

## Predicting Factors Related to Self-Medication among Pregnant Women Referred to Health Centers in Kermanshah County

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**Abstract:** Self-medication is one of the most common health problems in health care system; furthermore, self-medication among pregnant women causes fetal abnormalities are more sensitive compare than other people. The aim of this study was to determine the prevalence and cognitive factors related to self-medication among pregnant women based on the Health Belief Model. This cross-sectional study, conducted among 308 pregnant women's who referred to the health centers in Kermanshah County. Participants selected in random sampling and data were collected by using questionnaire in self-report. Data were analyzed by SPSS version 21 using t-test, Chi-square, bivariate correlations and logistic regression statistical tests. The 29.3% of the participants had reported history of self-medication. The 20.1 and 9.2% of participants reported OTC (Over The Counter) and POM (Prescription Only Medicine) drugs used for self-medication. Pain medication (8.4%), antibiotics (7%) and vitamins (3.3%) had the largest used for self-medication. The regression analysis showed perceived severity (OR: 0.710) and perceived susceptibility (OR: 0.753) was a best predictor for self-medication. Based on our result, it seems that designing and implementation of preventional programs for pregnant women's, focused on promotion belief towards seriousness about side effect of self-medication could be usefulness result to self-medication prevention.

**Key words:** Self-medication, pregnancy, health belief model, over the counter, prescription only medicine

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### INTRODUCTION

Self-medication has been known as a common health problem in health care systems and the simplest form of self-caring. It includes two aspects: the first refers to regular medicine which suggests fewer side effects and high safety to control disease symptoms. If the medicine is used under the supervision of the experts, there will be no consequences. The group of medicines is called Over The Counter (OTC). The second aspect of self-medication refers to strong medications on side effects and certain medicines which need to be prescribed by a physician, and patients are avoided to use them on their wills. They are called Prescription Only Medicine (POM) (Sahebi *et al.*, 2009). Individuals may only be aware of safety and healing features of the medicines; however in

addition to the positive effects on pathogens, medicines also include threaten to human life if the care is not taken while using them (Jalilian *et al.*, 2013b). The importance of improper medicine use has been known due to its side effects, threatens, death and its high costs to government medicine budget, insurance institutions and the society. Medicine improper use has been introduced as a global issue while self-medication rates are increasing around the world which could include several consequences such as risk of reuse, extra dosage, late improvement of a major disease, hidden symptoms of the disease and medicine interactions (Melo *et al.*, 2006). As is understood from the concept, medicine use is relative to all social, cultural, religion and people health literacy and proper medicine use has been seen as a goal and plan in World Health Organization and also health care ministries

(Davatei *et al.*, 2008). The role of women as the sample of behavior to family members and their pregnancy period is known to be very important (Ghaneie *et al.*, 2013) since pregnancy may increase medication rates among women (Tesch, 2003). Pregnant women are more sensitive to self-medication as it may affect fetus growth and causes abnormalities (Ghaneie *et al.*, 2013). Giving birth to an abnormal infant causes problems both for families and society. On the other hand, several studies reported females tendency to self-medication in the cases of dysmenorrhea, recover menopause symptoms, period disorders, preventing osteoporosis a, also, overcoming pregnancy and breast feeding problems (Tajik *et al.*, 2008).

Considering the necessity to plan and development preventional solutions to prevent self-medication among pregnant women, several studies on the field showed that the main term to planning is to know existing situations and current conditions of the given issue in order to affect intended community under practice (Jalilian and Emdadi 2011; Jalilian *et al.*, 2015a, b). In addition, since human behavior results from various factors, behavioral science experts have investigated major factors influencing human behavior and developed theories to help experts recognize effective factors on behavior (Glanz *et al.*, 2008). In this regard, Health Belief Model has been used in several studies to analyze self-medication (Shamsi *et al.*, 2009; Jalilian *et al.*, 2013a). The model focused on how comprehension and personal beliefs about health problems and evaluating benefits and difficulties to preventive behaviors may influence individuals behaves. According to the model, individuals first should feel the danger of the issue to take preventive operations (perceived susceptibility), then recognize the risk and its related sever psychological and physical effects or perceived severity and finally, see if the benefits of preventive behavior are positively evaluated and no major barriers stop taking preventive behaviors (Rosenstock *et al.*, 1988). Therefore, considering the importance of the issue understudy, the present study was done by use of health belief model to determine self-medication prevalence and its relative cognitive factors among pregnant women attending health care centers in Kermanshah, Iran.

## **MATERIALS AND METHODS**

This descriptive-sectional study carried out among 308 pregnant woman attending health care centers in Kermanshah, Iran. According to Ghaneie *et al.* (2013), the number of participants was confirmed 308 with 95% confidence and 0.05 accuracy. To conduct the study, first different districts of Kermanshah were considered as a

cluster and two centers were randomly selected in each district and the required data was gathered. Participants were informed about study procedure and were assured on secrecy of their responses. All participants reported their willingness to attend the study. Removing the incomplete questionnaires, 273 questionnaires were analyzed (response rate in the present study was 88.6%). This study has been approved by the Institutional Review Board at the Kermanshah University of Medical Sciences (KUMS.REC.1394.259).

Data gathered was done by using a self-report questionnaire which included two sections. The first section required demographic information such as age (year), education (lower high school, high school graduate, college degree), insurance (yes, no), occupation (housewife, employed), history on self-medication during pregnancy (yes, no); if there is a history on self-medication, what types of medications were taken: cough medicine, antidepressants, analgesics, vitamins, antihistamines, sedatives, digestive system drugs, antibiotics, cardiovascular system drugs, anti-fungal and parasitic, effective drugs on the kidneys and urinary tract, drugs that affect the skin, hormonal drugs, ocular drugs, other drugs and what medicine groups were taken: OTC, POM.

The second section investigated health beliefs model constructs and included five parts. Research team made use of the previous studies on self-medication which used health belief model (Shamsi *et al.*, 2009; Jalilian *et al.*, 2013a) to develop questionnaires on a 5-Likert scale. To check the reliability of the questionnaires, a pilot study was conducted on 30 participants and Cronbach alpha was calculated. Also, a group of experts, including internal medicine, PhD of health education and health promotion, PhD of health services management, womenhealth expert, were consulted to confirm the validity of the questionnaires.

**Perceived susceptibility on risk of self-medication:** It included five items (e.g., “I worry about the side effects of self-medication”). Higher scores suggest higher levels of perceived susceptibility on self-medication risks. The Cronbach alpha was 0.81.

**Perceived severity of self-medication complications:** It included four items (e.g., “self-medication could cause control several consequences to me and my fetus”). The higher the gained score, the stronger was the perceived severity of self-medication consequences. The Cronbach alpha was 0.80.

**Perceived barriers to avoid self-medication:** It had seven items (e.g., “it is a common disease and it is not necessary

to visit a doctor”). Higher scores showed more perceived barriers to avoid self-medication. Questionnaire Cronbach alpha was 0.73.

**Perceived benefit to avoid self-medication:** It had four items (e.g., “take medicine with a doctor’s prescription would be more accurate diagnosis of my disease”). Higher scores showed more perceived benefit to avoid self-medication. Questionnaire Cronbach alpha was 0.82.

**Cues to action to self-medication:** It included three items (e.g., “my friends warn me to avoid self-medication”). Higher scores showed more cues to action to avoid self-medication. Questionnaire Cronbach alpha was 0.79.

Data were analyzed by SPSS version 21 using appropriate statistical tests including Chi-square, t-test and logistic regression at 95% significant level.

**RESULTS AND DISCUSSION**

Participants’ ages ranged from 19-43 years (mean age 29.16±6.44) from which 34.3% were between 19-25 and 28.6% ranged from 26-36. Considering education, 16.8% reported that they did not finish high school, 60.4% graduated from high school and 22.7% had college degrees. Only 15.4% of participants were employed. About 8.1% reported their lack of insurance. The 80 participants (29.3%) reported self-medication during their pregnancy, where 55 participants (20.1%) used OTC medications and 25 participants (9.2%) took POMs. Pain medication (8.4%), antibiotics (7%) and vitamins (3.3%) were mostly self-medicated by pregnant women attending the present study.

The relationship between socio demographic variables and self-medication was showed in Table 1. As seen, the higher the education level, the more the higher were self-medication rates.

Table 1: Demographic characteristics influencing on self-medication

Characteristics	Self-medication (Mean (SD) N (%))		p-values
	Yes	No	
Age	30.17 (6.73)	28.74 (6.28)	t = 1.679, p = 0.094
<b>Education level</b>			$\chi^2 = 9.976, p = 0.007$
Under diploma	10 (21.7%)	36 (78.3%)	
Diploma	42 (25.5%)	123 (74.5%)	
Academic education	28 (45.2%)	34 (54.8%)	
<b>Insurance</b>			$\chi^2 = 3.013, p = 0.083$
Yes	70 (27.9%)	181 (72.1%)	
No	10 (45.5%)	12 (54.5%)	
<b>Occupation</b>			$\chi^2 = 2.991, p = 0.084$
Employed	17 (40.5%)	25 (59.5%)	
Housewife	63 (27.3%)	168 (72.7%)	
<b>During pregnancy</b>			$\chi^2 = 0.205, p = 0.650$
First quarter	35 (34.3%)	67 (65.7%)	
Second quarter	33 (28.2%)	84 (71.8%)	
Third quarter	12 (22.2%)	42 (77.8%)	

Table 2 shows the correlations. Significance levels at the 0.01 and 0.05 were the criteria for the analysis. The findings indicate that for the sample, cues to action was significantly related to susceptibility (r = 0.339), severity (r = 0.341), benefit (r = 0.120) and barrier (r = -0.129). Barrier was significantly related to susceptibility (r = -0.123) and benefit (r = -0.151) and not significant related with severity (r = -0.079). Benefit was significantly related to susceptibility (r = 0.249) and severity (r = 0.269). In addition, severity was significantly related to susceptibility (r = 0.876).

Finally, logistic regression analysis (Backward Stepwise Wald Method) showed that the final model resulted in the fourth step and among structures understudy, perceived severity (OR = 0.710) and perceived susceptibility (OR = 0.733) were stronger predictors to self-medication (Table 3).

Results from the present study reported 29.3% of self-medication prevalence among participants. Along with this, several studies reported 2.6-54% of self-medication among pregnant women around the world (Tajik *et al.*, 2008; Afshary *et al.*, 2015; Liao *et al.*, 2015). Studied pregnant women in Arak, Iran and reported 54% of self-medication among them (Tajik *et al.*, 2008). In another study, Afshari *et al.* (2015) suggested 30.6% of self-medication among Australian pregnant women (Frawley *et al.*, 2015). Tinker *et al.* (2015) reported the rate to be 22% among American pregnant women. However, Liao *et al.* (2015) reported a very low self-medication of 2.6% among Chinese pregnant women. Results from the present study reported high prevalence of self-medication among Iranian pregnant women which could warn women health care legislators.

Results also focused on analgesics, antibiotics and vitamins as the most common self-medicated medicines among pregnant women participated in the present study. In addition, self-medication rates were 20.1 and 9.2% for OTC and POMs, respectively which corresponds to the results from similar studies in Iran (Jalilian *et al.*, 2013b; Tajik *et al.*, 2008; Shamsi *et al.*, 2009).

Table 2: Predictor variables correlation matrix

Variables	X <sub>1</sub>	X <sub>2</sub>	X <sub>3</sub>	X <sub>4</sub>
X <sub>1</sub> : perceived susceptibility on risk of self-medication	1			
X <sub>2</sub> : perceived severity of self-medication complications	0.876**	1		
X <sub>3</sub> : perceived benefit to avoid self-medication	0.249*	0.269*	1	
X <sub>4</sub> : perceived barriers to avoid self-medication	-0.123*	-0.079	-0.151*	1
X <sub>5</sub> : cues to action to self-medication	0.339**	0.341**	0.120*	-0.120*

\*Correlation is significant at the 0.05 level (2-tailed); \*\*Correlation is significant at the 0.01 level (2-tailed)

Table 3: Logistic regression analysis for HBM variables related to self-medication

Variables	B	SE	Odds ratio	95% confidence intervals		p-values
				Lower	Upper	
Perceived susceptibility on risk of self-medication	-0.283	0.091	0.753	0.630	0.901	0.002
Perceived severity of self-medication complications	-0.342	0.122	0.710	0.559	0.902	0.005

Also, there was a statistically significant relationships between education level and self-medication so that the higher the education levels, the stronger were self-medication rates. These results were highly in accordance to the results from other studies. Tajik *et al.* (2008) and Figueiras *et al.* (2000) also suggested the increase of self-medication due to higher levels of education. Considering the results it seems essential to development promotion interventions to educated women. The reason could be that more educated women were more familiar with positive consequences of medicines which leads to higher self-medication rates among them. However, since the present study did not consider the reasons to self-medication and participants knowledge on positive and negative effects of medicines, it would be difficult to effectively discuss the issue. Therefore, further study on the field is suggested.

Results from the regression analysis reported perceived severity (OR = 0.710) and perceived susceptibility (OR = 0.753) variables were as the strongest predictors to self-medication among pregnant women. Results were in accordance to the previous studies (Jalilian *et al.*, 2013a; Andersson *et al.*, 1999; Mirzaei *et al.*, 2012). It is worth noting that individuals, who believed themselves secure against risky behaviors to their health, reported few vulnerability beliefs to their surrounding risks. In other words, they consider themselves immune to health risks and threaten and as the result, avoid preventive behaviors (Allahverdipour *et al.*, 2012). In fact, sense of immunity describes individual's perception to the belief that he is less influenced by self-medication consequences which results in individuals' higher tendency to self-medication.

### CONCLUSION

Results from the present study suggested that effective constructs on preventing self-medication result if training programs focus on pregnant women's perceived severity and susceptibility to self-medication consequences on both mothers and their fetus.

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