Hormonal Contraceptives Use and Their Adverse Effects: A Cross-sectional Study among the Women Visiting Tertiary Care Center

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ABSTRACT

Background

Hormonal contraceptives are one of the most commonly used means of contraception. Lack of contraception may lead to large family size, increased preexisting illness on pregnancy, social and economic instability, risk of unsafe abortion and so on. This may also lead to unintended pregnancies which may alter the outcomes of pregnancies as well. However, improper uses are associated with several serious adverse effects. Therefore, to achieve the optimum benefit with the least adverse effects, safe and effective use of these agents with monitoring of their pattern of use and patient compliance is very essential.

Objective

To investigate the usage of hormonal contraceptives and the adverse effects associated with them.

Method

A cross-sectional study was conducted in a family planning center of a tertiary care hospital. All women of reproductive age using hormonal contraceptives for at least 1 month were included in this study. Informed consent was taken from the patients and interviewed using a structured questionnaire. Statistical analysis was performed by using SPSS 20.

Result

Among the 105 participants under this study, the mean (±SD) age was 29.08 (± 6.12) years. A majority (42, 40.0%) of them were using injectables. The average duration of use of hormonal contraceptives was 25.1 months ± 31.8 while a majority (60, 57.1%) were using contraceptives from < 3 months. Less chance of missed dose was the major reason (26.8%) for choosing injectable. Adverse effects were reported by 75.2% of the patients. The most common adverse effect was menstrual abnormalities (21.7%).

Conclusion

Among various hormonal contraceptives, injectables were more commonly used. The majority of the participants responded to use injectables because of the least chance of missing the dose. The most common adverse effect reported was menstrual abnormalities.

KEY WORDS

Adverse effect, Family planning, Hormonal contraceptives, Implants, Injectables

INTRODUCTION

Globally, family planning is promoted as a tool to meet the needs of men and women for reproductive health, as well as minimize the critical problem of rapid population growth.[1] Hormonal contraception, one of the methods of family planning, plays important role in reducing unintended pregnancies.[2,3] The reduction of unintended pregnancies proportionally decreases the rate of unsafe abortions.[2] This is important for delaying and spacing of pregnancies in young women with increased health risks and importantly prevents maternal mortality from childbearing in older women.[2,3] So, proper counseling on the use of contraceptives is required to ensure sound maternal and neonatal health.[4,5]

It is reported that 76 million women have unintended pregnancies due to inconsistent use of family planning methods and 19 million of them choose unsafe abortions.[6,7] Most of the hormonal contraceptive methods have an effectiveness greater than 90%.[2] Despite the safety profile and effectiveness of hormonal contraceptives, adverse effects like menstrual cycle disturbance and increased body weight are given as the main reason to discontinue its use.[8] Anxiety, mood disturbances and depressive symptoms are some of the common effects.[9]

However, high compliance is one of the predisposing factors for medication which can lead to poor management of hormonal contraception. The determinant of compliance with a medication includes adverse effects related to compliance. To date, the data on hormonal contraceptive usage pattern and adverse effects with hormonal contraceptives are sparse in Nepal. Hence, this study attempted to explore the hormonal contraceptive usage pattern and adverse effects associated with them.

METHODS

A cross-sectional study was conducted in Dhulikhel Hospital, Kathmandu University Hospital, Dhulikhel from July 2019 to January 2020. Ethical approval was taken from the Institutional Review Committee, Kathmandu University School of Medical Sciences (IRC/ KUSMS). Women of reproductive age who came to the family planning center satisfying inclusion criteria were included in the study. The inclusion criteria were; a) women who were willing to give informed consent, attending family planning center, b) women using hormonal contraceptives for at least one month at the time of data collection and c) women who had discontinued hormonal contraceptives at some point of time and again used them.

Patients who met the inclusion criteria were informed about the study purpose and their contribution to this study. After taking informed consent from the patients, they were directly interviewed using a structured questionnaire. The information regarding age, education, ethnicity, occupation, etc. were recorded. Further information related to the pattern of use of hormonal contraceptives like name of the contraceptives, duration of use, previously used hormonal contraceptives (if any), reasons for discontinuation of the previous ones, adverse effects, etc. were recorded and filled in the structured questionnaire.

The obtained information was entered into and analyzed by using Statistical Package for Social Sciences (SPSS) Version 20.

RESULTS

A total of 105 female participants using hormonal contraceptives were enrolled in the study with a mean (± SD) age of 29.08 years ± 6.12, of which the majority (33, 31.4%) belong to the age group 26-30 years. Among the participants enrolled, 95,90.5% of women had children and among them, 32,33.7% were lactating mothers. The majority of the mothers, 41, 43.2% had only one child, 39, 41.1% had 2 children and 15, 15.8% had more than 2 children.

The hormonal contraceptives used by participants at the time of data collection were Injectables (Depot Medroxyprogesterone acetate: Depoprovera), Implants (Levonorgetrel: Norplant), Intrauterine Contraceptive Devices (IUCDs: Copper-T) and Oral Contraceptive Pills (OCPs: Combined pills). Out of which 42, 40.0% used injectables, 40, 38.1% used implants, 20, 19.0% used OCPs and 3, 2.9% used IUCDs as shown in figure 1.

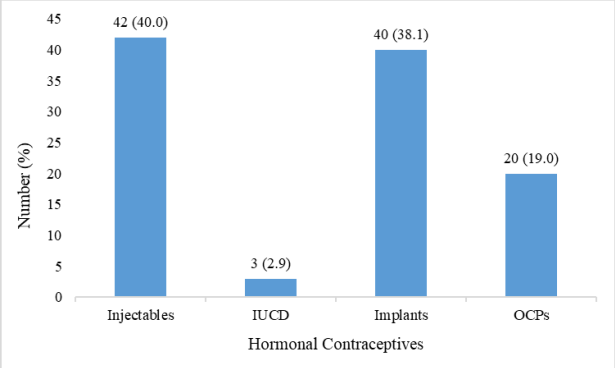

Figure 1. Different hormonal contraceptives used among 105 participants. IUCD: Intra-uterine Contraceptive Device. OCPs: Oral Contraceptive Pills

Less chance of missed dose was the major reason for choosing injectables (19, 26.8%), implants (25, 35.7%) and IUCDs (3, 50.0%) whereas 14, 43.8% used OCPs because of easy availability as shown in table 1.

Among various age groups, injectables were commonly used contraceptives whereas women of age group 36-40 years and > 40 years had used implants (2, 40%). Implants were commonly used by the women who were illiterate (5, 71.4%) and who had attended the university (5, 45.5%). Injectables were used by a higher number of women engaged in business (8, 57.1%) and most of the ethnic

Table 1. Hormonal contraceptives used and reasons for choosing them among 105 participants

	Reasons for choosing					
Hormonal contraceptives	Less Adverse Effects n(%)	Most effective n(%)	Availability n(%)	Less chance of missing n(%)	Privacy of Choice n(%)	Immediate return of fertility n(%)
Injectables	5 (7.0)	16 (22.5)	15 (21.1)	19 (26.8)	4 (5.6)	12 (16.9)
Implants	10 (14.3)	15 (21.4)	10 (14.3)	25 (35.7)	8 (11.4)	2 (2.9)
OCPs	4 (12.5)	3 (9.4)	14 (43.8)	3 (9.4)	3 (9.4)	5 (15.6)
IUCDs	1 (16.7)	1 (16.7)	0 (0.0)	3 (50.0)	1 (16.7)	0 (0.0)

groups. Among the breastfeeding women, injectables were used by the majority (14, 43.8%) of them while implants were used by the majority (26, 41.3%) of the women who were not breastfeeding. Similarly, 22, 53.7% of the women bearing only one child were using injectables while the implant was used by the majority (14, 93.3%) of the women with more than two children. The details of the demographic and other characteristics of 105 participants with regards to the use of hormonal contraceptives are shown in table 2.

Regarding the duration of use of contraceptives, a majority (60, 57.1%) were using contraceptives for less than 3 months. The average duration of use of hormonal contraceptives was 25.09 months ± 31.77. The details of the duration of use of contraceptives are shown in figure 2.

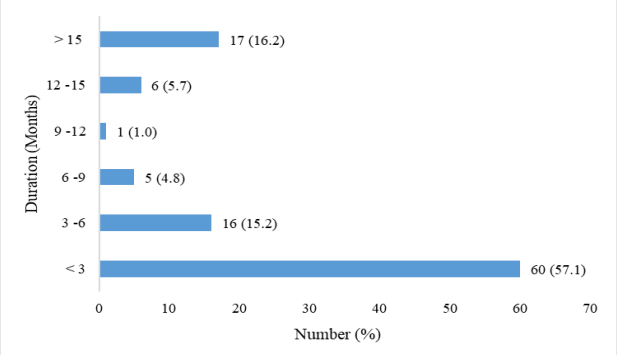

Figure 2. Duration of use of current contraceptives among 105 participants

Among hormonal contraceptives users, 53, 50.5% were using them for the first time while 52, 49.5% had a history of using contraceptives. Out of which 31, 51.7% had used injectables, 15, 25.0% had used OCPs, 9, 15.0% used implants and 5, 8.3% had used IUCDs previously. The major reasons for discontinuation of previously used hormonal contraceptives were adverse effects (36, 59.0%), to conceive baby (13, 21.3%) and failure to contraception (6, 9.8%).

Regarding the adverse effects associated with the hormonal contraceptives currently used by the participants, 79, 75.2% experienced adverse effects. The most common adverse effect was menstrual abnormalities 48, 21.7%. The details of the adverse effects are shown in figure 3.

Table 2. Demographic and other characteristics of 105 participants with regards to use of Hormonal Contraceptives

Variables	Total (n)	Injectables (n=42) No.(%)	Implants (n=40) No.(%)	OCPs (n=20) No.(%)	IUCDs (n=3) No.(%)
Age					
16 - 20 years	12	6 (50.0)	2 (16.7)	4 (33.3)	0 (0.0)
21 - 25 years	20	10 (50.0)	7 (35.0)	3 (15.0)	0 (0.0)
26 - 30 years	33	12 (36.4)	12 (36.4)	8 (24.2)	1 (3.0)
31 - 35 years	24	11 (45.8)	9 (37.5)	3 (12.5)	1 (4.2)
36 - 40 years	11	2 (18.2)	8 (72.7)	1 (9.1)	0 (0.0)
> 40 years	5	1 (20.0)	2 (40.0)	1 (20.0)	1(20.0)
Education					
Illiterate	7	0 (0.0)	5 (71.4)	1 (14.3)	1(14.3)
Below SLC	58	24 (41.4)	23 (39.7)	11(19.0)	0 (0.0)
Higher Secondary	29	16 (55.2)	7 (24.1)	5 (17.2)	1(3.4)
University	11	2 (18.2)	5 (45.5)	3 (27.3)	1 (9.1)
Occupation					
Service	13	2 (15.4)	6 (46.2)	5 (38.5)	0 (0.0)
Business	14	8 (57.1)	4 (28.6)	2 (14.3)	0 (0.0)
Agriculture	10	4 (40.0)	4 (40.0)	2 (20.0)	0 (0.0)
Housewife	63	24 (38.1)	26 (41.3)	10(15.9)	3 (4.8)
Others*	5	4 (80.0)	0 (0.0)	1(20.0)	0 (0.0)
Ethnicity					
Brahmin	7	4 (57.1)	1 (14.3)	1(14.3)	1(14.3)
Chhetri	25	10 (40.0)	10 (40.0)	5 (20.0)	0 (0.0)
Newar	24	11 (45.8)	7 (29.2)	6 (25.0)	0 (0.0)
Magar	12	5 (41.7)	3 (25.0)	3 (25.0)	1 (8.3)
Tamang	27	9 (33.3)	13(48.1)	4 (14.8)	1 (3.7)
Others[£]	10	3 (30.0)	6 (60.0)	1 (10.0)	0 (0.0)
Breastfeeding					
Yes	32	14 (43.8)	13 (40.6)	5 (15.6)	0 (0.0)
No	63	23 (36.5)	26 (41.3)	11(17.5)	3 (4.8)
Number of Children					
One	41	22 (53.7)	10 (24.4)	9 (22.0)	0 (0.0)
Two	39	14 (35.9)	15 (38.5)	7 (17.9)	3 (7.7)
> Two	15	1 (6.7)	14 (93.3)	0 (0.0)	0 (0.0)

*Student, labour
£BK, Danuwar, Madhesi, Majhi, Nepali, Sanyasi, Sarki, Purkuti

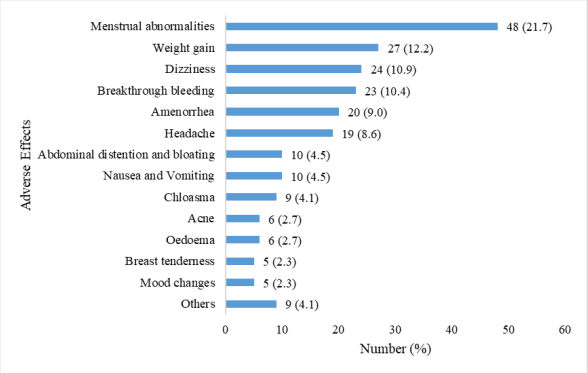

Figure 3. Adverse effects experienced from the current method of contraceptives among 79 participants. Others include Hirsutism, White Discharge, Lower abdominal pain, Heavy bleeding

DISCUSSION

Most efficacious, reliable and safe contraception is one of the essential needs of sexually active women. Hormonal contraceptives constitute one of the largest groups of the contraceptive method being used worldwide.[10] The most appropriate choice and their rational use can increase their efficacy and minimize the adverse effects associated with them. Such methods of contraception would prevent around one-fourth to one-third of all maternal deaths.[11] In the recent study, the majority of the women age 26 and 30 years were using hormonal contraceptives. In consistence with the findings of our study, a previous study has also reported that higher numbers of females of the same age group used hormonal contraceptives.[12,13] The high number of this age group using hormonal contraceptives might be due to the consciousness on family planning and their health where approximately 90% of the women give birth by the age of 25 in the context of the Nepalese population.[14]

In our study, the most commonly used injectables were slightly higher than implants. Similarly, injectables were most common in a study conducted in South East Asia, South America and Africa whereas implants were the most common in another study conducted in India.[2,12,15-19] Contradicting our findings, in a study conducted among European women, oral contraceptives were the commonly used ones.[20,21] The preferred method might vary in a different corner of the world and within the countries as well due to differences in safety data, knowledge, availability and tradition. Moreover, such variations in results might be because of varying populations covered by our and other studies which indicate the need for periodic research in different populations in a wider scale. In countries like Nepal, the diversification between women residing in rural and urban in terms of fertility preference, particularly male child plays an important role in contraceptive use.[22]

The national health report shows the increment in the use of injectables in Nepal with a two-fold increase from (2.3%) in 1991 to (5%) in 1996.[16,22] The increment might be due to the recent advancement and accessibility of injectables from health posts in rural parts and accessibility from hospitals to community pharmacies in an urban part of Nepal. In addition to the health sector advancement, the more plausible explanation might be that the use of injectables is independent of intercourse and also independent of the user's memory. Oral contraceptive methods involve remembering to take a pill every day which places considerable strain on women particularly those who have irregular lifestyles, busy or travel frequently as suggested in a previous study.[23] Also, unlike implants and IUCDs, with injectables, there is no problem of removal of the devices which might have led to pain, subsequent infection and device-related anxiety.[24]

Furthermore, prior studies have shown that implants were the most preferred ones followed by OCPs.[16,17] Our findings also accord the earlier studies that, among the women of 36- 40 years and > 40 years, implants seem to be more commonly used hormonal contraceptives. This finding also corroborates with the previous study in which the majority of the women with a mean age of 39.7 years used implants over others.[25] This might be because implant use in older women is a safe and effective contraceptive method as most of them develop contraindication for oral contraceptive use as well, as suggested by a previous study.[25] However, the use of contraceptives over the age of 40 can be different in other countries. IUCD was most preferred in the United Kingdom (UK) by women over 40 years whereas in Canada sterilization was preferred.[26,27] These might be the explanations for another finding in our study that the majority of the women who were either illiterate or had gone to the university were using implants whereas most of the women who were engaged in their business and of all ethnic groups were using injectables. Such kinds of contraceptive methods provide long-term protection. Generally, as women's level of education increases, they are more likely to use modern spacing methods.[16] Nevertheless, even if the women are illiterate or have lower level of education, their knowledge about the contraception could have been compensated by their literate partners as shown by previous study.[28] Education, occupation and ethnicity could be important determinant of contraceptive use, but mattered less in choice of method's effectiveness.[29]

Postpartum contraception is very crucial to prevent unintended pregnancies and short intervals between pregnancies. It is equally important to choose the safest and reliable contraceptive methods to prevent any harm to the mother and infants.[30] In our study, nearly one-third of the hormonal contraceptive users were lactating mothers, out of which the majority were using injectables followed by implants. Our findings are in line with the findings of the previous study which revealed that most of the lactating mothers and women who want a reliable and reversible form of contraception choose short-acting

hormonal contraceptives like injectables.[31,32] Combined oral contraceptives should not be used in lactating mothers before 42 days postpartum and the disadvantages of using the method generally outweigh the advantages between 6 weeks and 6 months postpartum as per guidelines of the World Health Organization (WHO).[33] Contrasting our findings, WHO also does not recommend the use of injectable contraceptives among breastfeeding women before 6 weeks postpartum, while the Center for Disease Control (CDC) claims that the implants and injectables are safer methods of contraception.[33,34] So, it has been advised that the discussion of contraceptive options for prompt postpartum contraception should be made mandatory in prenatal and postpartum care in the health care facilities.[35] We recommend that contraceptive counseling ideally should occur during prenatal visits, as women are typically more focused on other concerns at the postpartum visit.

Injectables were used commonly among women having one child and implants were common among women having more than two children in the current study. This indicates that it will be easy to conceive another baby with the use of injectables as they are injected in three months intervals which help the couple to plan for their family growth as suggested by a previous study.[18] Similarly, another study found that women with one or no children are less likely to use contraceptive methods or use reversible methods but the use was higher among women having more than three children.[22] The choice of hormonal contraception in this study corroborates with the duration of use of hormonal contraceptives as injectables and implants were used by the majority of the participants, the average duration was more than two years.

The prevalence of the use of hormonal contraceptives in Nepal is gradually increasing.[36] This might be the reason that among the participants enrolled in our study almost half of them had already used different kinds of hormonal contraceptives. Among them, a majority had used injectables as discussed previously. The reasons for discontinuation can differ depending upon the method of contraception. Our study showed that adverse effects, failure or contraception and conceiving a baby were the major reasons to discontinue the contraceptives consistent with the finding of another study conducted in Nepal.[37] However, the study conducted in Bangladesh found out that reason to conceive a baby was the primary reason.[17] Forgetfulness, undesirable side effects such as amenorrhea, prolonged bleeding, lower abdominal pain and weight loss were the common reasons leading to discontinuation.[19] Some of the reported side effects such as mood disturbance, decrease in libido, weight gain and poor bleeding control were the reasons for poor adherence and discontinuation in studies conducted in Europe.[38,39] In Nepal, the ability to achieve reproductive desires plays an important role in discontinuing contraceptives. The misconception such as IUCD, implants and OCPs causes cancer; IUCD can rupture the uterus; injectables make women weak are few reasons behind not using or discontinuing the contraceptives in Nepal.[37] The same study found that side effects are the most common reason to discontinue all the methods but the discontinuation is relatively lower than other countries.[37]

Our study revealed that 3/4th of the women on hormonal contraceptives experienced adverse effects which is consistent with the findings of a previous study.[19] Menstrual abnormality was the major complaint of most of the women in this study. Similar to the present results, a previous study has also revealed menstrual changes as the most commonly experienced adverse effect among injectables and implants, abdominal pain/pelvic pain among IUCDs users and heavy bleeding among both IUCDs and injectables users.[37] These adverse effects are associated with the exogenous hormones present in the method of contraceptives used as suggested by other studies.[40,41] However, among OCPs users, headache and dizziness or vertigo were the frequently reported problems.[37] In another study conducted in Nepal, back/waist pain constituted the most frequently reported adverse effect followed by physical weakness and headache or dizziness.[22] Whereas mild side effects like breakthrough bleeding, headache, breast tenderness, weight gain, mood changes were experienced by women using birth control pills found in few studies which align with the adverse effects reported by the participants in our study.[8,42,43] One study also reported that injectables are the only hormonal contraceptive associated with weight gain.[42]

The study was conducted only among the women attending the family planning center of only one tertiary care center at sub-urban area. Hence, we cannot generalize the findings in the total female population of Nepal. So, socio-economic and cultural variations are likely to affect the findings of our study. Besides, the limited sample size and duration would also have confounded the findings of our study though it is more unlikely. Therefore, our study warrants the urgent need for further studies on a wider scale and scope in Nepal for any effective recommendations.

CONCLUSION

The availability of hormonal contraceptives brought revolutionary changes in the roles of women in society. The contribution of hormonal contraception to improving the status of women worldwide is difficult to overestimate. The government of Nepal has developed the clinical protocol for reproductive health which mentions the warning signs and side effects of different female family planning used in modern hormonal contraceptive methods. Hence, the knowledge regarding their usage pattern and their adverse effects are the needful measures to recommend the potential interventions to improve reproductive health in our society. This study revealed that injectables were the most commonly used hormonal contraceptives because

of their dosing method. Menstrual abnormalities were the most commonly experienced adverse effects among hormonal contraceptive users. Regular data on hormonal contraceptive usage and the magnitude of risks and benefits shall be instrumental for developing policies regarding hormonal contraception and for providing information that helps individuals and couples to make informed choices about childbearing.

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