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FACTORS ASSOCIATED WITH DISCONTINUATION OF JADELLE AMONG WOMEN IN BALOCHISTAN, PAKISTAN: A CROSS-SECTIONAL STUDY

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Abstract

Background: *Jadelle is a very effective contraceptive implant providing contraceptive protection for 5 years. Even though it works well, many women stop taking it prematurely before the required duration, compromising effectiveness of the contraceptive and enhancing the chances of an unwanted pregnancy. To address this, it is important to consider the various factors linked to discontinuation when developing family planning services and promoting longer, continued use of contraceptive.*

Objective: *To identify the factors contributing to discontinuation of Jadelle among women of reproductive age in Balochistan, Pakistan.*

Methods: *This was the descriptive cross-sectional study which was carried out at Sandeman Provincial Hospital in the Department of Obstetrics and Gynecology for six months. Before the recommended five year period for Jadelle removal, 384 women aged 18 to 49 years were presented for Jadelle removal. Socio-demographic data and information about Jadelle, counselling experience, length of use, side effects and quitting Jadelle was obtained through a structured questionnaire. Data analysis was done with SPSS version 26.0 and presented in frequency and percentage.*

Results: *Of the 384 participants 50 (13.0%) were between the ages of 35-49 and 76 (76.3%) were housewives. 218 (56.8%) of the women removed Jadelle for over 2.5 years. 208 (54.2%) of participants reported moderate level of knowledge about Jadelle and 212 (55.2%) reported prior experience in regards to the efficacy of Jadelle before insertion. The most frequent side effect were, 210 (54.7%) has menstrual irregularity, followed by headache 158 (41.1%), weight gain 151 (39.3%), and vaginal discharge 130 (33.9%). The highest incidence of Jadelle removal was due to menstrual irregularity or bleeding problems 97 (25.3%), followed by the desire to conceive 66 (17.2%), headache, or dizziness 50 (13.0%) and weight gain 39 (10.2%).*

Conclusion: *The key factors that affected women's discontinuation of Jadelle in Balochistan were side effects of the use of contraceptive, inadequate counseling, and change of reproductive intention. Greater emphasis on pre-insertion counseling, better follow-up, managing side effects promptly could increase continuation rates and improve the success of family planning programs.*

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INTRODUCTION

Family planning forms part of any reproductive health system, and is an important contributor to lowering the rates of unintended pregnancies, unsafe abortions, maternal morbidity and maternal mortality.[1] Availability of effective contraception allows women and couples to exercise their choice on when and how often to use contraception to provide better maternal and child health. Long acting, reversible contraceptives (LARCs) are considered highly effective methods since they last for an extended period and have few responsibilities.Jadelle is a flexible, soft implant which is inserted under the skin of the upper arm that releases a progestogen called **levonorgestrel**.[2] It offers contraceptive protection for the duration of five years, by the suppressing the ovulation, thickening of cervical mucus and altering of the endometrial environment. Reversibility, efficacy, convenience and durability are the factors that make Jadelle an important option in international family planning programs. Jadelle has high contraceptive effectiveness and avoids frequent visits to a clinic or a need for daily use, when compared with short-acting contraceptive methods.[3]

Although Jadelle offers these benefits, it's withdrawal before the suggested time frame can be quite challenging. Early removal will yield less public health and personal gains of a long-acting contraception and will also heighten the risk of unwanted pregnancy if an alternative contraception isn't used. Some factors that have been previously studied include headaches, dizziness, weight gain, menstrual irregularities, amenorrhea, implant disruption, lack of counseling received, misconceptions about contraceptive safety, and reproductive intent.[4] Of these, irregular bleeding is the most frequent contraceptive implant site problem leading to implant removal, which is earlier than expected. Also, one of the most frequently reported complications of using a contraceptive implant is abnormal bleeding.[5,6]

The pre-insertion level of counseling is also a key determinant of contraceptive use and persistence. Woman receiving proper information about side effects, expected duration, follow-up care and fertility loss following removal is more likely to continue using the method.[7,8] On the other hand, inadequate counselling can lead to unrealistic expectations and concern about side-effects. There can also be social and cultural influences such as partners' opposition, family pressure, community misconceptions or other factors that could be influencing discontinuation decisions, especially in conservative areas.[9,10]

Multi-fold challenges remain in the reproductive healthcare system of Pakistan, such as unmet family planning needs and low use of LARC. However, these barriers are especially strong in Balochistan where low literacy rates among women, lack of health care facilities, geographic isolation, and sociocultural barriers may affect contraceptive use and adherence. While Jadelle is becoming more widely integrated into family planning services, limited local data exists to inform us of the factors that might lead women in the province to cease the use of Jadelle. Thus, this study was conducted to assess the factors responsible for removal of Jadelle in women of reproductive age who presented at tertiary care hospital, Quetta, Balochistan for Jadelle removal. Across the health sector, insight into these factors can help to optimize counseling, increases family planning (FP) care and increase rates of continuation for Jadelle users.

METHODOLOGY

Study Design and Setting

The descriptive cross-sectional study was carried out in Sandeman Provincial Hospital, Quetta, Balochistan, Pakistan in the Department of Obstetrics and Gynecology, Unit-I of the hospital. Sandeman Provincial Hospital (SPH) is a tertiary healthcare referral hospital that provides full reproductive health and family planning services for women in both rural and urban areas in the province. The study was carried out over a six-month period following approval from the Institutional Ethical Review Committee of the Postgraduate Medical Institute (PGMI), Quetta.

Study Population

This study involved women of childbearing age (18–49 years) who came for Jadelle removal before the expiration of the recommended five years of use. Among the women who started Jadelle use, women who had used it for the entire 5-year period, women who switched to other contraceptive methods without any

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complaints and women who refused to participate in the study, were excluded from the study.

Sample Size and Sampling Technique

A sample size was determined based on the single population proportion formula: $n = Z^2P(1-P)/d^2$. Based upon 95% confidence, 50% prevalence and 5% margin of error, the required sample size was 384 participants. A consecutive sampling method was used with the recruitment of women that had been seen within the study period till the required sample size is achieved.

Data Collection

The data were gathered using a structured and pre-tested developed questionnaire which was administered through face-to-face interviews carried out by the principal investigator. Data collected included socio-demographic data, prior reproductive control, duration of Jadelle use, knowledge about Jadelle, counseling experiences prior to insertion, adverse effects of using Jadelle, as well as reasons for ending implant usage.

Awareness about Jadelle effectiveness, duration of protection, and expected side effects were considered as knowledge-related variables. Data related to counseling included information received about effectiveness, the potential side effects, and the recommendations for follow-up visits. Clinical parameters consisted of abnormalities in menstruation, amenorrhea, headache, dizziness, weight gain, vaginal discharge, and implant site pain.

Outcome Measures

Overall, the main outcome variable was the discontinuation of Jadelle prior to completing the five-year period. The cases that were discontinued were classified under the following categories: menstrual changes, wish to become pregnant, side effects of the contraceptive method, partner influence, misconceptions about method, and other personal reasons.

Statistical Analysis

The data were entered and analyzed using Statistical Package for Social Sciences SPSS version 26.0. The study variables were summarized using descriptive statistics. Categorical data were described as frequencies and percentages. Means and standard deviations were used for continuous variables, as appropriate.

Ethical Considerations

Ethical approval was obtained from the Institutional Ethical Review Committee of Postgraduate Medical Institute, Quetta, prior to starting the study. All participants gave written informed consent before participating. There was no compulsory participation and confidentiality and anonymity of participants' data were respected. Participants were informed that they could discontinue participation at any time without any impact on their medical care.

RESULTS

Socio-demographic Characteristics

All 384 women who appeared for removal of Jadelle before completion of the prescribed 5 years duration were included in the study. Most of the participants were aged 35-49 years old 193 (50.3%), with 109 (28.4%) were aged 25-34 years. 132 (34.4%) of all participants reported no formal education, while only 37 (9.6%) reported higher education. Women were the majority of the Baloch ethnic group 165 (43.0%). Housewives constituted the majority of the group 293 (76.3%) and laborers made up the largest group among husbands 144 (37.5%).

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Table 1.
Socio-demographic Characteristics of Study Participants (n = 384)

Variable	Category	n	%
Age Group	18–24 years	82	21.4
	25–34 years	109	28.4
	35–49 years	193	50.3
Education	No formal education	132	34.4
	Primary	112	29.2
	Secondary	103	26.8
	Higher	37	9.6
Ethnicity	Baloch	165	43.0
	Pashtun	105	27.3
	Punjabi	64	16.7
	Other	50	13.0
Occupation	Housewife	293	76.3
	Employed	83	21.6
	Student	8	2.1
Husband's Occupation	Laborer	144	37.5
	Government employee	99	25.8
	Private job/Business	85	22.1
	Unemployed	56	14.6

Knowledge, Counseling Characteristics and Duration of Jadelle Use

The majority of the participants were using it more than 2.5 years prior to its removal 218 (56.8%). 208 (54.2%) of women reported moderate knowledge regarding Jadelle. 212 (55.2%) of participants had received information about the effectiveness of Jadelle prior to insertion, and 207 (53.9%) had received counseling about potential side effects. 218 (56.8%) of women received follow-up advice. Before Jadelle insertion, the majority of the subjects 208 (54.2%) had never used any contraceptive before.

Table 2.
Knowledge, Counseling Characteristics and Duration of Jadelle Use (n = 384)

Variable	Category	n	%
Duration of Jadelle Use	≤2.5 years	166	43.2
	>2.5 years	218	56.8
Knowledge Regarding Jadelle	Poor knowledge	176	45.8
	Moderate knowledge	208	54.2
Received Information About Effectiveness	Yes	212	55.2
	No	172	44.8
Received Counseling on Side Effects	Yes	207	53.9
	No	177	46.1
Advised Follow-up Visit	Yes	218	56.8
	No	166	43.2
Previous Contraceptive Use	Yes	176	45.8
	No	208	54.2

Clinical Characteristics, Side Effects and Reasons for Jadelle Removal

The most common side effects reported were irregular periods, reported by 210 (54.7%), headache 158 (41.1%) and weight gain 151 (39.3%) of participants. Vaginal discharge was reported by 130 (33.9%), amenorrhea by 93 (24.2%), pain at the implant site by 89 (23.2%), dizziness by 84 (21.9%) of women. Menstrual irregularity / bleeding disorders were reported

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by 97 (25.3%) and desire for pregnancy 66 (17.2%) constituted the second largest reasons for Jadelle removal, followed by headache / dizziness 50 (13.0%) and weight gain 39 (10.2%). Less common factors contributing to discontinuation were partner/family opposition, concern for adverse long-term effects, and rumors originating from the community.

Table 3.
Clinical Characteristics, Side Effects and Reasons for Jadelle Removal (n = 384)

Variable	Category	n	%
Reasons for Removal	Menstrual irregularity/bleeding problems	97	25.3
	Desire for pregnancy	66	17.2
	Headache/Dizziness	50	13.0
	Weight gain	39	10.2
	Multiple side effects	28	7.3
	Vaginal discharge/Infection fear	21	5.5
	Advice from others/Rumors	19	4.9
	Husband/Family opposition	18	4.7
	Pain at implant site	17	4.4
	No further need for contraception	12	3.1
	Other reasons	10	2.6
	Fear of long-term effects	7	1.8
Side Effects Experienced	Menstrual irregularity	210	54.7
	Headache	158	41.1
	Weight gain	151	39.3
	Vaginal discharge	130	33.9
	Amenorrhea	93	24.2
	Pain at implant site	89	23.2
	Dizziness	84	21.9

Percentages for side effects exceed 100% because participants could report more than one side effect.

DISCUSSION

This study was conducted to investigate the factors related to discontinuation of Jadelle use among women who showed up for removal of the implant at a tertiary care hospital in Balochistan, Pakistan. The results show that contraceptive-related side effects, counseling experiences, contraceptive knowledge, and plans for reproduction are the main factors that influenced discontinuation. Menstrual disturbances were the most common side effect and were the most common indication for removal of the implant.

Over half of the participants had reported using Jadelle for over two and a half years before they discontinued. It seems that many women did well with the contraceptive effect from Jadelle for a long time, but a lot of women opted for removing Jadelle before the recommended period of five years. In Ethiopia, Nigeria, and other developing countries similar trends have been noted with retention rates decreasing over time due to side effects, lack of satisfaction, or varying conceptions of fertility desires.[11,12] Early discontinuation is still a huge problem although LARC effectiveness is well-documented, based on the observation time in the present study.

Learning about Jadelle and counseling experiences had an impact on continuation. Just over half of the sample expressed moderate knowledge about the contraceptive implant and a significant number lacked information on the implant.[13] Likewise, almost half of the participants reported that they were not counseled effectively enough, particularly about expected side effects and adherence to follow-up. Such results confirm the previous studies reporting that women receiving full counseling prior to insertion to be more likely to persist with the implant and have high satisfaction rates. Good counselling will give realistic

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expectations about menstrual changes and other side effects and help minimize anxiety and unnecessary discontinuation.[14]

The most frequent side effect reported is menstural irregularity which was reported by over half of the participants. In addition, menstrual problems were the most common indication for removal of the implants. This is in line with the international literature, as this abnormal uterine bleeding has proven to be a main reason for contraceptive implant discontinuation in many studies.[15] Women can get concerned about their irregular bleeding patterns, especially if the bleeding happens on an unexpected day or is not fully explained prior to insertion. Not continuing because of menstrual abnormality can also carry with it concerns about illness or concerns of reproductive health or fertility in many cultural contexts, further heightening cessation risk.[16]

Other side effects reported were headache, weight gain, vaginal discharge, amenorrhea, pain at the implant site and dizziness. Same adverse outcomes are observed with other forms of hormonal contraception and have been seen in studies looking at levonorgestrel-releasing implants. These symptoms are not usually medically important, but may lead to reduced satisfaction with life and quality of life.[17] The results highlight the necessity to counsel women as they get ready for insertion and in reminder visits so they understand how their bodies are likely to react to the procedure as well as what management might entail.

The second most common reason for removal of the implant was the desire for pregnancy. This distinction is important because it points to an important difference between discontinuations due to being dissatisfied and discontinuations due to planned fertility intentions. Because Jadelle is intended to be a reversible contraceptive method, removal for purpose of conception should not be interpreted as a failure of the method. Jadelle is designed to be a reversible contraceptive method and this reversal for the purpose of conception would be certain statement of a successful reproductive plan, not a failure of the contraceptive method. Previous studies report similar findings, with some of the primary drivers of discontinuation of LARCs being issues with sexual function or reproductive intention.[13,18]

In the present study, less time seemed to be spent on the removal of implants because of factors other than socio-cultural. A few women mentioned that their husbands and families were against the discontinuation, that they had heard rumors about it in the community or that the long-term effects were feared as reasons for discontinuting. However, these are important conclusions and findings to not be overlooked. Earlier research carried out in conservative societies has shown that values and beliefs about contraception, family socio-cultural influence or lack of knowledge about contraception could have a profound impact on access to contraception in the community and its continuation. Thus there is a potential intervention opportunity to engage partners or family members in counselling if this is appropriate, in order to improve uptake and adherence to contraceptive methods.[19]

The study results are significant with regard to reproductive health services in Balochistan. Better pre-insertion counselling and patient education, the introduction of regular follow-up systems, and early management of side effects can significantly limit the number of patients who are unnecessarily dropped out of treatment.[20] Women should be informed about the usual menstrual changes and reassured about the safety and reversibility of Jadelle, particularly by the healthcare provider. The success of improved counselling strategies would help women make informed decisions and make them more satisfied with use of long-acting contraceptives.

There are a number of strengths to the study. It presented a sample size that was relatively large and looked at a population where there is little existing local evidence. The study offers valuable insights into contraceptive attrition rates among women in Balochistan Province and is a part of the current literature on LARC in the context of Pakistan. There are some limitations to note, however. The study was done in a single tertiary care hospital that might have restricted the applicability of results to other parts of the province. Moreover, the cross- sectional study design limits the ability to draw causal inferences from the factors identified about the problem of Jadelle discontinuation. Recall bias can also occur with information collected from participants interviewed.

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Aside from the fact, results demonstrate that side effects, especially menstrual irregularities, are the main reason for discontinuation of Jadelle along with inadequate counseling and alteration in the reproductive intent. Optimizing continuation rates and maximizing the impact of long-acting reversible contraceptives for women of reproductive age by addressing these factors will rely on service improvements for family planning.

CONCLUSION

To summarize, the cessation of Jadelle among women was the main factor related to contraceptive side effects, lack of counseling, and new reproductive plans. Menstrual disorder was the most common side effect and the most common reason for removal of the implants, followed by headache, weight gain, dizziness, and future pregnancies. While Jadelle is still a very effective LARC, there is a lack of awareness about potential side effects, and hence limited counselling may lead to premature discontinuation of Jadelle. To increase the uptake of FP services and optimize the continuation rate, improve service user satisfaction, and maximize the benefits of FP services among women of reproductive age in Balochistan pre-and post-counseling for services before counselling would be better, service follow-ups would be more effective, there would be better management of client side effects.

LIMITATIONS AND RECOMMENDATIONS

There are a number of limitations in this study. The results of this single center cross-sectional study done at a tertiary care hospital in Quetta may not be applicable to the entire population of women in Balochistan, including women who reside in the remote rural areas outside Quetta with lesser access to health care facilities. The study examined only women who will come in for Jadelle removal, which might lead to selection bias in the study because women who continue wearing the implant without complications would not be considered. Additionally, self-reported data on counseling experience, side effects, and discontinuation rate were subject to recall bias. Also, because of the cross-sectional study design, causal relationships cannot be established between the factors identified and discontinuation of Jadelle.

The results of this study support providing complete counseling prior to insertion of Jadelle with a special focus on possible changes in menstruation, side effects, length of efficacy and follow-up needs. Healthcare providers need to have mechanisms in place to track side effects regularly and manage them in a timely manner to minimize unnecessary discontinuation. Training programs should be provided in the community to promote awareness about potential hazards of LARC and myths about it. Further, larger scale multi-centre studies, that involve both urban and rural participants are suggested to collect more representative evidence on factors that impact the discontinuation of Jadelle in the country of Pakistan.

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