Original Article

Consuming Organic Food to Feel Happy? Positive and Negative Affect, Happiness and Attitudes toward Organic Products in Iranian Women

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ARTICLE INFO	ABSTRACT
	The present study was carried out to investigate the relationship between positive and negative affect and happiness with attitudes toward organic products including organic medicinal plants, organic fruits and animal products in Iranian women. The descriptive-correlational method was used, and the statistical population included Iranian women who were selected 201 of them by convenience sampling. In this study, positive and negative affect questionnaire, Oxford Happiness Inventory, attitudes toward organic products (medicinal plants, organic fruits and animal products) were used. The data obtained from the questionnaires were analyzed using Pearson correlation coefficient and simultaneous regression. Findings showed a positive and significant relationship between positive affect and attitudes toward organic products in Iranian women and a negative and significant relationship between negative affect and attitudes toward organic products in Iranian women (p <0.01). There is also a significant positive relationship between happiness and attitudes toward organic products in Iranian women (p <0.01). Therefore, findings suggest that psychologists and counselors can increase happiness and positive affect by strengthening the attitude towards organic products in Iranian women.

1. Introduction

Organic farming, especially when health issues lead more attention to medicinal plants, is an important way to increase social health. The facts and statistics of the world of organic food including organic fruits and vegetables, medicinal plants and animal products, show that continuity in the organic farming sector is on the path of growth and dynamism. The fuel for this dynamic growth is often consumer demand. This demand is increasing for various reasons and motives, including health concerns especially medicinal plants and food allergies to chemical residues such as toxins and pesticides in everyday products (Tóth et al., 2021; Mahmoudi & Liaqati, 2007).

The field of attitude towards organic products is an approach to encourage organic farming, produce clean and healthy food that people always demand. Therefore, according to Kesse-Guyot et al. (2017), eating organic foods free of any toxins and chemical fertilizers can, directly and indirectly, affect health and, to a greater extent, positively affect the quality of consumers' life.

Stobbelaar et al. (2006) stated that women are 30% more likely than men to use organic products.

Emotions are another aspect of human behavior that plays an essential role in human life and forces man to do things beneficial for his survival. Moreover, emotions make humans aware of harmful things to their survival (Brans et al., 2013). Positive and negative affect are relatively independent structures representing a range of low to high emotional experiences. Positive affect shows how much a person interacts with others and with their surroundings. People with high positive affectivity are generally enthusiastic, energetic, active, and alert. Low positive affect indicates sadness, grief, and lethargy, while high positive affect reflects the energy, concentration, enjoyable interactions, and happiness. In contrast, negative affect is a general dimension of mental distress, unpleasant interactions, and various moods such as anger, hatred, disgust, and the like. Low negative affect also indicates calmness, and high negative affect reflects mental distress and unpleasant interactions (Watson et al., 1988).

Happiness is also one of the most important and influential components in life. Activity, creativity, initiative, invention, and healthy life will not be possible without happiness (Taherian et al., 2014). Happiness in individual and social life also leads to a positive attitude towards life, positive self-concept, greater desire to help others, having high life indicators, balanced social relationships, a desirable and satisfying attitude towards self and others, and ultimately better performance (Sharifi et al., 2011). Happiness is also a characteristic in humans with three main components (positive affect, life satisfaction, and lack of negative emotions) (Taherian et al., 2014).

Shirom (2003) considers happiness as an emotional construct. Sonnentag and Niessen (2008) state that happiness is a positive state that is achieved in response to a person's constant interaction with significant environmental elements. Happiness increases people's vitality by creating positive emotions in them. People with positive emotions are more inclined to be in new situations and are more involved in work effectively (Moradi, 2008).

Furthermore, Andrewaz et al. (2020) showed that availability, health awareness, and knowledge of organic food have the most significant impact on consumers' attitudes toward organic food. Raheli and Sandoughi (2018) showed that improving consumers' quality of life in three dimensions of physical, mental, and environmental health is recommended to encourage them to buy organic products.

Hasheminejad and Yazdanpanah (2015) showed that the variables of ethical norms, attitude, and identity could explain 65% of changes in students' desire to use organic products. Their findings showed that students' attitudes have the greatest impact on their desire to consume organic products. Researchers were able to explain 37% of changes in students' desire to use organic products based on the model of health beliefs, benefits, encouragement to practice, and health motivation. In this regard, Rahman et al. (2020) studied consumers' actual purchase behavior towards green products. Their findings showed that consumer attitudes towards subjective norms, environment, and perceived behavioral control significantly influence their behavioral intention. They also found that consumers' behavioral intentions have a significantly positive influence on their actual purchase behavior. Lian and Rajadurai (2020) investigate the consumers' knowledge, perceived quality, and people's trust in the Malaysian Organic (myOrganic) certification logo and its influence on the purchase of organic food. This study showed that consumers' awareness, perceived quality, and trust of the myOrganic logo significantly affected their purchase intentions of organic food. Moreover, consumers'

purchase intentions are positively correlated to the actual purchase of organic food.

Kassim et al. (2021) explored the effect of food bank programs on university students' psychological well-being. The findings showed that psychological well-being is enhanced among the recipients when there is a positive attitude toward the food bank program, favorable access to food security, and basic needs.

Koochaki et al. (2013) showed that nutritional value is the most crucial factor in consumers' tendency to buy and consume these products. Therefore, their findings confirmed the importance of increasing consumer awareness about the nutritional value of organic products in changing their consumption behaviors and developing and expanding the production and consumption of healthy foods.

Ismael and Ploeger (2020) showed that people who tend to use organic food have higher mental health, such as greater happiness and contentment. Lee (2019) stated that the use of organic products increases the level of happiness in consumers. Apaolaza and Hartmann (2018) studied the relationship between organic food consumption, health concerns, and mental well-being and showed a significant relationship between the use of organic products and consumer mental health. Pétursson (2018) showed that people who regularly use organic products have higher mental and physical health, and their quality of life is at a high level, too.

Aertsens and Verbeke (2009) carried out a meta-analysis and showed that attention to physical health and the effect of happiness resulted from organic products was higher in women than men. The authors concluded that this leads to a healthy life. Also, Arvola et al. (2008) addressed the role of moral and emotional norms in the theory of planned behavior, and their results showed that ethical norms play an important role in the intention to buy organic products. Therefore, more detailed studies are necessary to understand this relationship. In farming organic plants, it is noticeable that using organic medicinal plants, because of social positive attitudes to effective characteristics of them, is increased during the past decades. The present study investigated the relationship between positive and negative affect, happiness, and attitudes toward organic products (including medicinal plants) in Iranian women.

2. Material and Method

The descriptive-correlational method was used in the study. Based on the proportionality of the sample size with the statistical population using the sample size table of Mitchell and Jolly (2007), and at the level of 95% statistical confidence, 220 questionnaires were distributed using online link in 2021, February and March. Given the proportion of women, 201

questionnaires were finally analyzed. The presence of 201 participants in a study is statistically sufficient. Participants were between 18-68 years. The mean and standard deviation of their age were 37.58 and 11.285, respectively. Nine subjects did not specify their age. 0.5% of the participants did not specify their jobs, and the highest frequency was among homemakers, and the lowest frequency was among retired and unemployed people. 2% of the participants in the present study were unemployed, 33.8% homemakers, 15.4% students, 10% self-employed, 36.3% employees, and 2% retired.

The following tools were used to measure the research variables:

2.1 Positive and Negative Affect Schedule (PANAS): This schedule was developed by Watson, Clark, and Tellegen (1988) to measure positive and negative affect. A reliable and concise scale, PANAS consists of two 10-item scales to measure both positive and negative affect. Each item is rated on a five-point Likert scale from 1 (very slightly) to 5 (extremely). Together, all items measure each of the ten positive and negative emotions in a specified time frame. Seven-time frames are suggested in the guideline for completing this scale depending on the research objectives, including "right now, today, last few days, last week, last few weeks, last year, and in general." This study used the "in general" time frame. Cronbach's alpha coefficients were reported to be 0.86 to 0.90 for positive affect items and 0.84 to 0.87 for negative affect items. Also, the face validity of the questionnaire was confirmed by the split-half method. In the present study, Cronbach's alpha of this questionnaire was 0.74.

2.2 Oxford Happiness Inventory: Argyle and Lu (1990) developed a 29-item questionnaire to measure happiness. Factor analysis of its sources has obtained five factors: self-esteem, life satisfaction, subjective well-being, positive mood, and satisfaction (Kar, 2004, Translated by Pasha Sharifi et al., 2006). Questions 1-13 address life satisfaction, questions 14-18 address satisfaction, questions 19-23 address self-esteem, questions 24-26 are the subscale of positive mood, and questions 27-29 are the subscale of positive energy. The first expression scores zero, the second expression scores 1, the third expression scores 2, and the fourth expression scores 3. Finally, the person gets a score between 0 and 98, and a higher score signifies greater happiness. The content validity of the questionnaire was confirmed by Argyle and Lu (1990), and the reliability of the questionnaire was reported to be 0.92. In the present study, Cronbach's alpha of this questionnaire was 0.90.

2.3 Attitude to Organic Products Questionnaire: Gil (2000) developed a 9-item questionnaire used in the present study to assess attitudes toward organic products. This questionnaire has nine questions, and its purpose is to assess the attitude towards organic products (positive or negative attitude). The questionnaire is rated on a 5-point Likert scale (strongly disagree = 1 to strongly agree = 5). Then, the total score of all questions is calculated. This score will range from 9 to 45. Higher scores indicate a more positive attitude towards organic products in the respondent and vice versa. The organic products include a wide range like organic medicinal plants, fruits, vegetables and animal products. This questionnaire is a multi-dimensional one which assess attitudes in general (not only attitudes toward medicinal plants).

2.4 Self-report questionnaire about medicinal plant: This questionnaire was designed to evaluate the participants' knowledge about farming, advantages and disadvantages of medicinal plants, their attitudes about the effects of medicinal plants in different health problems, and the participants' medicinal plants that they were used during 2 last months before this study.

2.5 Statistical Analysis

Data obtained from research questionnaires were analyzed at two levels of descriptive and inferential statistics. At the inferential level, Pearson correlation coefficient and regression were used simultaneously with SPSS (version 23). Before analyzing the data and examining the hypotheses, each variable's descriptive indices (mean, standard deviation, median, and mode) were calculated separately

3. Results

As shown in table (1), the mean and standard deviation of the happiness variable were 16.663 and 45.10, positive affect were 6.674 and 35.02, negative affect were 5.69 and 20.72, respectively. Moreover, the mean and standard deviation of attitudes toward organic products were 5.056 and 33.29.

Table 1. Descriptive statistics of research variables

Variables	Min	Max	Mean	S.D.	N
Happiness	8	83	45.10	16.66	201
Positive affect	21	50	35.02	6.67	201
Negative affect	10	39	20.72	5.69	201
Attitude toward organic	17	44	33.29	5.05	201

Considering that some statistical methods such as Pearson correlation and regression are based on the assumption of normal distribution of data (Karimi, 2015), this assumption was examined using the Kolmogorov-Smirnov (KS) test. Its results were shown in table (2).

Table 2. Results of Kolmogorov-Smirnov (K-S) test for compliance with normal distribution *

	Z-score	Sig.	Conclusion
Attitude toward organic	0.058	0.092	Normal
Happiness	0.056	0.20	Normal
Positive affect	0.063	0.052	Normal
Negative affect	0.063	0.052	Normal

* Two-tailed test

The null hypothesis is that the distribution of scores in the population is normal, and the skewness or kurtosis in the curve results from random sampling. The alternative assumption states that the distribution of scores in the population is not normal. The results of table (2) show that positive affect, negative

affect, happiness, and attitude towards organic products have a normal distribution in the population (p>0.05).

Table 3. Regression of positive and negative affect and happiness with attitudes toward organic products

Variable	Predictor variable	Multiple correlation coefficient	coefficient of determination	Adjusted coefficient	Durbin-Watson test	F ratio	Standardized beta coefficient	T	p
Attitude toward organic product	Positive affect	0.343	0.118	0.104	1.785				
	Negative affect					8.751	0.013	0.155	0.877
						P=0.000	-0.005	-0.058	0.954
	Happiness					1	0.332	3.545	0.001

According to the results of simultaneous linear regression, which can be seen in table (3), the significance of regression was calculated by the F-test, and the significance level of the test was 0.0001 (p <0.01). This indicates the analyzability of the results. One of the basic assumptions in multiple regression analysis is the lack of correlation between the error scores of different independent variables, which is tested by the Durbin-Watson test. As the value of the Durbin-Watson test is 1.785 and this score is between 1.5 to 2.5, the independence of the observations can be accepted. The multiple correlation coefficient for the above regression model was 0.343. The coefficient of determination was 0.118, according to which 11.8% of the variance in attitudes toward organic products is predicted by positive and negative affect and happiness. The adjusted coefficient of determination in which the value of the coefficient of determination is adjusted with degrees of freedom is 0.104. According to table (4-5), the beta value of happiness is 0.332 and p = 0.001<0.01, the beta value of positive affect is 0.013 and p>0.05, and the beta value of negative affect is 0.058 and p>0.05. Hence, happiness can significantly predict the attitude towards organic products.

Table 4. Pearson correlation coefficient between positive and negative affect with attitudes toward organic products

Variable	Predictor variable	Pearson correlation coefficient	Significance level
Attitude toward organic products	Positive affect	** 0.213	0.002
	Negative affect	** -0.202	0.004

As shown in table (4), there is a significant positive relationship between positive affect and attitudes toward organic products at the significance level of 0.01 (p <0.01, r = 0.213), and there is a significant negative relationship between negative affect and attitudes toward organic products at the significance level of 0.01 (p <0.01, r = - 0.202). According to the results of simultaneous linear regression, which is shown in table (5), the significance of regression was calculated by the

F-test, and the significance level of the test was 0.001 (p <0.01).

Table 5. Regression of positive and negative affect with Iranian women's attitude toward organic products

Variable	Predictor variable	Multiple correlation coefficient	The coefficient of determination	Adjusted coefficient of determination	Durbin-Watson test	F ratio	Standardized beta coefficient	T	p
Attitude toward organic products	Positive affect	0.253	0.064	0.055	1.693	6.788	0.163	2.223	0.027
	Negative affect					P=0.001	-0.146	-1.987	0.048

** Correlation is significant at the level of 0.01 (two-tailed test)

This indicates the analyzability of the results. Given that the value of the Durbin-Watson test is 1.693 and this value is between 1.5 to 2.5, the independence of observations can be accepted.

The multiple correlation coefficient for the above regression model was 0.253, and the coefficient of determination was 0.064, according to which 6.4% of the variance of attitudes toward organic products is predicted by positive and negative affect. The adjusted coefficient of determination in which the value of the coefficient of determination is adjusted with degrees of freedom is also 0.055.

According to table (5), the beta value of positive affect is 0.163 and P = 0.027 <0.05 and the beta value of negative affect is -0.146 and P = 0.048 <0.05. As a result, positive and negative affect can significantly predict attitudes toward organic products. As can be seen in table (6), there is a significant relationship between happiness and attitudes toward organic products in Iranian women at the significance level of 0.01 (p <0.01), and the correlation coefficient between overall happiness and attitudes toward organic products is 0.343.

Also, there is a significant relationship between the dimensions of happiness (self-esteem, life satisfaction, subjective well-being, positive mood, satisfaction) and attitudes toward organic products in Iranian women at the significance level of 0.01 (p <0.01).

Accordingly, correlation coefficient of self-esteem with attitude towards organic products was (p <0.01, r = 0.321), life satisfaction with attitude towards organic products was (p <0.01, r = 0.283) and subjective well-being with attitude towards Organic products equals (p <0.01, r = 0.274), positive mood with attitude towards organic products was (p <0.01, r = 0.380), satisfaction with attitude towards organic products (p <0.01), r = 0.332).

According to the results of simultaneous linear regression, which can be seen in table (7), the significance of regression was calculated by the F-test, and the significance level of the test was 0.001 (p <0.01). This indicates the analyzability of the results.

Given that the value of the Durbin-Watson test is 1.798 and this value is between 1.5 to 2.5, the independence of the observations can be accepted. The multiple correlation coefficient for the above regression model was 0.405.

Table 6. Pearson correlation coefficient between happiness and its dimensions with attitudes toward organic products

Variable	Predictor variable	Predictor variable dimensions	r	Sig.
Attitude toward organic products	happiness	Self-esteem	**0.321	0.0001
		Life satisfaction	**0.283	0.0001
		Subjective well-being	**0.274	0.0001
		Positive mood	**0.380	0.0001
		Satisfaction	**0.332	0.0001
	Happiness		**0.343	0.0001

** Correlation is significant at the level of 0.01 (two-tailed test)

Table 7. Regression of happiness and its dimensions with attitude toward organic products in Iranian women

Variable	Predictor variable	Multiple correlation coefficient	coefficient of determination	Adjusted coefficient	Durbin-Watson test	F ratio	Standardized beta coefficient	T	p
Attitude toward organic products	Life satisfaction	0.405		0.142	1.798		0.066-	0.480-	0.632
	Self-esteem		0.164				0.151	1.170	0.244
	Subjective well-being					7.635	0.024-	0.194-	0.847
	Satisfaction					0.0001	0.109	0.973	0.332
	Positive mood						0.275	3.111	0.002

The coefficient of determination was 0.164, according to which 16.4% variance of attitudes toward organic products is expected by self-esteem, life satisfaction, subjective well-being, positive mood, and satisfaction. The adjusted coefficient of determination in which the value of the coefficient of determination is adjusted with degrees of freedom is also 0.142.

According to table (7), the beta value of positive mood is 0.275 (p<0.01). As a result, the positive mood can significantly predict attitudes toward organic products.

The data related to self-report knowledge questionnaire and attitude to the farming and advantages of medicinal plants questions are shown in table 8 and Figure 1 and 2. In table 8, the frequency of responses to this question are shown: "which medicinal plant do you use during two past months?" the participants could choose more than one option, and 87% of them Because of the pandemic situation of COVID-19, the frequency of using of medicinal plants like chamomile (*Matricaria recutita*), thyme (*Thymus vulgaris*) and ginger (*Zingiber officinale*) was significant.

Table 8. Frequencies of using medicinal plants

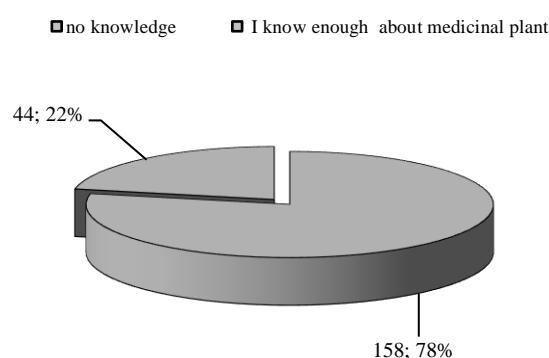| Medicinal plant	Frequency
Chamomile (*Matricaria recutita*)	145
Echium (*Echium amoenum*)	65
Alhagi (*Alhagi persarum*)	7
thyme (*Thymus vulgaris*)	185
Silybum (*Silybum marianum*)	8
Lavandula (*Lavandula angustifolia*)	43
Fennel (*Foeniculum vulgare*)	23
ginger (*Zingiber officinale*)	102
Cinnamon (*Cinnamomum verum*)	164
Black cumin (*Nigella sativa*)	59

Fig.1. participants' knowledge about cultivation and farming of medicinal plants

As it can be seen 158 participants out of 201 (78%) stated that their knowledge of cultivation of medicinal plants is not enough. It seems that a significant population of consumers of medicinal plants ignore the cultivation and processing of these plants. The next question was: "Do you need specialized training (for example, online training or educational clips) to learn more about medicinal plants, farming them and their advantage and disadvantage?"
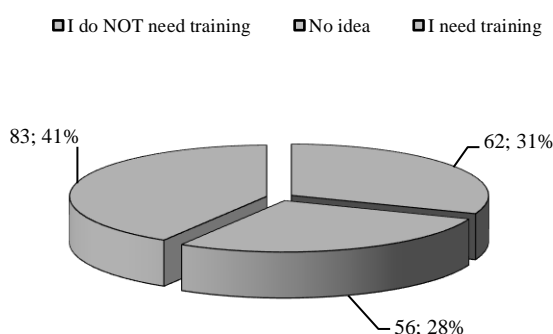

Fig.2. participants' need to training about medicinal plants

According to Figure 2, 31% (n=62) of participants in this research stated that they don't need training about farming, advantages and disadvantages about medicinal plants, and 28% (n=56) selected "no idea" as their response to this question, which probably shows the process of cultivation, storing, preparation and the other

information in this field are not important for them or based on the Iranian traditional view, the consumers of medicinal plants think that the medicinal plants are natural and probably organic plants, so they don't feel need to training and knowledge in this scope. Based on the findings of this study, it can be said that there is a need to provide specialized training on the process of cultivation and harvesting, maintenance and use of medicinal plants to the society.

4. Discussion

The results showed a significant positive relationship between positive affect and Iranian women's attitude towards organic products at the significance level of 0.01. There is a significant negative relationship between negative affect and Iranian women's attitude towards organic products (including organic medicinal plants) at the significance level of 0.01. In order to compare the results of the study with the results of other studies, the findings were analyzed and compared with other studies, including Hasheminejad and Yazdanpanah(2015); Kouchaki et al. (2013); Mahmoudi and Liaqati (2007), Apaolaza and Hartmann (2018); Pétursson (2018); Arvola et al., (2008). This comparison showed that the results of this study are consistent with the findings of other studies.

Affect is one of the aspects of human behavior that play an essential role in human life and forces humans to do things that are beneficial to their survival and inform them of doing things that are harmful to their survival (Brans et al., 2013). Positive affect shows how much a person longs for life and feels alert. In contrast, negative affect is a general dimension of mental distress, unpleasant interactions, and various moods such as anger, hatred, and disgust (Watson et al., 1988). To explain the present findings, it can be stated that organic agriculture aims to create integrated and structured agricultural production systems that do not conflict with environmental and economic interests.

Organic products including organic medicinal plants with positive effects on health and the environment have established a new way of thinking about the relationship between food, health, and nature in life (Apaolaza & Hartmann, 2018). Considering this issue and the existing records of organic and natural products, it can be stated that people believe that the use of organic products including organic medicinal plants helps maintain their physical health. Their attitude toward the issue is that organic products are necessary to stay healthy. As this attitude gets stronger, positive affect and excitement will rise in using organic products. Accordingly, the less desire to use organic products, the less excitement, and the higher negative affect can be seen in the person. Therefore, the use of organic food can lead to higher morale in life.

Therefore, organic products especially organic medicinal plants with positive effects on health and the environment establish a new way of thinking about the relationship between food, health, and nature in human life (Yazdanpanah & Forouzani, 2015). Considering the importance of nutritional value in the tendency to buy and consume these products and the importance of increasing consumer awareness of the nutritional value of organic products in changing their consumption behaviors and the development and expansion of production and consumption of healthy food, the author concluded that the more a person is aware of the nutritional value of a healthy diet, the happier and healthier the person would live. This will increase the positive mood and decrease the negative mood in the person.

The study results also showed a significant relationship between happiness and Iranian women's attitudes toward organic products at the significance level of 0.01. Also, there is a significant relationship between the dimensions of happiness (self-esteem, life satisfaction, subjective well-being, positive mood, satisfaction) and Iranian women's attitudes toward organic products at the significance level of 0.01. The results of this study were compared with the findings of Ismael and Ploeger (2020), Lee (2019), Aertsens and Verbeke (2009). The results of this comparison showed that the findings of this study are aligned with other research's findings. Organic farming is a type of lawful agriculture that relies on specific ecological criteria and standards to sustain production but not maximize it. In this type of agriculture, where human factors and producing and consuming societies are considered as an inseparable set, special attention is paid to the principles of health (soil, water, plants, animals, and environment), ecology (based on ecological systems and cycles), fairness (considering the opportunities and capabilities of life and public environments) and care (supporting the health and well-being of future generations and the environment).

Happiness is one of the basic human emotions. Therefore, it is experienced differently by everyone. The most comprehensive and practical definition of happiness is provided by Veenhoven (1988). In his view, happiness refers to a person's judgment of the degree of desirability of his or her overall quality of life. In other words, happiness means how much one loves one's life.

Since there is a close relationship between health and happiness (Ismael & Ploeger, 2020), it can be said that buying organic products leads to a feeling of ensuring overall health. Combined with enthusiasm, this feeling

fills people with happiness and joy from their level of life satisfaction.

The present study, has some limitations. First, the research results are limited to women in one of the provinces of Iran, and the views of Iranian men are not clear. Also, the sampling procedure was carried out through online forms due to the COVID-19 pandemic. Furthermore, the study used a descriptive-correlation method, using questionnaire toward organic products in general. Attitudes toward organic food questionnaire is used to general assessment and there is not standard questionnaire related to medicinal plants in Persian.

5. Conclusion

According to the finding of this study it can be suggested that to an increase in the level of happiness in the society and people's knowledge about the advantages of organic products including medicinal plants, organic fruits and animal products, the following actions are recommended: holding training courses by agricultural departments and organizations, international advertisement to improve the mental condition of women, using media and advertisements in public space to increase people's knowledge in the field of physical and mental health by experts.

In sum, increasing consumer awareness of the nutritional value of organic products especially medicinal plants has a significant role in changing their consumption behaviors and the development and expansion of production and consumption of healthy food. Accordingly, this awareness causes enthusiasm and, in other words, happiness in consumers.

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