


Cross Sectional Study
A Cross Sectional Study about Unintended Pregnancy among Women in Erbil, Kurdistan Region of Iraq

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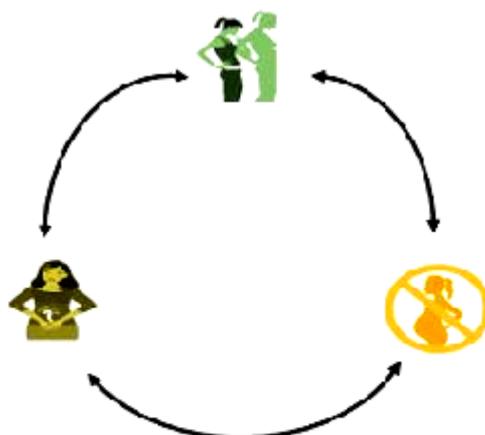
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ABSTRACT

An unintended pregnancy is an indicator of a woman's reproductive health status. This study aimed to assess the prevalence of unwanted pregnancy and related factors among pregnant women in Erbil Governorate, Iraqi Kurdistan. This cross-sectional study was carried out between 1/2/2020 and 31/1/2021. It was conducted with 500 pregnant women who attended an antenatal care hospital in downtown Erbil, as well as two health centers in the region. A structured questionnaire was used to collect data. Descriptive statistical method was used to analyze data using the SPSS system. The results showed that of the total pregnant women participating, 179 (39.4%) were exposed to an unintended pregnancy, the proportion of unintended pregnant women in the older (≥ 35) age group (18.4%) and those with insufficient income (30.4%) was significantly ($p \leq 0.05$) greater compared with those who intended to become pregnant (2.8% and 22.6%). Women with unintended pregnancies had a significantly higher incidence of multi-gravida and parity ≥ 4 than women with intended pregnancies. The majority of pregnant women without intent (73%) were using contraceptives, 58% of whom gave birth naturally. Our region needs more studies on unintended pregnancies, delving into more accurate details, and spreading reproductive health awareness among women, especially concerning contraceptives.

GRAPHICAL ABSTRACT

prevalence of unintended pregnancy

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Introduction

Unintended pregnancy is considered as one of the most important reproductive health problems due to its negative outcomes [1]. It includes the case of an untimely (wanted but not planned) and unwanted pregnancy [2]. Unintended pregnancy is associated with increased maternal as well as neonatal mortality and morbidity. Approximately 40% of pregnancies worldwide are unintended and half are terminated. To date, there are few international comparisons to the decision of unintended pregnancy, either childbirth or abortion [3]. The use of contraceptives among women of gestational age has been increasing in demand for several decades, to prevent unintended pregnancies [4]. However, studies have shown that a high percentage of those who use contraceptives are at risk of unwanted pregnancies, which may be due to inconsistent or ineffective use [5,6]. Unintended pregnancy has been associated with some socio-demographic factors including education level, age, area of residence, etc. Therefore, the identification of socio-demographic and health risk factors associated with unintended pregnancy and its relationship to contraceptive use provides a vital context for consideration of this growing health problem and can help reduce its risk [7-10] because there is very little data on the prevalence of unintended pregnancy in Iraqi Kurdistan. We assessed rates of unintended pregnancy, identified socio-demographic and reproductive factors associated with unintended pregnancies, and specific contraceptive use/type among women with unintended pregnancies among women attending antenatal care centers in Erbil governorate.

Methodology

A community- cross- sectional study was performed among pregnant women in a teaching maternity hospital (main referral hospital in Erbil) and two primary health care centers (Shadi Center and Al-Brayati Family Medicine Education Center) in Erbil City, Kurdistan Region, Iraq. The study lasted from the 1st of February 2020 to the 31st of January 2021. The sample of the study included all pregnant women aged 19-39 years,

while women under or over these ages and those living outside the governorate were excluded from the study. The data was obtained through a standardized structured interview organized by the supervisor and the researcher to obtain information about the determinants of pregnancy, which began by classifying them according to the intention for pregnancy into two groups (intended, unintended), then the socio-demographic data of all pregnant participants for both groups were recorded, including age, residence area, educational level, and income, in addition to some factors related to fertility involved gravida and parity. For unintended pregnant women, information was recorded about their use of contraceptive methods and their types. Finally, the outcomes of unintended pregnancy were estimated among the participants in this study. Descriptive statistical analysis of the data was used by the SPSS program (version 26) to process the results. Chi-square test was used to assess the relationship between unintended and intended pregnancies with associated factors among participating pregnant women. Statistical significance was considered at p -value ≤ 0.05 .

Ethical considerations

All women participating in this study were interviewed after we obtained their oral and written informed consent. The study was carried out with the approval of the Research Ethics Committee at the Ministry of Higher Education and Scientific Research/ Kurdistan Region of Iraq, with the agreement of Hawler Medical University Agreement No. (N 174) dated 18/2/2020.

Results and Discussion

Among 500 pregnant women participating in this study, 179 (39.4%) women reported that their pregnancy was unintended, while the remaining 60.6% intended to become pregnant (Figure 1). This result is consistent with that of Abbasi-Shawazi *et al.* (2004) in the Islamic Republic of Iran, where the proportion of pregnant women without intention was about 35.0% [11].

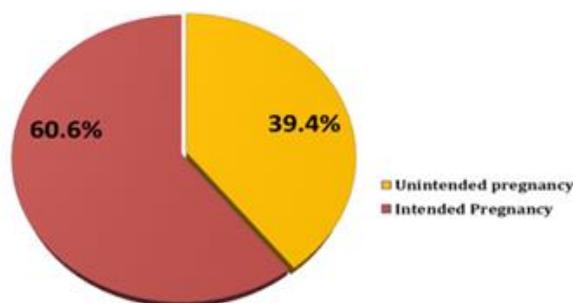


Figure 1: Pregnancy intention among 500 participating pregnant women

As shown in Table 1, the largest age group of women 92 (18.4%) more when compared with participants ≥ 35 was for unintended pregnancy intended pregnancy women 14 (2.8%).

Table 1: Characteristics and factors associated with unintended pregnancy among 500 pregnant participants

Characteristics		Unintended pregnancy N=197 (39.4%)	Intended Pregnancy N=303 (60.6%)	Total N=500 (100%)	P value
Age	≤ 25	19 (3.8)	169 (33.8)	188 (37.6)	0.031
	26-34	86 (17.2)	120 (24.0)	206 (41.2)	
	≥ 35	92 (18.4)	14 (2.8)	106 (21.2)	
Residence area	Rural	100 (20.0)	170 (34.0)	270 (54.0)	0.241
	Urban	97 (19.4)	133 (26.6)	230 (46.0)	
Educational level	uneducated	65 (13.0)	88 (17.6)	153 (30.6)	0.488
	Primary	40 (8.0)	79 (15.8)	119 (23.8)	
	Secondary	53 (10.6)	76 (15.2)	129 (25.8)	
	Post-Secondary	39 (7.8)	60 (12.0)	99 (19.8)	
Income	Sufficient	45 (9.0)	190 (38.0)	235 (47.0)	0.001
	In-Sufficient	152 (30.4)	113 (22.6)	265 (53.0)	
Gravida	Primi	57 (11.4)	196 (39.2)	253 (50.6)	0.001
	Multi	140 (28.0)	107 (21.4)	247 (49.4)	
Parity	1	52 (10.4)	193 (38.6)	245 (49.0)	0.001
	2-3	42 (8.4)	55 (11.0)	97 (19.4)	
	≥ 4	103 (20.6)	55 (11.0)	158 (31.6)	

A study by Yusof *et al.* (2018) elucidated that incidence of without planning pregnancies was most common among elderly pregnant women, which may be due to their less knowledge of contraceptive methods [12]. The results also showed that the percentage of pregnant participants without intention was 100 (20%) from rural, and 65 (10%) from uneducated. Kennedy *et al.* (2021) conducted a considerable study on the prevalence and determinants of unintended pregnancies and found that rural, poor, and less educated women were more likely to have unintended pregnancies in Ethiopia [13]. An educated woman is better in her fertile behavior than an uneducated woman. Several studies have also confirmed a statistically significant correlation between education level and the probability of non-planned pregnancies

[14]. On the other hand, 152 (30.4%) of the unintended pregnant women did not have sufficient income, indicating a significant correlation between the intention to become pregnant and the economic status of the family [15]. Our finding is consistent with what was reported in the systematic review by Ali *et al.* (2016), where they found statistically significant relationships between economic factors and planning pregnancy. Pregnant women with poor economic status were more likely to experience non-planned pregnancy [14]. Perak *et al.* (2020) conducted a study to analyze the outcome of unwanted pregnancy by World Bank income groups, regional cohorts, and legal status of abortion from 1990 to 2020. Among their findings was an inverse relationship between unwanted pregnancy and income [16]. In

addition, women with unintended pregnancy were significantly (at $p \leq 0.05$) more likely to have multi-gravida and ≥ 4 parity when compared with women with an intended pregnancy (28.0% and 20.6% vs. 21.4% and 11.0% respectively). This is consistent with findings of Metwaly *et al.* (2018), as well as Goicolea and Sebastian (2010), who reported that more than two-thirds of women with unintended pregnancies had multi gravida compared with a quarter of women with unintended pregnancies [17,18].

Of 179 who had an unintended pregnancy, 130 (73%) reported using contraceptives to prevent pregnancy, while the remaining 49 (27%) confirmed that they had not used any contraceptives (Figure 2). They were as follows: 71 (55%) were using barriers that included: condom, diaphragms, cervical caps, contraceptive sponge while 19 (15%) were exploiting oral contraceptives as the pill, 7 (5%) were using injectable contraceptives, 15 (11%) were using an Intrauterine contraceptive device (IUCD), 10 (8%) were resorting to the safe period, and 6% were those who interrupted coitus (Figure 3). This is similar to the observations of Metwaly *et al.* (2018), who concluded in their study that more than two-fifths of unintended pregnancies were due to contraceptive failure [17]. Studies of previous years have also proven a positive relationship between contraceptives and unintended pregnancy [19,20]. 210 (42%) of the women with unintended pregnancies reported abortions, while 290(58%) gave birth naturally (Figure 3).

Addressing the effect of family planning and other factors on abortion and still birth in the spectrum model, Stover and Winfrey (2017) showed that changes in the use of different types of contraceptives can have important effects on maternal and child survival. They also highlighted the importance of introducing assumptions about future changes in the use of contraceptives, and working to include new dynamics [21]. Likewise, Lrober and Muntinga (2017) evaluated topics related to contraceptive use and counseling for women with multiple unintended pregnancies from the perspective of the abortion client,

concluding that women who had had multiple abortions were more likely to express a need for counseling about methods of Contraception. They concluded that contraceptive efficacy could be improved through counseling tailored to individual needs [22].

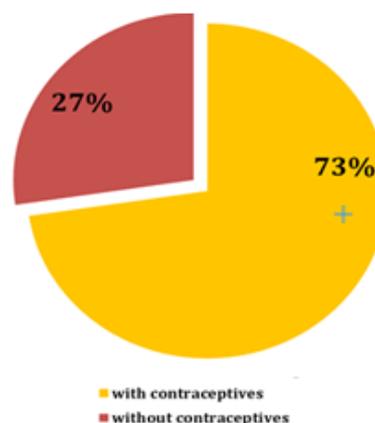


Figure 2: Contraceptive use among 179 (unintended) pregnant women

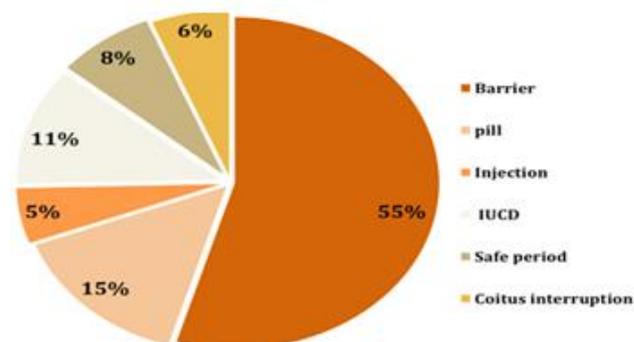


Figure 3: Role of contraceptive use in the prevalence of unintended pregnancy

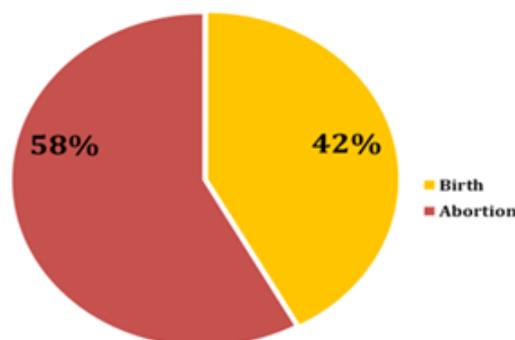


Figure 4: Outcomes of unintended pregnancy among 179 participating pregnant women

Conclusion

The current study aimed to evaluate the occurrence of unintended pregnancy, its relationship to some basic characteristics, and the use of contraceptive methods among women

who attended pregnancy and childbirth care centers in Erbil governorate. Based on the results in general, we concluded that more than a third of recent pregnancies among Erbil women were unintended. Unintended pregnancy was predicted by older uneducated women, and women with low family income. A high percentage of unintended pregnant women were using contraceptives. Although the Directorate of Health in Erbil Governorate provides free family care services through existing hospitals and health centers, the use of contraceptives is still not satisfactory. Therefore, there is a real need for many other studies to get more accurate details about the care of pregnant women and infants. In addition, there is a need to conduct awareness campaigns for women about unintended pregnancies and the optimal use of contraceptive methods.

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Authors' contributions

All authors contributed toward data analysis, drafting and revising the paper and agreed to be responsible for all the aspects of this work.

Conflict of Interest

The authors declare that they have no competing interests.

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