan fi-ma yasta'miluhu al-insan (The manifesto in what a person uses)*. League of Arab States. Cairo 2010. [in Arabic]
- [15] Masihi A. *Al-mi'a fi al-tibb (one hundred tips in medicine)*. Edited by Almahtoori Alhasani M, Hebatallah M, Alfazl M. Tehran University of Medical Sciences. Tehran 2005. [in Arabic]
- [16] Cheng S-F, Foster RL, Huang C-Y. Concept analysis of pain. *Tzu Chi Nurs J* 2003;2:20-30.
- [17] McCormack B. Intuition: concept analysis and application to curriculum development. II. Application to curriculum development. *J Clin Nurs* 1993;2:11-17.
- [18] Gilani MK. *Hefz al-Sehat Naseri*. Almaee Press. Tehran 2009. [in Persian]
- [19] Hogarth RM. Intuition: a challenge for psychological research on decision making. *Psychol Inq* 2010;21:338-353.
- [20] Shirazi S. *Al-marghoob va Al-mahzoor le-Tohfa al-dastoor (Desirable and forbidden for the masterpiece of the constitution)*. Almaee. Tehran 2015. [in Persian]
- [21] Aghili Alavi Khorasani Shirazi MH. *Makhzan-Al-Advieh (drug store)*. Kanpur, Bhagwan Dial. [in Persian]
- [22] Mansurian H, Saadati Kenari H. Evaluation of intuitive knowledge in Rumi's Masnavi. *Liter J* 2012;2:17-32.
- [23] Rhazes. *al-Murshid aw al-Fusul*. The Institute of Arabic Manuscripts. Cairo 1995. [in Arabic]
- [24] Chishti MAK. *Exir-e-Azam (Great Elixir)*. Almaei. Tehran 2014. [in Persian]
- [25] Rhazes. *Manafe al-aghzieh (The Food Benefits)*. Dar Alkitab Al-Arabi. Damascus 1984. [in Arabic]
- [26] Shirbeigi L, Zarei A, Naghizadeh A, Alizadeh Vaghasloo M. The concept of temperaments in traditional persian medicine. *Trad Integr Med* 2017;2:143-156.
- [27] Razi B. *Summary of Experiences (Kholasat Altajarob)*. Research Institute for Islamic and Complementary Medicine. Tehran 2004. [in Persian]
- [28] Whitney E, Rolfes SR. *Understanding Nutrition*. 14th ed. Cengage Learning. London 2016.
- [29] Rhazes. *Al-Havi (The Large Comprehensive)*. Dare Ehia Attorath Al Arabi. Beirut 2001. [in Arabic]