



PREVALENCE OF CONTRACEPTIVE FAILURE AMONG WOMEN AT THE WESTERN REGION OF SAUDI ARABIA IN 2018

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ABSTRACT

Background: A unique feature of Saudi Arabian society is the desire for huge families.

Objectives: This study aimed to identify the contraceptive methods used with a higher risk of unplanned pregnancy, and the correlations between parity status and types of contraceptive methods used and contraceptive failure in women visiting the primary health care clinic of King Abdulaziz University, Jeddah, Saudi Arabia.

Subjects and methods: This cross-sectional study was performed using a self-administrated electronic questionnaire that was distributed to women visiting a primary health care clinic in the western region of Saudi Arabia. The questionnaire was divided into 4 parts: patient characteristics, use and knowledge of contraceptive methods, relative risk of pregnancy with the use of different contraceptive methods, and the risk of pregnancy in relation to parity. Statistical analysis was performed using the SPSS v.21 software package.

Results: A total of 959 women visiting the primary health care clinic were enrolled. Most of the participants were in the age group 20-35 years (57.00%). A large proportion of women reported using contraception (n= 649, 67.70%). The most common type of contraceptive used in this study was contraceptive pills (31.70%) followed by IUD (21.20%). The overall contraceptive failure rate was high in participants used withdrawal (OR: 1.822; 95%CI: 0.564-5.884), male condom (OR: 1.561; 95%CI: 0.484-5.031), lactation (OR: 1.202; 95%CI: 0.171-8.464), and contraceptive pills (OR: 1.025; 95%CI: 0.500-2.102), while the overall contraceptive failure rate was low in participants using IUD (OR: 0.964; 95%CI: 0.440-2.113). Primigravida cases had the highest risk of contraceptive failure (8.50%) followed by nullipara (4.80%) then multipara (4.30%).

Conclusion: Usage of withdrawal, male condom, lactation, and contraceptive pills as contraceptive methods had highest risk of failure in women in the Western Region of Saudi Arabia. Hence, women using these methods of contraception should be so carefully.

KEYWORDS : Contraceptive – Failure – Pregnant – Parity

INTRODUCTION:

The desire for large families is a unique feature of Saudi Arabian [1]. However, with the rapid changes in the socio-demographic pattern of the Saudi Arabian community, primarily with regard to education and work status among women, there have been marked changes in fertility beliefs and behaviors, with a specific focus on age at pregnancy and the use of contraceptives [2].

A review of the relevant literature showed that unplanned pregnancy was common despite contraceptive use; in fact, almost 85 million pregnancies (40% of all pregnancies) worldwide were unplanned in 2012 [3]. In developing countries, approximately 74 million unplanned pregnancies

occur annually, and 30% of these result from contraceptive failure among women using traditional or modern contraceptive methods [4]. Unplanned pregnancies can have many unfavorable consequences, including undesirable childbearing, recourse to possibly unsafe abortion, and maternal and/or newborn morbidity and mortality [4-6]. Fundamentally, unplanned pregnancies result from either lack of use of contraception or contraceptive failure [7]. The effect of contraceptive failure on unplanned pregnancy and abortion may also be related to the specific contraceptive method used and the manner of its usage [7].

Nevertheless, the number of studies in Saudi Arabia on the prevalence and probability of contraceptive failure according

to specific contraceptive methods and the resulting number of unplanned pregnancies is insufficient. The aim of this cross section study was to identify the contraceptive methods with a higher risk of unplanned pregnancy, and to correlate between parity status and types of contraceptive methods used and contraceptive usage failure in women visiting the primary health care clinic of King Abdulaziz University, Jeddah, Saudi Arabia.

Patients and Methods

This cross section study was approved by the institutional review board (IRB) of King Abdulaziz University Hospital and Faculty of Medicine, Jeddah, Saudi Arabia. This study was conducted at 12 primary healthcare centers in the Western Region of Saudi Arabia (Makkah, Jeddah, and AlTaif), and enrolled women older than 18 years between January and December 2018. Those who declined to participate, and those who were unable to answer questions due to their lack of understanding of Arabic or lack of education were excluded. A total of 959 participants were finally included in the study.

Participants were chosen after they completed their clinic visits or while they were waiting for their appointment. Study members randomly approached potential participants within the clinic and requested them to participate in the survey. An informed consent was obtained from each participant. Participants were administered an electronic questionnaire, and the following data were obtained: demographic data, number of children, use of male or female contraceptive methods, the duration of contraceptive use, and the reason for contraceptive use. The questionnaire assessed whether any of the following 15 contraceptive methods were employed: contraceptive pills, intra-uterine contraceptive devices (IUCDs), withdrawal method, male or female condoms, calendar method, patch, lactation, injections, cervical rings, cervical mucus methods, body temperature method, diaphragm, spermicidal cream, implants, and tubal ligation. Whether the participants experienced pregnancy despite the use of these contraceptive methods was also assessed.

Statistical analysis: All the values were expressed as number (%) or mean \pm standard deviation (minimum–maximum) as appropriate. Data were analyzed using Statistical Package for Social Sciences (SPSS Inc., version 22, Chicago, IL, USA), using the Chi-Square test for comparison between non-parametric data. Cross-tabulation was performed to estimate the risk and 95% confidence interval (95%CI). A P value \leq 0.05 was considered to indicate statistical significance.

RESULTS:

In total, 959 women participated in the study. Most of the participants (57%) were aged 20–35 years, followed by those > 35–50 years (31.50%), those > 50 years (6.50%), and finally those < 20 years (5%). Most of the participants were graduates (60.90%), followed by those that had completed primary education (29.50%), postgraduate education (9.50%), and diploma (0.30%). Moreover, 82.20% of the participants were married and sexually active (82.20%), whereas 9.00% were divorced or widowed and 8.90% was not married. The duration of marriage was \leq 1 year in 9.20%, 2–10 years in 41.60%, and > 10 years in 40.40% of participants. With regard to parity, most participants were multipara (64.10%), followed by primigravida (16.40%) and nullipara (10.60%) (Table 1).

The number of women using contraceptive methods was greater than the number of women who did not use contraceptive methods (67.70% vs. 32.30%). The duration of contraceptive use was \geq 1–5 years in 32.40%, < 1 year in 22.20%, and > 5 years in 13% of participants. The reason for contraceptive use was to avoid pregnancy in most cases (55.10%), followed by medical issues (2.80%). Contraceptive pill was the most common type of contraceptive used (31.70%),

followed by IUD (21.20%), withdrawal method (16.40%), male condom (13.80%), female condom (0.60%), calendar method (5.90%), patch (5.30%), lactation (3.90%), injection (2%), cervical ring (1.40%), cervical mucus method (0.70%), body temperature method (0.40%), diaphragm (0.40%), spermicidal cream (0.30%), implant (0.10%), or fallopian tube ligation (0.10%) (Table 2).

Table 3 showed the risk of pregnancy among the women using the different methods of contraception. In particular, 4.7% of women using contraceptive pills became pregnant with high risk (odds ratio [OR]: 1.025 and 95% CI: 0.5–2.102), whereas 4.9% of women using IUD became pregnant with low risk (OR: 0.964, 95% CI: 0.44–2.113). The use of the withdrawal method led to pregnancy in 2.8% of women (OR: 1.822, 95% CI: 0.564–5.884), whereas use of male condoms led to pregnancy in 3.2% of women (OR: 1.561, 95% CI: 0.484–5.031). The calendar method was used by 37 women, and 2 of these (5.4%) women became pregnant (OR: 0.877, 95% CI: 0.217–3.533). A total of 38 women used patches as contraceptive methods, and 2 of these (5.3%) became pregnant (OR: 0.902, 95% CI: 0.224–3.638). One woman (4%) using lactation as a contraceptive method became pregnant (OR: 1.202, 95% CI: 0.171–8.464). Injections were used as a method of contraception by 16 women, and 2 of these (12.50%) women became pregnant (OR: 0.367, 95% CI: 0.096–1.406). Moreover, only 9 women used a cervical ring, and 1 of them (11.1%) became pregnant (OR: 0.422, 95% CI: 0.064–2.766). None of the women using the cervical mucus method, female condoms, body temperature, diaphragm, or spermicidal cream reported becoming pregnant.

Table 4 showed the cross tabulation analysis between parity and pregnancy following the use of contraceptive methods. The proportion of women who did not become pregnant was significantly greater than the proportion of women with pregnancy in all the groups ($P=0.001$ for all). Data indicated that 9 primigravida women of 106 (8.5%) became pregnant despite the use of contraceptive methods (OR: 0.477, 95% CI: 0.226–1.007). Among 63 nullipara women, 3 (4.8%) became pregnant (OR: 1.003, 95% CI: 0.314–3.207), whereas among 445 multipara women, 19 (4.3%) became pregnant despite the use of contraceptive methods (OR: 1.378, 95% CI: 0.682–2.784). In this study, only 5 cases used cervical mucus method; 5 cases used female condom, 1 case used body temperature and 3 cases used diaphragm and 2 cases used spermicidal cream and none of these cases get pregnant.

DISCUSSION

The aim of the present study was to identify the failure rate of different contraceptive methods over 1 year among 649 women. The results obtained by this study revealed that primigravida cases had the highest risk of contraceptive failure (8.50%) followed by nullipara (4.80%) then multipara (4.30%). These results were in partial consistent with another study that indicated that contraceptive failure is strongly associated with younger age and higher parities [8,9]. Moreover, a total of 528 (55.10%) patients participated in this study reported that they used contraceptive methods to avoid pregnancy, whereas 27 (2.80%) participants offered medical issues as a reason for contraceptive use.

The most common type of contraceptive used in this study was contraceptive pills (31.70%) followed by IUD (21.20%), withdrawal method (16.40%) and male condom (13.80%). The results obtained showed that the overall contraceptive failure rate was high in participants used withdrawal (2.80%; OR: 1.822; 95%CI: 0.564–5.884), male condom (3.20%, OR: 1.561; 95%CI: 0.484–5.031), lactation (4.00%, OR: 1.202; 95%CI: 0.171–8.464), and contraceptive pills (4.70%, OR: 1.025; 95%CI: 0.500–2.102). While, the overall contraceptive failure rate was low in participants using IUD (4.90%, OR: 0.964;

95%CI: 0.440-2.113), patch (5.30%, OR: 0.902; 95%CI: 0.224-3.638), calendar method (5.40%, OR: 0.877; 95%CI: 0.217-3.533), cervical ring (11.10%, OR: 0.422; 95%CI: 0.064-2.766) and injection (12.80%, OR: 0.367; 95%CI: 0.096-1.406). The fear of becoming pregnant by using contraceptive methods in the Western Region of Saudi Arabia led to careful use of IUDs to avoid their side effects as repeated infections, slipping of the IUDs, bleeding from different types and use the suitable IUDs shape for women uterus that result in low level of failure of their usage in this study. Comparing the reported 12-month failure rates obtained in this study with those of Polis et al. that reported large-scale analysis of contraceptive failure in 43 countries revealed that, failure rate was higher than ours by usage of oral contraceptive pills (5.50% versus 4.70%), male condoms (5.40% versus 3.20%) and withdrawal (13.40% versus 2.80%) [10]. These difference in the failure rate may be due to difference in the knowledge regarding ideal methods for using contraceptive methods and also difference in the number of women participate in the study.

Poor success rates of the available methods of contraception will result in unplanned pregnancies, which might consequently lead to voluntary termination, orphaned children, and decreased education completion rates (as a result of the mother dropping out of school to take care of the child). In fact, a report by the Institute of Medicine illustrates that the birth of an unwanted second child is associated dropping out of high school, dependence of welfare, and income below the poverty level [11]. Another study found that with the lack of contraceptive failure, the prevalence of unplanned births could be decreased by almost 50%. The data of this study revealed that 33 women out of 649 (5%) get pregnant while using contraceptive methods. In countries with available abortion data between one-third and two-thirds of prompted abortions could be prevented if contraceptive failure was avoided [7].

In conclusion, the most common type of contraceptive used in this study was contraceptive pills followed by IUD, withdrawal method and male condom. The overall contraceptive failure rate was high in participants used withdrawal, male condom, lactation, and contraceptive pills; while, contraceptive failure rate was low in participants using IUD, patch, calendar method, cervical ring and injection. Primigravida cases had the highest risk of contraceptive failure. The use of more effective methods of contraception will help families avoid unplanned pregnancies and its complications.

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Table 1. Demographic characteristics of participants (n=959).

Parameters	Value
Age groups	
<20 years	48 (5.00%)
20-35 years	547 (57.00%)
>35-50 years	302 (31.50%)
>50 years	62 (6.50%)
Education levels	
Primary education	283 (29.50%)
Diploma	3 (0.30%)
Graduate	584 (60.90%)
Post graduate	89 (9.30%)
Marital status	
Not married	85 (8.90%)
Yes and sexually active	788 (82.20%)
Divorced or Widowed	86 (9.00%)
Marriage duration	
≤ 1 year	88 (9.20%)
2-10 years	399 (41.60%)
> 10 years	387 (40.40%)
Number of children	
Nullipara	102 (10.60%)
Primigravida	157 (16.40%)
Multipara	615 (64.10%)

Data are expressed as number (%).

Table 2. Data on the use of contraceptive methods by all the participants (n=959).

Parameters	Value
Usage of contraceptives	
No	310 (32.30%)
Yes	649 (67.70%)
Duration of using contraceptives	
< 1 year	213 (22.20%)
≥ 1-5 years	311 (32.40%)
> 5 years	125 (13.00%)
Reason for usage of contraceptives	
To avoid pregnancy	528 (55.10%)
Medical issue	27 (2.80%)
Have not used contraceptives	310 (32.30%)
Type of contraception used	
Contraceptive pills	304 (31.70%)
IUD* method	203 (21.20%)
Withdrawal method	157 (16.40%)
Male condom	132 (13.80%)
Calendar method	57 (5.90%)
Patch	51 (5.30%)
Lactation	37 (3.90%)
Injection	19 (2.00%)
Cervical ring	13 (1.40%)
Cervical mucus method	7 (0.70%)
Female condom	6 (0.60%)
Body temperature method	4 (0.40%)
Diaphragm	4 (0.40%)
Spermicidal cream	3 (0.30%)
Implant	1 (0.10%)
Others (fallopian tube ligation)	1 (0.10%)

*IUD: intrauterine device

Data are expressed as number (%) or mean±standard deviation (minimum-maximum), as appropriate.

Table 3. Relative risk of pregnancy despite the use of different methods of contraception (n=649).

Contraceptive methods	Total	Pregnancy		Chi-square test	Odd's ratio (95% CI)
		No	Yes		
Contraceptive pills	234 (100.00%)	223 (95.30%)	11 (4.70%)	0.001	1.025 (0.500-2.102)
IUD method	163 (100.00%)	155 (95.10%)	8 (4.90%)	0.001	0.964 (0.440-2.113)
Withdrawal	106 (100.00%)	103 (97.30%)	3 (2.80%)	0.001	1.822 (0.564-5.884)
Male condom	93 (100.00%)	90 (96.80%)	3 (3.20%)	0.001	1.561 (0.484-5.031)
Calendar method	37 (100.00%)	35 (94.60%)	2 (5.40%)	0.001	0.877 (0.217-3.533)
Patch	38 (100.00%)	36 (94.70%)	2 (5.30%)	0.001	0.902 (0.224-3.638)
Lactation	25 (100.00%)	24 (96.00%)	1 (4.00%)	0.001	1.202 (0.171-8.464)
Injection	16 (100.00%)	14 (87.50%)	2 (12.50%)	0.001	0.367 (0.096-1.406)
Cervical ring	9 (100.00%)	8 (88.90%)	1 (11.10%)	0.001	0.422 (0.064-2.766)
Cervical mucus method	5 (100.00%)	5 (100.00%)	-	-	-
Female condom	5 (100.00%)	5 (100.00%)	-	-	-
Body temperature method	1 (100.00%)	4 (100.00%)	-	-	-
Diaphragm	3 (100.00%)	3 (100.00%)	-	-	-
Spermicidal cream	2 (100.00%)	2 (100.00%)	-	-	-

Cross tabulation analysis was used to estimate the relative risk and 95% CI.

Table 4. Risk of pregnancy despite the use of different methods of contraception (n=649).

Parity	Total	Pregnancy		Odd's ratio (95% CI)	Significance
		No	Yes		
Nullipara	63 (100.00%)	60 (95.20%)	3 (4.80%)	1.003 (0.314-3.207)	0.001
Primigravida	106 (100.00%)	97 (91.50%)	9 (8.50%)	0.477 (0.226-1.007)	0.001
Multipara	445 (100.00%)	426 (95.70%)	19 (4.30%)	1.378 (0.682-2.784)	0.001

Cross tabulation analysis was used to estimate the relative risk and 95% CI.

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