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Research Article

Investigating the state of knowledge, Attitude and Practice of the Elderly Regarding how to consume medicinal plants in Bojnurd city in 2019

Parvin Sajadi Kaboudi[1] , Tayebeh Mohammadzadeh[2] , Reza Ghadimi[3] , Samaneh Pourhadi[4] *, Abouzar Dashteban Namaghi[5]

1. Ph.D. of Biology, Social Determinants of Health (SDH) Research Centre, Health Research Institute, Babol University of Medical Sciences, Babol, Mazandaran, Iran..
2. M.Sc. in gerontology, Student Research Committee, Babol University of Medical Sciences, Babol, Mazandaran, Iran.
3. Ph.D. of Nutritional Sciences, Social Determinants of Health (SDH) Research Centre, Health Research Institute, Babol University of Medical Sciences, Babol, Mazandaran, Iran.
4. Social Determinants of Health (SDH) Research Centre, Health Research Institute, Babol University of Medical Sciences, Babol, Mazandaran, Iran.
5. M.Sc. student of gerontology, Student Research Committee, Babol University of Medical Sciences, Babol, Mazandaran, Iran

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*** Corresponding Author:**

Ph.D. of Gerontology, Social Determinants of Health (SDH) Research Centre, Health Research Institute, Babol University of Medical Sciences, Babol, Mazandaran, Iran. Mobile: +98 911 1137787.
E-mail: samaneh.pourhadi@gmail.com

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Abstract

Background: The elderly are the largest population who use not only chemical drugs but also herbal drugs to treat their diseases due to multiple and chronic diseases. Therefore, considering the tendency of the elderly to use medicinal plants and the lack of sufficient documentation regarding the status of their use of medicinal plants, the present study was conducted with the aim of investigating the state of knowledge, attitude and practice of the elderly regarding how to use medicinal plants.

***Methods*:** This study was a cross-sectional study (descriptive-analytical) in order to investigate the state of knowledge, attitude and practice of the elderly regarding how to use medicinal plants on 270 elderly people of Bojnurd city in 2019. The samples were selected by cluster random sampling method. The data collection tool included a questionnaire to measure knowledge, attitude and practice. The data were analyzed using T-tests and ANOVA analysis of variance at a significance level of 5%.

***Results*:** The scores of the elderly were respectively in the variables of knowledge (6.24 ± 2.10), attitude (4.44 ± 1.53) and practice (9.75 ± 2.55). Also, the results showed that 94.4% of participants had poor and average knowledge, 91.1% had poor and average attitude, and 35.2% had poor and average practice. There was a significant difference between the familiarity of the elderly with medicinal plants with three variables of knowledge, attitude and practice ($p<0.001$). Among the medicinal plants, mint (23.2%), thyme, saffron (10.9%) and oregano (9.5%) were the most used medicinal plants, and ginger, rose water and chamomile were the least used medicinal plants among the elderly studied. 29.6% used medicinal plants on a daily basis, 42.2% on a weekly basis, 21.8% on a monthly basis and 6.2% on a yearly basis. The most common reasons for using medicinal plants in the studied elderly are, respectively, 14.8% for diseases such as high blood pressure and diabetes, 25.2% for digestive problems, 22.2% for colds, and 29.6% for all the diseases asked. According to the self-report of the elderly studied, 81 (30%) of the elderly had good knowledge of medicinal plants, 136 (50.4%) had moderate knowledge, and 53 (19.6%) had poor knowledge.

***Conclusion*:** The use of medicinal plants in the elderly of the region is not dependent on their knowledge and they tend to use medicinal plants based on traditional beliefs.

Keywords: Medicinal plants, Knowledge, Attitude, Practice.

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Introduction

Old age is the transition from middle age and entering a new stage of life, which is inevitable(1). The World Health Organization has considered aging as an important challenge in the 21st century(2). Today, due to the increase in life expectancy, improvement in the quality of life and health care, the elderly population has grown significantly(3). It is expected that by 2050, the world's elderly population will increase three times from 2000 and reach two billion elderly people(4), so that one out of every five people will be elderly(5). In Iran, according to the 2015 census, the population over 60 years old is 9.3% of the total population. Based on surveys and statistical indicators, it is predicted that 25 to 30 percent of the country's population will be the elderly by 2030(6).

With increasing age, the probability of contracting chronic diseases increases significantly(7). In this regard, Barry's study showed that 8% of the elderly suffer from at least one chronic disease such as arthritis, high blood pressure, respiratory diseases, heart diseases or sensory disorders, and in the study by Woo et al. in South Korea, 46% of the elderly have more than two diseases at the same time(8, 9). Due to suffering from chronic diseases, the elderly usually use many chemical drugs, and on the other hand, they also use medicinal plants to reduce pain and treat their diseases(10). Although progress in modern medicine has been able to stop some diseases or slow down their growth, it is still unable to cure many diseases(11).

Nowadays, many elderly people use different herbal products and believe that these products are harmless because they are natural (11). On the other hand, due to the fact that elderly people also take other drugs, the simultaneous use of several drugs can become a problem for them and disrupt their treatment(12). In recent years, significant attention has been paid to medicinal plants in global health and hygiene issues(13). Egbabika et al. In a study among elderly people living in England in 2018 showed that the prevalence of using herbal medicines and supplements among residents was 6.33%, and women used herbal medicines significantly more than men(11). On the other hand, due to the modern man's face with the promotion and supply of more and more chemical drugs and the bad side effects of these drugs, it has caused a return to nature and the use of herbal and natural drugs again(13). In recent years, the people of Iran and other countries of the world have paid special attention to the use of medicinal plants for self-treatment, and this interest and attention of the people towards the use of plants and their derivatives has led to the creation of a thriving trade in medicinal plants(8). In a study conducted on the use of herbal medicines in Kashan city in 2017, it was found that 67.8% of the people participating in the study used medicinal plants(11). Complementary medicine or alternative medicine, one of the most important methods of which is herbal therapy or herbal medicine. According to the World Health Organization, herbal therapy includes: the use of plants, plant materials, plant compounds and plant products whose active ingredient is a part of the plant or plant material that is used to treat many diseases

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around the world(14). The therapeutic effects of complementary medicine, including medicinal plants, have been confirmed and their use has become widespread in the health system of many countries of the world(12).

Iran is one of the countries that has plants with considerable diversity, and according to a study conducted in 2015, more than five thousand Attari units were active in Iran, and about 100 to 200 plant species were recognized as prominent medicinal plants and has been introduced by the Ministry of Health and Medicine to the relevant authorities for the preparation and production of medicinal plants(8).

With regard to the use of medicinal plants by the elderly instead of chemical drugs or the simultaneous use of both or replacing these drugs for the treatment of many diseases and considering that so far there are few studies on the state of knowledge, attitude and practice of the elderly regarding the use of medicinal plants has been carried out in Iran, the present study was conducted with the aim of investigating the knowledge, attitude and practice of the elderly regarding how to use medicinal plants in Bojnurd city.

Methods

The study conducted was a cross-sectional (descriptive-analytical) study on elderly people aged 60 years and older who referred to comprehensive health service centers in Bojnurd city and lived in this city. Other inclusion criteria were residence period of at least 10 years in Bojnurd city, not suffering from Cognitive disorders, and consent to participate in the study. Exclusion criteria were Incurable diseases (such as various types of cancer, Alzheimer's, etc.), withdrawal from research, and incomplete completion of the questionnaire. Eligible people to participate in the study were selected by random cluster sampling method, in this way, due to the existence of 7 comprehensive health service centers in this city, each center was initially selected as a cluster and according to the number of elderly covered by each center. Comprehensive health services, the number of samples of each cluster was determined, and then samples were randomly selected among the list of elderly people serving in comprehensive health service centers or health centers covered by that center. The criteria for entering the sample were age 60 years and older, residence period of at least 10 years in Bojnurd city, absence of cognitive disorders and consent to participate in the study.

The demographic information questionnaire for the elderly includes 13 items (age, gender, marital status, level of education, living status, number of children, employment status, medical history, commonly used drugs, medicinal plants used, degree of familiarity with medicinal plants, the most source of information , providers related to medicinal plants and how to use medicinal plants).

Measurement of knowledge, attitude, and practice

The 43-item questionnaire addressed the three aspects of knowledge, attitude, and practice of the elderly. In the present study, the content ratio and content index were 0.79 and 0.8, respectively. The correlation coefficient calculations demonstrated the favorable status of the questionnaire based on the test–retest method.

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Measurement of knowledge

This scale has 11 multiple-choice questions to measure the knowledge of the elderly about medicinal plants. In each question, one option is correct and if it is selected, one point is awarded, and if another option is selected, zero points are considered, the maximum point is 11 and the minimum is 0. In total, the scoring of this questionnaire is 0-5 weak, 6-9 average, 9 and above good.

Measurement of attitude

This scale has 8 multiple-choice questions to measure the attitude of the elderly about medicinal plants. In each question, one option is correct and if it is selected, one point is awarded, and if another option is selected, zero points are considered, the maximum point is 8 and the minimum is 0. In total, the scoring of this questionnaire is 0-3 weak, 6-4 average and above 6 good. minimum is 0. In total, the scoring of this questionnaire is 4-0 weak, 5-8 average and 8 and above good.

For content validity, the number of scoring experts was 12, and according to the Laushe table, values of 0.56 and more were considered to be essential in the questions. The content validity index of all items in the knowledge, practice and attitude section was

higher than 0.50, and to accept the face validity of each item, questions whose scores were higher than 1.5 were acceptable. Regarding the reliability of the questionnaire, how to judge the percentage of agreement (less than 20% bad agreement - 21% to 40% fair agreement - 41% to 60% average agreement - 61% to 80% good agreement - 81% to 100% very good agreement) have been. Finally, SPSS version 16 software was used to analyze the data at a significance level of 0.05.

Measurement of Practice

This scale has 11 multiple-choice questions to measure the practice of the elderly regarding medicinal plants. In each question, one option is correct and if it is selected, one point is awarded, and if another option is selected, zero points are considered, the maximum point is 10 and the

Frequency and frequency percentage were used to describe the data, mean and standard deviation were used for quantitative data, and T-test and ANOVA analysis of variance were used to analyze the data.

Results

In this study, 270 elderly people referring to comprehensive health service center of Bojnurd city were studied. The findings show that the majority of the research subjects were women (68.9 percent), most of them were in the age range of 60-65 years (53 percent) and married (72.6 percent), and their education was below a diploma (39.3 percent) had (Table 1).

The results showed that the scores of the elderly were in the variable of knowledge (6.24 ± 2.10), attitude (4.44 ± 1.53) and practice (9.75 ± 2.55).

Table1: Frequency distribution of demographic characteristics of the elderly referring to comprehensive health service centers in Bojnurd city regarding how to consume medicinal plants in 2019

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Variable	Ages	Frequency (percentage)
Gender	Female	186 (68/9)
	Male	84 (31/1)
Age	60-65	143 (53)
	66-70	75 (27/8)
	71-75	32 (11/9)
	76 and above	20 (7/4)
Marital Status	Single	8 (3)
	Married	196 (72/6)
	Divorced	5 (1/9)
	Widow	61 (22/6)
Living Condition	Alone	46 (17)
	With Wife	171 (63/3)
	Other Members	53 (19/6)
Educational Status	Illiterate	66 (24/4)
	High school	106 (39/3)
	Diploma	59 (21/9)
	Higher than diploma	39 (14/4)
Disease Background	Has it	178 (65/9)
	Doesn't have	92 (34/1)
Number of Children	0	16 (6)
	1-2	65 (24)
	3-5	156 (57/8)
	6-9	33 (12/2)
Employment Status	Retired	62 (23)
	Farmer	13 (4/8)
	Employee	17 (6/3)
	Housewife	140 (51/9)

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	Free	24 (8/9)
	Unemployed	14 (5/2)

As you can see in Table No. 2, the results showed that 94.4% of participants had poor and average knowledge, 91.1% had poor and average attitude, and 35.2% had poor and average practice.

Table2: Frequency percentage of the studied elderly according to knowledge, attitude and practice towards the consumption of medicinal plants

Variable	Weak		Medium		Good		Total	
	Frequency (percentage)		Frequency (percentage)		Frequency (percentage)		Frequency (percentage)	
Knowledge	152	56/3	103	38/1	15	5/6	270	100
Attitude	144	53/3	102	37/8	24	8/9	270	100
Practice	14	5/2	81	30	175	64/8	270	100

There was a significant difference between the studied elderly men and women in terms of attitude (0.011) and practice (0.002), so that men's attitude and practice of women were higher.

There was a significant difference between age groups and three variables of knowledge (0.004), attitude (<0.001) and practice (0.019). Further, the results of Scheffe's Post Hoc Tests for different age groups showed that the elderly with the age group of 60-65 had higher knowledge and attitude than the elderly with the age group of 76 and above. Also, in terms of the practice of the elderly with the age group of 76 and above, they performed better than other age groups.

There was a significant difference in practice (0.03) between the elderly without a history and those with a history of disease.

There was a significant difference between the number of children of elderly people and the two variables of knowledge (0.042) and attitude (0.002). In the elderly with 1 or 2 children, they had more knowledge (P=0.045) and attitude (P=0.002) than the elderly with 3 to 5 children, and this difference was significant.

Also, there was a significant difference between the marital status of the elderly and the variable of attitude, such that the single and married elderly had a higher attitude than the elderly with a deceased spouse (P=0.014).

There was a significant difference between the education of the elderly and the variables of knowledge and attitude. Further, the results of post hoc analysis showed that illiterate people had less knowledge and attitude than people with diploma (P=0.01) and higher than diploma (P<0.001) and this difference was significant.

The results of the study showed that there was a significant difference between the living conditions of the elderly and the variables of knowledge (0.014) and attitude (0.011). Further, the results of the post hoc analysis showed

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that the elderly were only less knowledge of the elderly who lived with their spouses (P=0.365) or other members (P=0.016), and the elderly who lived with other members were less knowledge than the elderly who lived with other members. lived with their spouse, they had more knowledge (P=0.091). Also, the elderly alone had a lower attitude than the elderly who lived with their spouse (P=0.012) or other members (P=0.071), and the elderly who lived with their spouse compared to the elderly who lived with other members. They had more attitudes, but this difference was not significant (P=0.982).

There was a significant difference between the occupation of the elderly and the variable of knowledge (<0.001) such that the employed and retired elderly had higher knowledge than other elderly (p<0.05).

According to Table No. 3, there was a significant difference between the familiarity of the elderly with plants with three variables of knowledge, attitude and practice (p<0.001). Further, the results of the post hoc analysis showed that the elderly who had a good familiarity with medicinal plants had more knowledge than the rest of the elderly. Also, elderly people who had a good knowledge of medicinal plants had a lower attitude than other elderly people. In addition, elderly people who were well acquainted with medicinal plants had higher practice than other elderly people.

Table3: Comparison of knowledge, attitude and practice of the elderly regarding familiarity with medicinal plants

Variable	Acquaintance	Mean ± Standard Deviation	F	P Value
Knowledge	Good	6/84 ± 1/62	6/822	0/001*
	Medium	6/18 ± 2/09		
	Weak	5/51 ± 2/55		
Attitude	Good	3/98 ± 1/56	5/474	0/005*
	Medium	4/63 ± 1/52		
	Weak	4/64 ± 1/36		
Practice	Good	10/28 ± 2/51	9/834	0/000*
	Medium	9/94 ± 2/39		
	Weak	8/43 ± 2/61		

As you can see in table number 4, there was a significant difference between the source of familiarity with medicinal plants of elderly people and the two variables of knowledge and attitude. Further, the results of post hoc analysis showed that the elderly whose source of information was their own studies had higher knowledge than the elderly whose source of information was their friends, relatives and family. (P<0.001) Also, the elderly whose source of information was the press and media had a higher attitude than the elderly whose source of information was their friends, relatives and family (P=0.001).

Table 4: Comparison of the knowledge, attitude and practice of the elderly in terms of the source of familiarity with medicinal plants

Variable	Acquaintance	Mean ± Standard	F	P Value

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		Deviation		
Knowledge	My own studies	7/59 ± 1/52	8/005	0/000
	Friends, Relatives and Family	5/89 ± 2/09		
	Press and Media	6/56 ± 2/13		
	Health Staff	6/50 ± 0/707		
Attitude	My own studies	4/72 ± 1/23	6/110	0/000
	Friends, Relatives and Family	4/19 ± 1/56		
	Press and Media	5/21 ± 1/37		
	Health Staff	5/00 ± 0/000		
Practice	My own studies	10/26 ± 2/27	1/609	0/188
	Friends, Relatives and Family	9/69 ± 2/50		
	Press and Media	9/40 ± 2/93		
	Health Staff	12/50 ± 0/707		

Among the medicinal plants, mint (23.2%), thyme, saffron (10.9%) and oregano (9.5%) were the most used medicinal plants, and ginger, rose water and chamomile were the least used medicinal plants among the elderly studied.

29.6% used medicinal plants on a daily basis, 42.2% on a weekly basis, 21.8% on a monthly basis and 6.2% on a yearly basis.

The most common reasons for using medicinal plants in the studied elderly are, respectively, 14.8% for diseases such as high blood pressure and diabetes, 25.2% for digestive problems, 22.2% for colds, and 29.6% for all the diseases asked.

In this study, 30% of the elderly always or most of the time inform their doctor about their medicinal herb consumption, 40% of them sometimes and 30% said that they never inform their medicinal herb consumption.

According to the self-report of the elderly studied, 81 people (30%) had good knowledge, 136 people (50.4%) had average knowledge, and 53 people (19.6%) had poor knowledge.

The purpose of this research was to determine the state of knowledge, attitude and practice of the elderly regarding how to consume medicinal plants in Bojnurd city in 2019.

Our study showed that 35.2% had poor and average practice. Bagheri et al also showed that the consumption of medicinal plants is 65.8%(15). But Heydarifar et al. reported this rate as 93.5%(16). Al Akil's study in Saudi Arabia also reported this

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amount to be 80%(17). In general, the consumption of medicinal plants is different in different studies, which may have a role in access to medicinal plants or the beliefs of the people in the region and cause this difference. Also, it is possible that the implementation of the plan coincided with the epidemic of Covid-19, which has affected their attitude and practice.

The knowledge and practice scores of women were higher and significant than men. In Golshadi's study, in general, women's knowledge, belief and practice regarding the use of medicinal plants were better than men's(15). Heydarifar also showed that the consumption of medicinal plants and the practice scores are higher in women than in men(18). People with lower age group had more attitude and knowledge than older age groups. Osterman's study in France also showed that younger people have a more positive attitude towards complementary medicine(19). Elderly people who had a history of illness; They had a higher practice score than the elderly without a history of illness, the reason of which could be the more follow-up of sick elderly to find a solution to reduce the pain caused by the disease. A study conducted in the city of Isfahan revealed that 83% of the elderly have a tendency to use medicinal plants, in addition, people suffering from chronic diseases that have not been cured by chemical drugs have a great tendency to use medicinal plants as medicines. They have supplements(20). Also, in the study of Akbari et al., 91% of the elderly believed that medicinal plants are effective in treating their disease(21).

The score of knowledge and attitude was higher in the elderly who had fewer children and also in the elderly who had higher education. These results were not consistent with Heydarifar's study in Qom city (18), which may be due to the difference in beliefs about medicinal plants among educated people in Qom city and Bojnurd.

Employed or retired seniors had a higher knowledge score than other seniors, and unemployed seniors had the least knowledge about medicinal plants. Although Akbari(21) and Dehghanpour(22) showed in their study that job status is not related to knowledge and consumption of medicinal plants; the reason for the greater knowledge of employed and retired elderly people in the current study can be seen as their higher education probability than unemployed elderly people.

The source of information for the majority of the elderly in this study was friends, relatives and family about medicinal plants, which was in line with the results of Adib et al.'s study on the elderly in Kashan(23) and a study in Saudi Arabia(17).

The findings showed that the highest amount of medicinal plants consumed among the elderly in Bojnurd city was mint, followed by thyme and kakuti. In Heydarifar's study, the most used medicinal plant was mint(18). Dabaghian also showed that thyme was one of the most used medicinal plants in the studied population(24). The higher consumption of these plants can be due to the convenient and easy access to these plants in different seasons of the year.

More than two-thirds of the studied people (71.8%) used medicinal plants either daily or weekly. This high rate can be due to the temporal correlation with the spread of Covid-19. Because Dabaghian showed the consumption of medicinal plants in Iran during the outbreak of Covid-19 is high(24). A study in

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Saudi Arabia in 2018 showed that 57% of the elderly studied used medicinal plants on a daily or weekly basis (17), which is probably due to the lack of the spread of Covid-19, or other cultural factors, this amount of the amount obtained in the study The present is less.

In the present study, the most common reason for the use of medicinal plants in the studied elderly was, respectively, 14.8% for diseases such as hypertension and diabetes, 25.2% for digestive problems, and 22.2% for colds. In Akbari's study, the most common reasons for using medicinal plants included colds, digestive problems, headaches, leg pain, and blood pressure, respectively(21). In Adib's study, the most common cause was related to digestive problems and colds(23).

In this study, 12.6% of the elderly always or often informed their physician about their medicinal herb consumption, and 87.4% stated that they never inform their physician about their medicinal herb usage. The results of this study are consistent with the study of Kouhistani, where 27.3% of the elderly informed their doctor about the use of medicinal plants(12). However, in Adib's study(23) and Jaiswal's study, 24% of elderly people in India informed their doctor about the use of medicinal plants(25), which is not consistent with the present study. On the other hand, considering that a study in New Zealand showed that patients do not tell their treatment team about their use of complementary medicine because they are not asked about their use of complementary medicine(9), it is necessary that the doctor and other medical staff should receive the necessary training in this matter.

Conclusions

The results of this study showed that although the level of knowledge and attitude is weak and average, but the practice of the elderly regarding the use of medicinal plants is good; Therefore, it can be concluded that the use of medicinal plants in the elderly of the region is not dependent on their knowledge and they tend to use medicinal plants based on traditional beliefs. Obtaining more drug information from relatives, friends and family in these elderly people supports this result.

One of the biggest limitations of this research was the simultaneous implementation of the research and the collection of information from the elderly with the peak of the Covid-19 epidemic, which forced us to complete the questionnaire using only the elderly who went to the health center themselves. Most of the elderly did not leave their homes due to the spread of the Corona disease, and even when we visited their homes, despite following all the health protocols, they were not willing to cooperate and answer at the door due to the fear of contracting Covid-19.

Our Suggestions to research trend are:

• Investigating the effectiveness of medicinal plants in the elderly

• Investigating the use of various educational programs regarding increasing knowledge and improving attitudes in the elderly

• Wider investigations regarding the level of knowledge, attitude and practice of the elderly in the country

• Investigating the interactions of herbal medicines with chemical medicines used in the elderly.

Declarations:

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Ethics approval and consent to participate: This study was conducted in accordance with the Declaration of Helsinki. The study was carried out following approval from the Ethics Committee of the Babol University of Medical Sciences and obtaining written permission from the university(ethics code number IR.MUBABOL.REC.1399.274) and all ethical requirements were followed in all stages of the research. An informed consent was obtained from all subjects.

Competing interests: The authors declare that there is no conflict of interest.

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Authors contribution:

Conceptualization: P.S.K., S.P.; Methodology: P.S.K., R.GH.; Statistical analysis and investigation: T.M., A.D.N., S.P., R.GH.; Writing - original draft preparation: A.D.N., P.S.K., S.P.; Writing - review and editing: S.P., P.S.K., R.GH., T.M, and A.D.N.

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