

The prevalence and causes of herbal drug use in pregnant women referring to Abadan health centers; a cross-sectional study in southwest Iran

Noorollah Tahery¹, Nahid Mahmodi¹, Razieh Shirzadegan^{2*}

¹Abadan School of Medical Sciences, Abadan, Iran

²Social Determinants of Health Research Center, Lorestan University of Medical Sciences, Khorramabad, Iran

Correspondence to:

Razieh Shirzadegan,
Email:
raziehsirzad07@gmail.com

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Abstract

Introduction: Using herbal medicines or medicinal herbs is as old as human presence on the planet, and almost all tribes and nations used plants grown in the wild around them.

Objectives: According to importance of mother and her fetus care in pregnancy period, and rising sharply use of herbal medicine this study conducted to determine the prevalence and causes of herbal drug use in pregnant women in Abadan.

Methods: In this cross-sectional descriptive-analytical study, with random two stage, 420 women referring to Abadan health centers were assessed.

Results: Result showed that 34.4% of study units in pregnancy period used herbal drugs. The most range of using was first semester (50.8%). The most causes of using herbal drugs were vomiting and nausea (30.2%).

Conclusion: Increased knowledge of people about herbal medicine side effects on mother and her fetus is necessary.

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Introduction

Using herbal medicines or medicinal herbs is as old as human presence on the planet, and almost all tribes and nations used plants grown in the wild around them. In various times, the amount of medicinal plants has changed a lot due to time circumstances. There are many complex reasons that people use herbal remedies, such as culture, individual belief, philosophical attitude to life, health, and gender; recent studies refer to the widespread use of these drugs and their role during pregnancy (1-3). As the results of studies show, in different countries, 7%-90% of pregnant women use herbal medicines to treat disorders of pregnancy (4-9). After the thalidomide disaster, the prescription of drug use during pregnancy has been limited. Teratogenic effects of drugs in the first trimester and other dangerous complications on the fetus and pregnancy has inclined pregnant women towards using herbal medicines (7), as it appears that women are more willing to use them with regard to the natural and safe aspects of these drugs (10).

The use of medicinal plants in developed countries is also rapidly increasing and the

Core tip

Considering the side effects or benefits of herbal remedies, in pregnant women, this study aimed to determine the prevalence and causes of herbal drugs in pregnant women who referred to health centers of Abadan.

percentage of people who use these plants are increasing (7). Mothers resort to herbal medicines to treat symptoms of pregnancy such as nausea, vomiting, headache etc. (9). The important reasons for the use of herbal medicines in pregnant women have been pointed out in various research to include common cold, abdominal pain, labor induction, nausea and vomiting, and are even used as food additives (7). Despite the popularity of alternative treatments, their safety has not still been sufficiently verified (11,12). The results of some studies confirm that the use of some medicinal herbs such as licorice, mistletoe, fennel and many others cause uterine contractions (13). Moreover, the use of some herbs and products cause premature labor and problems for the fetus in pregnant women (14). Some studies suggest



that the use of herbal medicines cause fetal abnormalities due to teratogenic effects during pregnancy (15).

Therefore, any inappropriate use of medicinal plants can cause devastating risks for patients, even medicinal products in the market that are made of a certain plant species may have different qualities due to differences in the cultivated area, planting conditions, harvesting, mining and extraction. However, unfortunately, in our country, despite the long history of experience in using medicinal plants and knowledge about medicinal plants, and scientists such as al-Biruni, Avicenna, Razi, and also variety of medicinal herbs, as a rich natural source from economic perspective, and as a result, the potential in the production and export of medicinal plants, no major competent steps have been taken in the field of identification, domestication, and mass cultivation of these plants (16).

Objectives

Considering the few studies regarding the administration of medicinal plants in pregnancy, this study was conducted to determine the prevalence and causes of herbal drugs in pregnant women who referred to health centers of Abadan.

Patients and Methods

Study design

This study is a cross-sectional descriptive and analytical study, conducted in 2014-2015 in southwest Iran. The study population included all pregnant women who referred for prenatal care to health centers in Abadan. The initial sample size was calculated at 194, based on the formula:

$$n = \frac{z_{1-\frac{\alpha}{2}}^2 p(1-p)}{d^2}$$

where $\alpha = 0.05$ and according to previous studies (4), in which about 50% of pregnant women consumed medicinal plants and $P = 0.5$ and $d = 0.07$. According to the use of cluster sampling and calculation of the effect equal to 2.108, the final sample size was calculated at 414 patients. Sampling was carried out by two-step random sample, as 7 clinics were selected by cluster random sampling among health centers and urban health centers and then regular random cluster was applied to select medical records of mothers and were recorded based on the time of referral to the center, and the time they interviewed.

Inclusion criteria

All pregnant women who referred to the health centers for prenatal care and were willing to participate in the study.

Data collection instruments and methods

Data was collected by a researcher-made questionnaire. The validity and reliability of the instruments have been confirmed in the study by Sereshti and Azari (reliability = 0.85) (17). In this study, reliability was re-evaluated

using Cronbach's alpha. The questionnaire has two parts; the first part includes demographic information that has nine questions including age, occupation, educational background and his wife, place of birth, pregnancy status, amount of income, parity, and ethnicity. The second part consists of five questions on the use of herbal therapy, its causes and mothers' attitude towards it.

Ethical issues

The research followed the tenets of the Declaration of Helsinki. All participants signed a written informed consent form to participate in the study. This study was approved by the Ethics Committee of the Abadan School of Medical Sciences (No. u-88118-95st-481).

Statistical analysis

To analyze the data, central index, dispersion index, *t* tests, chi-square, and Spearman's correlation coefficient were used. The significance level for the tests was considered 0.05. Data were analyzed using statistical software SPSS. 13.

Results

The results showed that 420 patients completed the study questionnaires with mean age of 23.7 years (SD = 4.7), mean number of deliveries of 1.6 (SD = 0.9). Around 95% of samples were housekeepers while 54.1% were urban citizens. Educational level was elementary-secondary in 61.8% of the studied patients and 63.2% in their spouses. Most mothers had their first pregnancy (58.9%), 22.3% had their second pregnancy, and 46.9% were at the third trimester of pregnancy. The other demographic data were noted in Table 1. About 34.4% of cases used medicinal plants during pregnancy and the highest consumption was in the first trimester (50.8%) and the second trimester (22.1%) and the lowest in the third trimester (2.8%), while 23.5% used plant drugs during the whole pregnancy.

Around 15% used herbal medicine due to the effectiveness of herbs, 23.1% considered lack of complications, 2% easy access, and only 1% for knowing more about herbal medicine. Most herbal medications were used for nausea and vomiting (30.2%), heartburn (12.6%), abdominal pain (12.4%) and 10.5% stated recreational use of medicinal plants.

Most plants used included frankincense (33.7%), mint (15.5%), and Hawk (12.2%) and a few used cumin, four

Table 1. The relationship between the use of medicinal plants and individual characteristics of samples

Individual Features	F or T	P value
Mother's job	T = 23.5	0.1
Living place	T = 30.8	<0.001
Educational level	F = 3.7	0.01
Spouse's educational level	F = 2.03	0.1
Mother's ethnicity	F = 2.03	0.02
Clinic site	F = 2.03	0.04

seeds, and cinnamon. Most use as boiled (37.9%), and the rest as a syrup (25.4%) and as chewing (29.1%) form. Around 72.7% of mothers who had used herbal medicine have suggested that their discomfort was reduced after consumption while 27% have expressed additional discomfort after consumption. Around 97% of herbal medicine was bought from herbal stores. The advisors were parents of the pregnant mother in 71.5% of cases, and 10% the spouse. About 67.7% of cases did not consult with their physician for using medicinal plants. 93.3% of cases stated that they did not consulting with their doctors because of natural and harmless nature of medicinal plants. Around 91% of samples used these herbal drugs when not pregnant and 92% of these drugs suggested them to their friends.

Discussion

One of the most important health policies is the correct use of medicines, including synthetic and herbal drugs during pregnancy. The results of the present study showed that 34.4% of the study population used medicinal plants during pregnancy and most had a positive attitude towards medicinal plants. The results of this study are in line with the study by Frawley et al (3) and Nordeng and Havnen et al in Norway (36%) (12). Kennedy et al, in a study in 23 European, Australian, South American and North American countries reported mean use of herbal medicines at 28.9% during pregnancy and the maximum amount of these medicines was in Russia (69%) and the lowest was in Sweden (4.3%) (18). In the study by Sereshti and Azari, use of medicinal plants in Shahr-e-Kord was reported 51.8% that reflects large use of medicinal plants during pregnancy (17). In the study by Bagheri et al, in Isfahan, 89% of the studied population used medicinal herbs (16). However, this period affects maternal and fetal health. In fact, most of these herbs have completely unknown effects and their complications have not yet been studied.

Difference in economic, social and cultural status, access to medicinal herbs, the growth of medicinal herbs in different regions and cultural and personal beliefs are causes of differences in consumption of medicinal herbs. Hence, it appears that medicinal herbs should be studied more carefully for complications, therapeutic and non-therapeutic side effects.

Various studies have reported teratogenic effects of many herbs (borage, basil, cinnamon, fennel, licorice, barberry, oregano, parsley, pune, mint, roses, rosemary, saffron and chicory). Frawley et al stated that using herbal medicines should be prohibited for pregnant women, since comprehensive and complete information on risks of herbal medicines during pregnancy is not available (3).

Most common herbs used in the present study included frankincense, mint, *Descurainia sophia*, cumin, and four seeds. in the study by Kennedy et al in 2013 in 23 countries, the most commonly used plants were cranberry, lavender, raspberry, chamomile, peppermint, dog rose, lingonberry,

ginger, cranberry, valerian, raspberry, chamomile, peppermint, dog rose, cowberry, respectively, which in most cases are very different from Iranian studies. This issue affects the mismatch of foreign with Iranian articles and using their results (17).

Since the administration of medicinal herbs has no scientific source, awareness of families and the elders are necessary. The highest reason of consumption of herbal drugs in pregnancy included nausea, vomiting, heartburn and abdominal pain. It should be noted that most complaints of pregnant women during pregnancy include nausea and vomiting, abdominal pain and heartburn. Kennedy et al, also reported the most common reasons of the use of herbs in pregnancy to include nausea and urinary tract infection and stated ginger as the first herb used to treat nausea and gastrointestinal diseases, which is confirmed to have no teratogenic and negative impacts on the pregnancy in clinical trials and have a positive impact on nausea during pregnancy (18).

Additionally, pregnant women should know healthy and harmless nature of medicinal plants, that they used. One of the points for medicinal herbs is that tannins exist in most of these plants that impair iron absorption (10) and the incidence of iron insufficiency is high in pregnant women. The findings of this study also showed that 50% of pregnant women used medicinal plants in the first trimester, when they may not be aware of being pregnant, while, the side effects of drugs and medicinal plants in the first trimester can cause structural abnormalities in the fetus. Hence, it is better to generally cut the use of herbs during pregnancy (11).

According to the results, most participants suggested the medicinal plants to their friends and since recommendation of friends can greatly affect using these plants, it is recommended that public education through the mass media be provided to pregnant mothers about the consequences of arbitrary use of medicinal plants.

The results showed that education of the mother and the spouse has a significant relationship with the use of medicinal plants. People with higher education are less likely to use medicinal plants.

Conclusion

Increased knowledge of people about herbal medicine side effects on mother and her fetus is necessary.

Limitations

This is a pilot study with a limited proportion of participants. We suggest further investigations in this regard.

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Authorship contribution

NT and RSH contributed to study design, data collection, data analysis, drafting the manuscript writing, and critical revisions of the final manuscript. RSH, HR and AB contributed to study design, data collection, study design, data analysis, study supervision, drafting the manuscript writing, and critical revisions of the final manuscript. SS and RSH contributed to study design, data collection, data analysis, study supervision, drafting the manuscript, and critical revisions of the final manuscript. NM participated in article translation and data collection.

Conflicts of interest

The authors declare that they have no conflicts of interest.

Ethical considerations

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors.

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References

- Adams J, Sibbritt D, Lui CW. The use of complementary and alternative medicine during pregnancy: A longitudinal study of Australian women. *Birth*. 2011; 38: 200-6. doi: 10.1089/jwh.2013.4568
- Frawley J, Adams J, Sibbritt D, Steel A, Broom A, Gallois C. Prevalence and determinants of complementary and alternative medicine use during pregnancy: Results from a nationally representative sample of Australian pregnant women. *Aust N Z J Obstet Gynaecol*. 2013; 53: 347-52. doi: 10.1111/ajo.12056.
- Frawley J, Adams J, Steel A, Broom A, Gallois C, Sibbritt D. Women's use and self-prescription of herbal medicine during pregnancy: an examination of 1,835 pregnant women. *Womens Health Issues*. 2015;25:396-402. doi: 10.1016/j.whi.2015.03.001.
- Bercaw J, Maheshwari B, Sangi-Haghpeykar H. The use during pregnancy of prescription, over-the-counter, and alternative medications among Hispanic women. *Birth*. 2010; 37: 211-8. doi: 10.1111/j.1523-536X.2010.00408.x.
- Bishop JL, Northstone K, Green JR, Thompson EA. The use of complementary and alternative medicine in pregnancy: Data from the Avon Longitudinal Study of Parents and Children (ALSPAC). *Complement Ther Med*. 2011; 19: 303-10. doi: 10.1016/j.ctim.2011.08.005.
- Forster DA, Denning A, Wills G, Bolger M, McCarthy E. Herbal medicine use during pregnancy in a group of Australian women. *BMC Pregnancy Childbirth*. 2006; 19: 6-21. doi:10.1186/1471-2393-6-21
- Pin graham, Pallett Linda. Herbal medicine in pregnancy. *Complementary therapies in nursing & midwifery* 2002; 8: 77-80. doi.org/10.1054/ctnm.2001.0620
- Nordeng H, Havnen GC. Impact of socio-demographic factors, knowledge and attitude on the use of herbal drugs in pregnancy. *Acta Obstet Gynecol Scand*. 2005; 84: 26-33. DOI:10.1111/j.0001-6349.2005.00648.x
- Westfall RE. Use of anti-emetic herbs in pregnancy: women's choices, and the question of safety and efficacy. *Complement* 2004; 10: 30-36. DOI: 10.1016/S1353-6117(03)00057-X
- Holst L, Wright D, Nordeng H, Haavik S. Use of herbal preparations during pregnancy: Focus group discussion among expectant mothers attending a hospital antenatal clinic in Norwich, UK. *Complement Ther Clin Pract*. 2009; 15: 225-229. doi: 10.1016/j.ctcp.2009.04.001.
- Low Dog T. The use of botanicals during pregnancy and lactation. *Altern Ther Health Med*. 2009; 15: 54-58.
- Nordeng H, Havnen GC. Use of herbal drugs in pregnancy: a survey among 400 Norwegian women. *Pharmacoepidemiol Drug Saf*. 2004; 13: 371-80. DOI: 10.1002/pds.945
- Strandberg TE, Järvenpää AL, Vanhanen H, McKeigue PM. Birth outcome in relation to licorice consumption during pregnancy. *Am J Epidemiol*. 2001; 1; 153:1085-8.
- Margaret A, Winker MD. Personal use of alternative medicine therapies in health science center faculty. *JAMA*.1998;280 : 1563- 1568. doi:10.1001/jama.280.18.1563
- Dugoua JJ. Herbal medicines and pregnancy. *J Popul Ther Clin Pharmacol*. 2010; 17: e370-8.
- Bagheri A, Naghdi Badi H, Movahedian F, Makkizadeh M, Hemati A. Evaluation of using herbal medicine in Isfahan women population. *JMP*. 2005; 3:81-93.
- Sereshti M, Azari P. Prevalence use of herbal drug and attitude of women about use of herbal product among women refer to health care center in Shahrekord. *Knowledge and Health*. 2008;2:20-26. [Persian].
- Kennedy DA, Lupattelli A, Koren G, Nordeng H. Herbal medicine use in pregnancy: results of a multinational study. *BMC Complement Altern Med*. 2013; 12: 343-355. doi: 10.1186/1472-6882-13-355