



CLINICAL ARTICLE

Awareness of danger signs and symptoms of pregnancy complication among women in Jordan

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ABSTRACT

Objective: To assess the level and determinants of awareness of the danger signs and symptoms of pregnancy complication among pregnant Jordanian women aged 15 years and older. **Methods:** A descriptive cross-sectional study of 350 women attending prenatal care services was performed. Interviews were conducted at 4 public-health centers in Zarqa, Jordan, using a structured questionnaire. Awareness was defined as “knowing at least 4 danger signs and symptoms”. **Results:** Overall, 84.8% of the women interviewed were not aware of danger signs and symptoms of pregnancy complication. Sociodemographic factors—including duration of education and current employment; husband’s duration of education; family size; and whether women were given information about danger signs and symptoms—were associated with awareness in a binary analysis. Multivariate logistic regression analysis revealed that education level of study participants, their husbands’ education level, and receiving information about danger signs and symptoms were all associated with awareness ($P=0.02$ for all associations). **Conclusion:** Awareness of danger signs and symptoms of pregnancy complication among women in Jordan is low. A need exists to provide prenatal care that includes sufficient information about pregnancy-related danger signs and symptoms to meet the need for safe motherhood, as pointed out by the Millennium Development Goals.

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1. Introduction

Awareness about health issues surrounding pregnancy can empower women to improve their health [1]. Approximately 15% of pregnant women who experience complications are at risk of developing poor, yet preventable, pregnancy outcomes [2]. Enabling pregnant women to recognize early signs and symptoms of pregnancy complication is a primary step toward seeking timely obstetric care before the lives of mothers or their fetuses are endangered [3–5]. Studies in obstetrics indicate that pregnancy complications may not be regarded as abnormal by all women, owing to a lack of perception regarding important early danger signs and symptoms [6,7]. In this respect, many early signs and symptoms of the leading causes of maternal deaths, such as thromboembolic disease, eclampsia, and sepsis, may not be recognized by a large proportion of pregnant women and their families [5–7]. This failure may lead to delayed decision in seeking care, which is reported to be a contributing factor in 30%–77% of all maternal deaths [8,9]. Studies indicate that education about pregnancy danger signs and symptoms targeting healthcare providers at

different levels, as well as women of reproductive age, increased awareness and recognition of complications, motivated women to seek timely support, and improved referral to health services [10–14].

According to a Jordanian study, the leading causes of maternal deaths in this country during the period 2007–2008 were hemorrhage and thromboembolic disease, while lack of awareness about pregnancy danger signs and symptoms was considered responsible for 55% of all maternal deaths [15]. In Jordan, 99% of women receive some prenatal care from a medical professional during the first trimester of pregnancy; however, only half of all pregnant women in Jordan are informed about signs and symptoms of pregnancy complications, while just 38% are informed about puerperal complications [16].

Jordan is a middle-income country, with a population of more than six million and a total fertility rate of 3.8% [17]. Healthcare services are mainly provided by the Ministry of Health [16,18]. Available local studies are limited and mainly address individual’s prenatal care and perceptions of the quality of health care [16,18,19]; however, no specific information is available about awareness of pregnancy complications among pregnant women. Such data would help clinicians and health-policy makers understand perceptions and preparedness for pregnancy among Jordanian women.

The aim of the present study was to assess awareness of pregnancy danger signs and symptoms and associated factors among a group of Jordanian women attending maternity clinics in an urban setting.

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2. Materials and methods

A descriptive cross-sectional study was conducted. The study population included all pregnant women, aged 15 years and older, who attended 1 of 4 prenatal care clinics at any time during March 2010, regardless of gestational age. In total, 385 pregnant women were approached to participate in the study, 350 of whom agreed (response rate 90.9%). The study was conducted at public maternity centers in Zarqa, a city located 30 km north of the Jordanian capital Amman. The study was approved by the Committee of Ethics and Research at Jordan University of Science and Technology, Irbid, Jordan. Study participants gave their verbal consent. Confidentiality was assured.

Data were collected through face-to-face interviews by 6 trained female healthcare workers. A structured questionnaire was pilot-tested on 20 women (not included in the final study group). The questionnaire covered sociodemographic characteristics and included age; education; employment; husband's education; monthly income; family size; marriage duration; consanguinity; and smoking status. The core questions were about awareness, which was measured at 2 levels. First, self-perceived awareness about pregnancy danger signs and symptoms were evaluated. Second, the woman's actual knowledge of pregnancy danger signs and symptoms were recorded: participants responded either "yes" or "no" regarding each of the 12 danger signs and symptoms included in the study. In addition, the women were asked whether they were given information about danger signs and symptoms during prenatal care; if they had experienced any of those symptoms; and whether they had visited a healthcare professional for any of those complaints. Women were categorized as "aware" if they knew 4 or more of the listed danger signs and symptoms, and "not aware" if they knew fewer than 4 of these signs and symptoms.

The data were analyzed using SPSS version 15 (IBM, Armonk, NY, USA). Frequencies and percentages were used to describe the data. Where appropriate, binary χ^2 analysis was used; $P \leq 0.05$ was considered to be statistically significant. Logistic regression analysis was used to estimate the adjusted odds ratio (OR) of awareness as a dependent variable, controlling for variables that appeared statistically significant in the χ^2 analysis.

3. Results

Table 1 summarizes the sociodemographic characteristics of the 350 pregnant women who participated in the present study. The median age of the study group was 27 years. Most women were less than 30 years of age; were educated to high school level or less; and were unemployed. The results showed that 42.2% of women had a family income of less than 250 Jordanian dinars (approximately US \$350) per month; 25.7% had 3 or more children; and 37.1% were married to a first-degree or second-degree relative.

In all, 279 (79.7%) women experienced at least 1 of the pregnancy danger signs and symptoms; 255 (91.3%) of these women visited a clinic as a consequence (Table 2). By contrast, only 26.8% were informed by a doctor about the signs and symptoms of life-threatening obstetric complications (Table 1).

Table 2 outlines the participants' perceived knowledge about the danger signs and symptoms of pregnancy complications. A total of 53 women (15.1%) recognized at least 4 of the 12 danger signs and symptoms included in the study, while 214 women (61.1%) recognized at least 1 of these signs and symptoms. In total, 38.8% of the women could not recognize any of the danger signs.

Overall, 72.6% of women said they had general knowledge about pregnancy danger signs and symptoms, while a smaller proportion (214 women) knew specific danger signs and symptoms by name (Table 2). The danger signs and symptoms that were most often recognized were vaginal bleeding (101 women), dizziness (97 women), and vomiting (93 women). Regarding the source of information about

Table 1

Sociodemographic characteristics of the study group (n=350) in relation to their awareness of the signs and symptoms of pregnancy complication.^a

Variable	Aware	Not aware	P value ^b
Age, y			0.49
18–29	37 (16.1)	193 (83.9)	
≥30	16 (13.3)	104 (86.7)	
Education duration (women), y			<0.001
≤12	33 (11.6)	251 (88.4)	
>12	20 (30.3)	46 (69.7)	
Employment (women)			<0.001
Employed	8 (40.0)	12 (60.0)	
Unemployed	45 (13.6)	285 (86.4)	
Education duration (husband), y			<0.001
≤12	35 (12.0)	256 (88.0)	
>12	18 (30.5)	41 (69.5)	
Family monthly income, JD/mo			0.053
≤250	16 (10.8)	132 (89.2)	
>250	37 (18.3)	165 (81.7)	
Number of family members			0.02
≤5	214 (82.3)	46 (17.7)	
>5	83 (92.2)	7 (7.8)	
Duration of marriage, y			0.33
≤5	32 (16.8)	158 (83.2)	
>5	21 (13.1)	139 (86.9)	
Consanguinity			0.30
Relatives	23 (17.7)	107 (82.3)	
Not relatives	30 (13.6)	190 (86.4)	
Smoking			0.69
Yes	2 (11.8)	15 (88.2)	
No	51 (15.3)	282 (84.7)	
Has experienced danger signs and symptoms			0.30
Yes	234 (83.9)	45 (16.1)	
No	63 (88.7)	8 (11.3)	
Has been informed by a doctor about danger signs and symptoms			0.03
Yes	8 (8.5)	86 (91.5)	
No	45 (17.6)	211 (82.4)	

Abbreviation: JD, Jordanian dinar.

^a Values are given as number (percentage) unless otherwise indicated.

^b χ^2 test.

pregnancy danger signs and symptoms, 73.1% of women obtained information from sources other than a doctor or healthcare provider.

A binary χ^2 analysis of sociodemographic characteristics versus level of awareness about pregnancy danger signs and symptoms was performed (Table 1). Awareness was significantly related to years of education for either the husband or wife ($P < 0.001$ for both associations); women's employment status ($P < 0.001$); family size ($P = 0.02$), and provision of information about pregnancy danger signs and symptoms by healthcare workers ($P = 0.03$).

The factors significantly associated with level of awareness in the binary analysis were entered into a logistic regression model (Table 3). In this analysis, awareness correlated with years of education and the receipt of health education about danger signs and symptoms of pregnancy complications from healthcare workers during prenatal care visits. The adjusted ORs were 2.404 (95% CI, 1.149–5.032) for wives with 12 or more years of education; 2.350 (95% CI, 1.130–4.886) for husbands with 12 or more years of education; and 2.637 (95% CI, 1.153–6.030) for provision of health education ($P = 0.02$ for all comparisons).

4. Discussion

Awareness of the danger signs and symptoms of pregnancy complication should help women make timely decisions about medical care [4,10,14,20]. A considerable proportion of women enrolled in the present study (84.9%) recognized fewer than 4 danger signs of serious pregnancy complications, and 38.8% could not name any of these signs and symptoms. In addition, only approximately one-quarter of the study group reported being informed of the danger

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