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Research Article

Evaluating Knowledge and Practices on Injectable Contraceptive Medroxyprogesterone Acetate (Antara) Among Working Women of Reproductive Age in a Metropolitan City: Development of an Educational Booklet

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Abstract

Introduction: Injectable contraceptives, especially medroxyprogesterone acetate (MPA), often marketed as Antara, are now a crucial part of family planning services since they give women a dependable and adaptable means of birth control. Working women of reproductive age still lack sufficient understanding and practices around it, particularly in urban areas.

Materials and Methods: A descriptive cross-sectional study was conducted with a sample of 150 working women of reproductive age, selected through purposive sampling. Data were collected using structured questionnaires to assess the participants' knowledge and self-reported practices inventory used to assess practices of injectable contraceptive MPA (Antara).

Results: The study revealed that the majority of participants (79.3%) had excellent knowledge about injectable contraceptive MPA under Antara, 20% had good knowledge, while only 0.7% were categorized in the average knowledge range, with no one having poor knowledge. Regarding practices, 99.3% of the women reported excellent practices, and 0.7% reported good practices. There was a strong positive correlation between knowledge and practices, with a $P = 0.001$, indicating statistical significance at $P < 0.05$. However, no significant association was found between knowledge and practices and the selected demographic variables ($P > 0.05$).

Conclusion: According to the study, women of reproductive age had an outstanding understanding and use of injectable contraceptives, such as MPA (Antara). The results highlight the necessity of ongoing educational programs and healthcare providers' participation to raise knowledge, guarantee effective contraceptive usage, and lower the injectable contraceptive dropout rate.

Keywords: Fertility, injectable contraceptive, knowledge, practices, reproductive age, working women

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Introduction

India was the first country in the world to launch a Family Planning Programme, as early as 1952, with the main aim of controlling its population. Over the decades, the program has undergone a transformation in terms of policy and actual program implementation and currently being repositioned to not only achieve population stabilization goals but also promote reproductive health and reduce maternal, infant and child mortality and morbidity.[1]

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Family planning promotes health, alleviates poverty, expands educational and employment opportunities, and enables women and couples to live better lives. However, current information suggests that more than 200 million women in the developing world have an unmet need for contraception.[2]

India has one of the world's fastest-growing populations. According to the National Family Health Survey 4, barely 50% of married women use contemporary contraception methods. The unmet need among postpartum and post-abortion women is estimated to be 13%.[3]

According to the World Health Organization 2020 estimates, 214 million women of reproductive age in developing countries have an unmet demand for contraception. More women in the state are using injectable contraceptives, also known as Antara (depot medroxyprogesterone acetate [DMPA]).[3] It can be used by any woman who wants a very effective form of birth control, including those who are breastfeeding or ineligible to use combined oral contraceptives that contain estrogen, just like other progestogen-only contraceptives. There are no general dangers associated with DMPA for cancer, congenital malformations, or infertility, according to studies conducted by the World Health Organization on nearly three million women who used the drug for months.[4]

Table 1: Frequency distribution of participants as per demographic variables (n=150)

Demographic variable	Frequency	Percentage
Age		
20 years-25 years	45	30.0
25 years-30 years	73	48.7
30 years-35 years	27	18.0
3.3	35 years and above	05
Religion		
Hindu	95	63.3
Muslim	32	21.3
Christian	09	6.0
Other	14	9.3
Education		
Up to higher secondary	78	52.0
Diploma and others	24	16.0
Graduate and above	31	20.7
Professional degree	17	11.3
Type of employment		
Government employee	16	10.7
Business/self-employed	35	23.3
Private employee	99	66.0
Any other	00	00
Type of family		
Nuclear	69	46.0
Joint	73	48.7
Extended	08	5.3
Family income		
Rs. 10000 and below/month	8	5.3
Rs. 10,001–20,000/month	64	4.7
Rs. 20,001–30,000/month	44	29.3
Above Rs. 30,000/month	34	22.7
No. of living children		
None	22	14.7
One	82	54.7
Two	30	20.2
More than two	16	1.7
Decision maker about the choice of contraception		
Self	18	12.0
Husband	18	12.0
Both	114	76.0
Other family members	00	00
Previous training on contraception		
Yes	00	00
No	150	100

The health ministry recently disclosed that women in the state increased their use of injectable contraception from 88,000 in 2018–2019 to 99,496 in 2019–2020. Officials working on the project have reported that despite the pandemic, they were able to meet 90% of their injectable contraception target.[5]

DMPA was approved by the Drug Controller General of India in June 1993 for marketing and use as an injectable contraceptive method. A post-marketing surveillance of DMPA use on 1079 Indian women, to validate the efficacy, safety, and acceptability of the drug as contraceptive was carried out by Upjohn Company from 1994 to 1997, in 10 independent, well-reputed private and NGO health centers across the country, coordinated by Federation of Obstetric and Gynaecological Societies of India. The results demonstrated that 150 mg DMPA injection is a safe and effective contraceptive and that appropriate counseling on the expected side effects greatly increased the acceptability of the method.[6]

Studies have found no differences in the health, growth, sexual development, aggression, physical activity, or sex role identity of teenage children exposed in utero to DMPA as compared with no *in utero* exposure. It is a highly effective contraceptive method. With a standard regimen, the 1st year effectiveness is 99.7% when the drug is used correctly; however, the effectiveness decreases in typical use. The perfect use failure rate of 0.3% is lower in comparison to 0.5% of female sterilization, 0.8% of intrauterine contraceptive device, and 3% of combined oral contraceptives.[7]

Objectives of the study

Primary objective

To assess the knowledge and practices regarding injectable contraceptives under Antara among the working women of reproductive age group.

Other objectives

1. To correlate the knowledge and practices regarding injectable contraceptives under Antara among the working women of reproductive age group
2. To ascertain the association between the knowledge and practices regarding injectable contraceptives under Antara with selected demographic variables of working women
3. To develop, validate, and distribute the information booklet regarding injectable contraceptives.

Hypotheses

H_0 There will be no significant association between knowledge with practices regarding injectable contraceptives among working women of reproductive age group.

H_1 There will be significant association between knowledge with practices regarding injectable contraceptives among working women of reproductive age group.

H_{01} There will be no significant association between knowledge and practices regarding injectable contraceptives among working women of reproductive age group with selected demographic variables.

H_2 There will be significant association between knowledge and practices regarding injectable contraceptives among working women of reproductive age group with selected demographic variable.

Materials and Methods [Table 1]

The study employed a descriptive cross-sectional design, involving 150 working women of reproductive age from metropolitan cities, selected through purposive sampling. To assess the participants' knowledge and self-reported practices regarding the injectable contraceptive medroxyprogesterone acetate (MPA) (Antara), structured questionnaires were used. The health belief model (Rosenstock, 1974) served as the conceptual framework for the study. Women living in a large metropolis who are of reproductive age (18–49 years) and presently working, either full-time or part-time. Furthermore, those are were familiar with or understanding of contraceptive methods, particularly injectable contraceptives such as MPA (Antara) were included in the study. Women who are not of reproductive age unemployed or not living in a city and women who have a history of serious MPA adverse effects or who are contraindicated for hormonal contraceptives were excluded from the study. In addition, an information booklet was developed by the researcher, covering topics such as contraception, its types, the need for contraception, the mechanism and procedure of injectable contraceptive MPA (Antara), its benefits, indications, contraindications, and potential side effects. After expert validation, the booklet was distributed to the participants. Data analysis was performed using the Statistical Packages for the Social Sciences (SPSS) Version 25.0 (SPSS), employing both descriptive and inferential statistical methods. Demographic characteristics were summarized using descriptive statistics, with frequency and percentage distributions applied to assess knowledge and practices about selected demographic variables. The mean and standard deviation were used to analyze both demographic data and the structured questionnaire on knowledge and practice. The analysis of variance test was utilized to assess the association between knowledge, practices, and demographic variables, while Karl Pearson's correlation coefficient was employed to evaluate the correlation between knowledge and practices.

Results

Sociodemographic characteristics of participants

Among the 150 women participants included, the majority 73 (48.7%), belonged to the 25 years - 30 years age group, 45 (30%) were from the 20–25 years age category, and fewer 32 (21%) were in the 30–35 years age category. The majority of 95 (63.3%) women participants were from the Hindu, 32 (21.3%), and 9 (6%) were from the Christian religion. 78 (52%) women participants studied up to higher secondary, 31 (20.7%) were graduates, 24 (16%) of women acquired diplomas, and the remaining 17 (11.3%) possessed professional degrees.

In employment status, 99 (66%) women were working as private employees 35 (23.3%) were self-employed and the remaining 16 (10.7%) were government employees. 73 (48.7%) of the women were from joint families, 69 (46%) were from nuclear families, and the remaining 8 (5.3%) were from extended families. 42.7% of working women belonged to income per month in Rs. 10,001–20,000 followed by 29.3% were belonged to income per month in Rs. 20001–30,000. Moreover, 22.7% belong to income per month of Rs. 30,000 and very few 5.3% belong to income per month of Rs. <10000. The majority 54.7% women have only one child, 20% have two children, 14.7% have no children, and very few 10.7% have more than two children. 76% of working women replied that both husband and wife make decisions about the choice of contraceptives. 12% reported that they are decision maker, similarly, 12% replied that their husband decides the choice of contraceptives. Most of the participants did not receive any training on contraception.

Table 2 illustrates that the mean knowledge score was 4.11 (82.3%) regarding the administration of injectable contraceptive followed by 4.90 (81.7%) regarding the concept of contraception and Antara. The mean knowledge score was 3.73 (74.7%) regarding the mechanism of injectable contraceptives and 5.07 (72.4%) regarding the safety and effectiveness of injectable contraceptives. Very few were 2.79 (69.7%) knowledge of side effects of injectable contraceptives.

Part B- Grade-wise overall level of knowledge of working women regarding injectable contraceptives MPA under Antara.

Table 3 depicted that, the majority of 79.3% of working women had excellent knowledge, 20% had good knowledge, and very few 0.7% were in the average knowledge range. No one had poor knowledge.

Table 4 depicted that, the mean practice score was 5.57 (92.8%) reported regarding the safety and effectiveness of injectable contraceptives followed by which 3.45 (86.3%) regarding practices of contraception. The mean practices score was 5.02 (83.7%) reported regarding the administration of injectable contraceptives, 2.61 (65.3%) regarding mechanism, and 3.21 (64.3%) reported regarding side effects of injectable contraceptives.

Table 5 illustrates that the majority 99.3% of Women reported excellent practices and very few 0.7% reported good practices. None of them were reported as average or poor practices.

Table 2: Items wise means knowledge score of working women regarding injectable contraceptives (*n*=150)

S. No	Item wise knowledge mean score	Max score	Mean score	Mean percent
1	Concept of contraception and Antara	6	4.90	81.7
2	Administration of injectable contraceptive	5	4.11	82.3
3	Mechanism of injectable contraceptives	5	3.73	74.7
4	Safety and effectiveness of injectable contraceptive	7	5.07	72.4
5	Side effects of injectable contraceptives	4	2.79	69.7

Table 3: Grade-wise overall level of knowledge of working women regarding injectable contraceptive (*n*=150)

S. No	Grade wise overall level of knowledge	Percent range	Frequency	Percentage
1	Poor knowledge	0–40	0	0
2	Average knowledge	41–50	1	0.7
3	Good knowledge	51–60	30	20.0
4	Excellent knowledge	61–100	119	79.3
	Total		150	100

Table 4: Assessment of part-wise mean practices score of working women regarding injectable contraceptives (*n*=150)

S. No	Item-wise practice mean	Max score	Mean score	Mean percent
1	Practices of contraception	4	3.45	86.3
2	Administration of injectable contraceptives under Antara	6	5.02	83.7
3	Mechanism of injectable contraceptive	5	3.21	64.3
4	Safety and effectiveness of injectable contraceptive	6	5.57	92.8
5	Side effects of injectable contraceptive	4	2.61	65.3

Table 5: Assessment of grade-wise overall level of practices of working women regarding injectable contraceptives MPA under Antara (*n*=150)

S. No	Grade-wise overall level of practice	Percent Range	Frequency	Percentage
1	Poor practice	0–40	0	0
2	Average practice	41–50	0	0
3	Good practice	51–60	1	0.7
4	Excellent practice	61–100	149	99.3
	Total		150	100

MPA: Medroxyprogesterone acetate

Table 6 and Figure 1 identified that the Pearson's table (*r*) table value was 0.159 at 0.05 level of significance with no pairs being 150. The calculated "*r*" value was 0.851, which was more than the (*r*) table value of 0.159. The $P = 0.001$ which was <0.05 indicated that there was a strong positive correlation between Knowledge and Practices. Hence, null hypothesis (H_{01}) was rejected and the alternate hypothesis (H_1) was accepted.

Table 7 indicated that, for demographic variables; the *P*-value was more than 0.05 level of significance ($P > 0.05$). The result identified that there was no significant association of these demographic variables with the level of knowledge scores. Hence, null hypothesis (H_{02}) was accepted and the alternate hypothesis (H_2) was rejected.

Table 8 indicated that, for demographic variables; the *P*-value was more than 0.05 level of significance ($P > 0.05$). The result identified that there was no significant association of these demographic variables with the level of practice score. Hence, null hypothesis (H_{02}) was accepted and the alternate hypothesis (H_2) was rejected.

Discussion

The present study was undertaken as "A study to assess the knowledge and practices regarding injectable contraceptives MPA under Antara among the working women of reproductive age group in a metropolitan city in view to develop an information booklet." As far as knowledge is concerned it indicated that, the majority 79.3% of working women had excellent knowledge, 20% had good Knowledge, and very few 0.7% was in average knowledge range. No one had poor knowledge. Practices regarding injectable contraceptives illustrated that the majority 99.3% of Women reported excellent practices and very few 0.7% reported good practices. None of them were reported as average or poor practices.

The above research findings are supported by a similar cross-sectional study conducted in 2020, Osinowo *et al.* (2020), investigated women's knowledge, perceptions, and practices about DMPA-SC/self-injectable contraception. Structured pretested questionnaires were utilized to collect data from 844 women of reproductive age. According to the findings, around 89.5% of respondents had ever heard of family planning; 97.6% had heard of DMPA-SC; 83.2% had ever used family planning; 95.7% had current usage of family planning; 94.3% had ever used DMPA-SC; and 46.5% had ever used DMPA-SC/SI. The justification for using DMPA-SC/SI was that it was simple to use, effective, and self-administrable.[8] The study's main finding was a $P = 0.001$, which was <0.05 level of significance, demonstrating that there was a substantial positive link between working women's awareness and practices about injectable contraceptives MPA under Antara.

A similar study also conducted by Bairagya *et al*. conducted sure at a sub-center-based observational, cross-sectional survey among 212 reproductive age group women living in the rural areas of a district, in West Bengal to find out the prevalence, reasons, and associated factors for using injectable contraceptive among the women of reproductive age group. A multi-stage cluster random sampling technique was done

Table 6: Correlation between knowledge and practices regarding injectable contraceptives MPA under Antara among working women (*n*=150)

Correlation	N	Pearsons correlation value "*r*"	Pearsons table value "*r*"	"*P*"-value	Significance *P*<0.05
Knowledge	150	0.851	0.159	<0.001	Significant
Practice	150				

MPA: Medroxyprogesterone acetate

Table 7: Association of knowledge score of working women regarding injectable contraceptive with selected demographic variables (*n*=150)

S. No	Demographic variables	Df	Calculated F-value	Table F-value	*P*-value	Significance
1	Age	3.146	0.32	2.66	0.815	Not significant
2	Religion	3.146	0.15	2.66	0.932	Not significant
3	Education	3.146	1.29	2.66	0.281	Not significant
4	Type of employment	2.147	0.53	3.06	0.590	Not significant
5	Type of family	2.147	0.05	3.06	0.948	Not significant
6	Family income	3.146	1.99	2.66	0.178	Not significant
7	No living children	3, 146	0.23	2.66	0.874	Not significant
8	Decision maker	2.147	0.75	3.06	0.476	Not significant

**P*>0.05 level of significance

Table 8: Association of practices score of working women regarding injectable contraceptive with selected demographic variables (*n*=150)

S. No	Demographic variables	Df	Calculated F-value	Table F-value	*P*-value	Significance
1	Age	3.146	0.89	2.66	0.449	Not significant
2	Religion	3.146	0.09	2.66	0.968	Not significant
3	Education	3.146	0.71	2.66	0.547	Not significant
4	Type of employment	2.147	0.84	3.06	0.435	Not significant
5	Type of family	2.147	0.09	3.06	0.910	Not significant
6	Family income	3.146	1.48	2.66	0.223	Not significant
7	No of living children	3.146	1.28	2.66	0.283	not significant
8	Decision maker	2.147	0.35	3.06	0.703	Not significant

**P*>0.05 level of significance

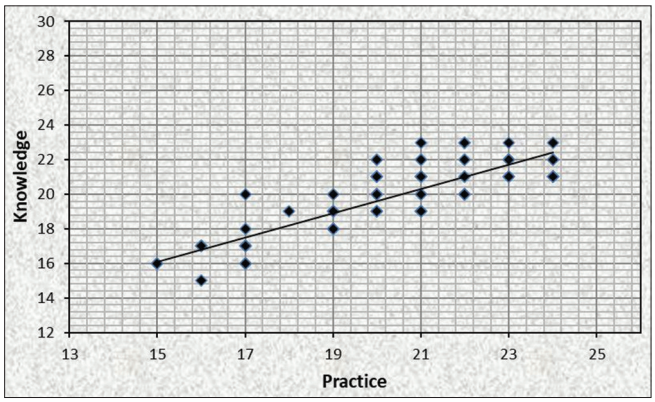

Figure 1: Correlation between knowledge and practices

considering villages as the cluster to get the required sample. 212 reproductive age group women were chosen from a total of 16 villages, selected by simple random sampling. Information regarding study variables was collected by direct interview of the respondents by visiting individual houses with the help of a pre-designed, semi-structured proforma. Strict confidentiality and anonymity were maintained throughout the study. The study revealed that the proportion of teenage marriages was unexpectedly high. More than half of mothers were unwilling to have babies in the future. One-third of the study population used injectable contraceptives, and ASHA was the main suggestion provider in choosing the method.[5]

To support the above findings similar descriptive cross-sectional study was conducted by Thapa *et al*. performed research on contraception knowledge, attitudes, and practices among married women of reproductive age in selected Wards of Dharan Sub-Metropolitan City. The results showed that the majority (53.1%) of respondents were between the ages of 20 and 34. The majority of responders (92.3%) have heard of contraception before. Injecting Depo-Provera was a well-known approach (92.7%). The mass media (85.8%) was the primary source of information. The mean percentage score for knowledge was 45.23%. The majority of respondents (90.4%) had a positive outlook, with only 64.6% actively utilizing contraception. There was a favorable link established between knowledge, attitude, and contraceptive practice.[9]

Agrawal *et al*. conducted an ambispective observational study carried out over 6 months in the outpatient department of the family welfare division at a tertiary care hospital in New Delhi. The study enrolled 483 acceptors of injectable MPA, who were interviewed in person or by phone. The average age of the investigated population was 28.44 ± 4.73 years, with an average parity of 2. Injection MPA was started in the interval

period in 304 women (63.3%), post-abortal in 124 (25.8%), and postnatal in 52 (10.8%). The majority of women (83.5%) obtained information about the injection from health workers. The majority of women (74.3%) were satisfied with the injection and expressed a willingness to continue, with 67.7% still using it at the time of the interview. Menstrual irregularity was the most prevalent side effect, affecting 48.5% of women. The current investigation found a high continuing rate of injectable MPA in the Indian population.[3]

Conclusion

In conclusion, while the potential of Antara as an effective contraceptive is acknowledged, its benefits are not fully realized due to insufficient knowledge about side effects and compliance among working women in the metropolitan area studied. Developing and disseminating an informative booklet is recommended to enhance the understanding and adoption of Antara injectable contraceptives.

Acknowledgment

We are appreciative to all study participants for their willingness to complete our questionnaires.

Ethical Permission and Consent

The Ethical Review Committee of the Sir J J Group of Hospitals in Mumbai granted ethical clearance, and the study participants provided written authorization consent.

Conflict of Interest

There is no conflict of interest related to the publishing of this manuscript.

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