

## Original Article

# Use of Medicinal Plants and Synthetic Medicines by Pregnant Women in Kerman, Iran

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## Abstract

**Background:** Pregnant women take medicinal plants for various reasons, supposing that these plants are completely safe for their fetus and their own health. This study aims to identify all types of medicinal plants and synthetic medicines used by pregnant women in Kerman and to study factors related to their use.

**Methods:** In this cross-sectional study, 150 women who had received prenatal care at 12 health centers in Kerman in 2017 were interviewed. Chi-square, t test and logistic regression were applied to investigate factors such as age, gestational age, mother's education, mother's occupation, perception of safety related to the use of medicinal plants and synthetic medicine during pregnancy.

**Results:** In this study, the rate of taking medicinal plants was 71.3% in pregnant women. The most common used medicinal plants and synthetic medicines were mint water (30%) and vitamins (47.3%), respectively. The most important mentioned reason for taking these medicinal plants during pregnancy was digestive problems. 52% of people believed that medicinal plants don't have any side effects. The chance of taking medicinal plants in housewives was 4.4 times more than employed women. Thinking that these medicines are safe to use increased the possibility of taking medicinal plants and synthetic medicines 4.5 and 3.1 times, respectively.

**Conclusion:** Due to the potential side effects of medicinal plants, development and implementation of training programs to increase pregnant women's knowledge and a plan for specialized training for midwives and physicians employed in health centers seems necessary.

**Keywords:** Medicinal plants, Pregnancy, Side Effect, Synthetic medicines

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## Introduction

For a long time people around the world have used medicinal plants for improving their health. Medicinal plants have been used to prevent or treat diseases throughout history.<sup>1-3</sup> Nowadays, 75%–80% of people around the world, especially in developing countries, use medicinal plants for primary level healthcare. In recent years, the use of medicinal plants has significantly increased in developing countries.<sup>4</sup>

Owning to a long history of use, most people and health experts consider medicinal plants completely safe.<sup>4</sup> Women use these medicinal plants because of various reasons.<sup>5</sup> Results have shown that women's tendency to use medicinal plants is more than men. Pregnant women use these plants for various reasons supposing that medicinal plants are natural and completely safe for the fetus and

mother's health.<sup>6</sup>

Although medicinal plants have a lot of beneficial effects, taking these products can have some risks. These risks result from the product itself or interference of these medicines with a patient's medical treatment. Since herbal products are not required to pass clinical trial examinations in order to enter the market, there is no evidence for efficient or mutual effects of these products.<sup>7</sup> Many people interested in medicinal plants do not know that these plants can also be harmful or there is no difference between medicinal plants and synthetic medicines. For example, some herbal products can cause allergic reactions or potentially cause some cancers.<sup>8</sup> The importance of these possible side effects is also due to the dangers that may threaten the fetus. Therefore, it is more important to exercise caution in pregnancy.

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There are a few studies conducted on the safety of medicinal plants during pregnancy. Some plants such as hellebore, hemlock and tragacanth were teratogenic in animals. Moreover, studies have shown that ginger can double the possibility of fetus abortion.<sup>9</sup> In other studies, it has been shown that taking plants such as licorice, mistletoe, linseed, fennel and other plants during pregnancy can cause womb contraction. Some other studies have shown that Turkish Rivas, castor oil and cassia results in some abnormalities in the fetus.<sup>10</sup> Therefore, pregnant women should be warned about the risks of taking medicinal plant without their physician's prescription.

Different amounts of medicinal plants used by pregnant women have been reported from around the world. Studies conducted in Europe, America and Australia have shown that the rate of use of these medicines are between 7% to 56%. The various consumption rates of these drugs in different parts of the world are due to social, economic and cultural differences. Moreover, some studies have shown a relationship between higher education and older age in mothers with greater consumption of these plants.<sup>11</sup>

Given the long history of medicinal plants in Iran and the importance of taking medicines during pregnancy, this study aimed to identify the types of medicinal plants and synthetic medicines used in pregnant women in Kerman, Iran and to study the contributing factors related to their use.

### Materials and Methods

This descriptive and analytical cross-sectional study was conducted from September 2016 until March 2017. Participants included 150 women who had visited the health centers in Kerman to receive prenatal care. Assuming that the consumption prevalence of medicinal plants in pregnant women was 50%, with an error of 8%, and  $\alpha$  equal to 5%, a sample size of 150 persons was calculated. Twelve health centers were selected randomly from all health centers of Kerman city and then proportional to their population, 8 to 18 samples were selected from each center. Iranian pregnant women referred to each center were randomly invited to participate in our study. The women received verbal information about the study and their consent for participation was obtained. Data was collected through a questionnaire. The first section of the questionnaire included personal information (age, gestational age, mother's education, mother's occupation) and the next section contained a check list about symptoms, and the use of different types of medicinal plants and synthetic medicines during pregnancy. Data was collected through interviews conducted by a Maternal and Child Health Counselor.

In the present study, data was analyzed using SPSS 16. Chi-square and *t* tests were applied for univariate analysis. Ultimately, logistic regression was used to determine the relations between significant variables and medicinal

plants and synthetic drugs used during pregnancy. In this study, *P* values less than 0.05 were considered significant.

### Results

Participants' age was from 17 to 41 years with an average of  $26.2 \pm 0.4$  years. 13% of them were illiterate, 62% had a high school diploma and 25% had a university degree. 48% were pregnant for the first time and others had experienced it for the second time or more. The most important symptoms during pregnancy included nausea (55.3%), weakness and lethargy (49.3), backache (41.3%) and heartburn (36%). Some of these women's characteristics are summarized in Table 1.

The usage rate of medicinal plants was 71.3% among these women. Based on this study, the medicinal plants which were most taken included mint water (30%) for relieving stomachache, borage (19.3%) for sedation, edible frankincense (18.7%) for increasing fetus' IQ and Chamomile (16.7%) for sedation. 52% of the participants believed that medicinal plants do not have any side effects.

The most prevalent reasons stated about the use of these drugs during pregnancy included improving gastrointestinal problems and reducing nausea (66.6%), strengthening the nerves and sedation (26%) and increasing the fetus' IQ (20%).

Most of these plants were taken based on their own diagnosis (54.7%), recommendations from other ones (36.3%) and 0.9% of women took these drugs according to physicians' prescription.

The synthetic medicines which were most used, included vitamins (47.3%), iron pills (24.7%) and sedatives (20.7%). In this study, most women (56%) considered taking synthetic medicines only with doctor's prescription and 41.3% of them didn't consider taking these drugs during pregnancy at all. Synthetic medicines, in most cases (89.8%), were used after physicians' prescriptions. 52% of the women simultaneously used medicinal plants and synthetic medicines.

In this study, 42.5%, 10.4%, 15.1% and 32.1% of women had used medicinal plants respectively in the first 3 months, the second 3 months, the third 3 months and during their whole pregnancy. The corresponding figure for synthetic medicines was 14%, 6%, 6% and 40.7% respectively.

The chance of taking medicinal plants in housewives was 4.4 (95% CI: 1.1–17.5) times more than employed women, and in those who considered taking medicinal plants safe it was 4.5 (95% CI: 2.0–10.2) times more than those who considered taking these medicines not safe. The chance of taking more medicinal plants was higher in older women, but the association was not statistically significant (95% CI: 0.9–1.2).

Among the available variables, only "thinking the drug was safe" increased the use of synthetic drugs (odds ratio [OR] = 3.1, 95% CI: 2.1–4.8). No statistically significant

Table 1. Characteristics of the Participants in This Study

Variable	No.	%	
Occupation	Employed	11	7.3
	Housewife	139	92.7
Education	<12 years	20	13.3
	12 years	92	61.3
	12–16 years	34	22.7
	≥18 years	4	2.7
Gestational age	The first 3 months	35	23.3
	The second 3 months	52	34.7
	The third 3 months	63	42
Problems during pregnancy	Nausea and vomiting	83	55.3
	Weakness	74	49.3
	Backache	67	41.3
	Heartburn	54	36.0
	Pain in the abdomen	47	31.3
	Insomnia	44	29.3
	Dizziness	37	24.7
	Sleeping	36	24.0
	Rash on stomach	36	24.0
The plants used during pregnancy	Peppermint water	45	30.0
	Borage	29	19.3
	Edible frankincense	28	18.7
	Chamomile	25	16.7
	<i>Sisymbrium irio</i>	21	14.0
The reasons to use medicinal plants during pregnancy	Improving gastrointestinal problems and reducing nausea	100	66.6
	Strengthening the nerves and sedation	39	26.0
	Increasing fetus' IQ	30	20.0

relation was observed between other variables such as age (95% CI: 0.9–1.1), education (95% CI: 0.5–1.6), job (95% CI: 0.2–4.1), and gravid (95% CI: 0.6–1.8), and use of synthetic medicines.

## Discussion

Pregnancy is a very special time and many annoying symptoms may appear during this time.<sup>12</sup> Therefore, proper use of medicinal plants or synthetic medicines is very important in this period. The results of this study showed that the use of medicinal plants was high and is about 71% among pregnant women in Kerman. Their attitude was mainly (52%) positive about medicinal plants and they considered use of these plants completely safe during pregnancy.

Based on a research conducted by Forster et al in Australia, the amount of medicinal plants used by pregnant women was 36%. In this study, authors reported that the rate of taking these plants was more in older, non-smoker, tertiary educated and primiparous women.<sup>13</sup> In another study conducted by Holst et al the amount of

medicinal plants used by pregnant women was 57.8%. In this study, most medicinal plant users had academic education and most of their knowledge about these plants had been obtained from their friends and relatives, and 75% of pregnant women did not inform their physicians about taking medicinal plants.<sup>14</sup> Our study is in line with the above mentioned issues in terms of taking medicinal plants. In our study, the amount of use of these medicines was most related to self-diagnosis or following advice from friends and relatives. More than half of the participants who used synthetic medicines prescribed by physicians also used medicinal plants as well, and in a few cases they informed their physician. Taking these medicinal plants along with synthetic drugs can cause drug interference and interaction with other medicines such as anticoagulants, anti-diabetics, anti-depressants and tranquilizers. Concomitant use of medicinal plants and anesthetics can threaten both the mother and fetus.<sup>7</sup>

In a study conducted by Sereshhti in Iran on women at Shahrekord, the rate of using medicinal plants by pregnant women was reported to be 51.9%<sup>10</sup> which is lower than our study in Kerman. In another study conducted in Tehran, 84% of pregnant women had used medicinal plants without their physician's advice and based on their own discretion or by their friend's recommendation.<sup>15</sup>

In this study, the greatest rate of taking medicinal plants (42.5%) was in the first 3 months of pregnancy, which is the most sensitive period and can result in fetus abnormalities. Therefore, pregnant women should be sure about the safety of these drugs before use.<sup>16</sup> In another study conducted in Iran, it is estimated that the use of medicinal plants in the third 3 months and especially in the last month of pregnancy is more than other times and was used mainly to help stimulate labor.<sup>10</sup>

The results of studies carried out in Iran indicate poor knowledge of pregnant women about medicinal plants' side effects.<sup>15</sup> Owing to the importance of taking medicines in this period, performing educational programs about this topic is necessary to improve pregnant women's knowledge. Moreover, training midwives, experts and physicians about this topic is necessary. Given the few studies conducted on this issue in Iran and its great importance, conducting more studies in this field is recommended.

One of the limitations of this study was the fact that the participants included were only women who had visited the health centers in Kerman and those who visited private offices were not sampled.

## Authors' Contribution

MS designed the study. HS, SS and MB, collected the data. MZ and NK analysed the data. MS, MZ and NK wrote the manuscript. All the authors approved the final version of the manuscript.

## Conflict of Interest Disclosures

None.

**Ethical Statement**

This study was approved by the Ethics Committee of the University (Ethic Code 167-89).

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