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The restrictive guideline is a barrier in the expansion of injectable contraceptive, DMPA (Depot medroxyprogesterone acetate) up to health sub-center level in India: A short review of other country's experience involving community health workers as the injectable contraceptive provider

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Abstract: Background: Depot Medroxy Progesterone Acetate (DMPA) is a very popular contraceptive in many African Countries. Those countries successfully rolled out DMPA engaging Community Health workers (CHW) for the last several years. In India, ANMs (auxiliary nurse midwives) are not allowed to administer DMPA 1st dose independently, though subsequent doses are allowed. Currently, in India, DMPA clients are screened by an MBBS doctor before administering 1st dose by an ANMs or GNMs (general nurse midwives).

Objectives: To gather evidence on the competency of ANM in DMPA administration and client assessment and reviewing the safety, efficiency, and continuation rate of DMPA provided by CHWs.

Method: Review of online journals in Google Scholar and PubMed focusing on DMPA administration by Community Health Workers and generated evidence of safety, efficiency, continuation, and acceptability of services of CHW as DMPA provider.

Results: The safety, efficiency, acceptability, and continuation of DMPA injection are better if provided by community health workers in comparison to a health facility-based model where trained and professional nurses administer the DMPA.

Conclusion: whereas non-professional and poorly trained CHWs are providing DMPA at doorsteps with increasing efficiency, safety, and continuation rate, the Government of India also should train and engage ANMs of all sub-centers to assess, administer and follow up of DMPA injections from the very first dose itself which not only expand the service to the community level and also enhance acceptance and continuity of the service and thereby reducing the unmet need and total fertility rate of the country

Keyword: DMPA, Community health worker, ANM, safety, India, continuation

INTRODUCTION

DMPA is a proven, effective, and safe contraceptive method and has been used in many countries for the last several years. It is a very convenient method as does not interfere with privacy as injections are given 3-4 monthly. This does not need any regular precautions as for Pills and Condoms. It is one of the highly effective methods for perfect user and the failure rate is as low as 0.3% which is lower than female sterilization (0.5%) and IUCD (0.8%). It is a reversible method that does not interfere with sexual activities also. It can be injected at any time provided the woman is not pregnant and adequate backup is taken for the first 7 days of 1st dose. One of the major advantages of it is that it can be used during the breastfeeding period after 6 weeks of postpartum.¹ In India, it was used in the Private sector since 1994. GoI has introduced the same in the National Family Planning Program in the year 2016-17. GoI has mentioned a step-by-step strategy to cover the entire country in 3 phases from starting at MC and DH and SDH, CHC, FRU, PHC in the 2nd phase, and SC in the 3rd phase. The government of India hoped that the addition of MPA injectables will increase CPR by 3-4% points per year.¹ In India, the 1st dose of MPA intramuscular injection is given only after screening by an MBBS medical doctor or above category in the public health facilities. The subsequent injections can be administered by an SN, ANM, Home, or Ayurvedic Doctor. The Guideline states that there is no need for a

detailed confirmatory test for the above condition unless preexisted. SC (Uni jet) version not yet started, though both versions may be used by a client interchangeably. In India, only 47.8% of women used modern methods of family planning, and 12.9% of women have an unmet need for family planning.² Further India has to sustain 100 million current users of family planning and add 48 million new users by 2020. So, the government of India is committed to increasing CPR to the level of 63.7% by 2020.³ Under these circumstances, expanding the MPA injection to the community will boost the contraceptive coverage and will add new clients to the family planning program. Several countries around the world have allowed community health workers (CHW) to administer DMPA injection in community distribution programs. CHWs receive some contextual training for a planned intervention and have no formal professional or paraprofessional certificate or degree in tertiary education. In some countries, self-injection of MPA is also allowed which resulted in better adherence and continuation of DMPA.⁴ which is a proxy indicator of the safety profile of the injectable contraceptive DMPA. World Health Organization has recommended that with adequate and competency-based training CHWs like community-based distributors and village level health workers, can screen clients effectively, provide DMPA injections safely, and counsel on side effects appropriately, and demonstrate competence equivalent to facility-based providers of progestin-only injectables.⁵

In India, there are 3 cadres of CHWs as ASHA, AWW, and ANMs are posted in the community for various health-related activities. ⁶Under home delivery of the contraceptive scheme, ASHAs are allowed to deliver combined oral contraceptives (Mala), Condoms, and Emergency pill at doorsteps and they act as motivators and influencers for permanent methods. ⁷ANMs are the backbones of India's family planning program. They perform ANC and high-risk screening, immunization, counseling, and family planning services like IUCDs. ⁸ ANM in India can administer intradermal, subcutaneous, and IM injections in the national immunization program in India and even be allowed to administer adrenaline injection in case of anaphylaxis. Under these contexts, not allowing an ANM to administer 1st dose of DMPA independently has raised doubts about the strategy of the government in DMPA to roll out. Is there considerable risk involved with this type of injectable contraceptives? Are ANMs not efficient and capable of assessing the medical eligibility for MPA? What is the experience of other countries involving CHW as DMPA providers?

So, the present review is undertaken with the following objectives

- To assess the competency of ANM in risk assessment and safe injection technique in India
- To generate evidence on the safety and efficiency CHWs as DMPA provider.
- To assess the continuation rate of DMPA if provided by CHWs in village settings

METHODOLOGY

Internet search has been done in Google scholar/pub-med using the word like DMPA, CHW, Safety, efficiency, continuation for gathering relevant documents for the literature. There were several papers available on only DMPA alone which are not considered as they do not come under the purview of this review. The kinds of literature focusing on CHW as DMPA providers and safety, efficiency, client satisfaction, and continuation in different geographical settings across the world were considered in this review. Online searches in Google using words like ANM, immunization, and AEFI were made to generate competency of ANMs in risk assessment and injection administration.

Definition of CHW:

Many countries in Sub-Saharan Africa deploy lower-level cadres in different forms: as government or nongovernment-affiliated, as volunteers or salaried workers, with limited or wide-ranging responsibilities to the communities they serve. These community health workers may or may not have any formal education or training as full-time health workers but receive some sort of job-related training. ⁹

RESULTS AND DISCUSSION

The safety profile of DMPA:

DMPA is a liquid preparation and does not require any cold chain for storage and contains Medroxyprogesterone acetate. It is stored at room temperature at district, block, and facility stores. Though there were several concerns in the initial phase, later proven to be safe as a contraceptive. However, proper screening for eligibility of the client is essential

before administering DMPA in the 1st dose. A couple of checks has to be done like screening for hypertension, prior h/o MI and stroke, breast cancer, liver disease, and diabetes. If there is no risk of these factors after screening the 1st dose is given. However, it is not mandatory to be excluded in settings where facilities are limited. (Reference book of DMPA) ¹⁰ (Selected practice recommendations for contraceptive use)

Competency of ANM on administering injection and risk factor screening:

Under UIP, millions of vaccines are administered by ANM each year through intradermal, subcutaneous, and intramuscular routes. ¹¹ (Immunization Handbook for Medical Officers). Vaccines are a safe but immunogenic biological product. All vaccine has the inherent property of being immunogenic and bear some risk of allergy and anaphylaxis which has no relation with the route of administration. It is the ANM who screen all infants for eligibility and administer vaccines without significant program error such as abscess or nerve injury etc. ANMs are even allowed to administer adrenalin in case of anaphylaxis if arises in the field. ¹² (AEFI surveillance and response) There is no medical officer to screen infants before giving vaccines at sub-center and outreach camps of immunization. ANM of India conducts antenatal check-ups of pregnant women and also screen effectively high-risk cases of pregnancy during the antenatal period. ANMs are also trained for IUCD insertion at the sub-center level where no medical officer is posted. Some ANMs are efficiently conducting deliveries in India following SBA training. ¹³ (A Strategic Approach to Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) in India)

Safety, efficiency, continuation, and satisfaction of CHWs as a provider:

Several countries have piloted and have engaged CHWs for providing DMPA injections around the world. Some highly published studies are reviewed below. A non-randomized study was conducted to compare the quality and safety of DMPA injection by CHWs and Clinic based Nurse in Uganda. The study found that 95% of clients were satisfied with the Injection provided by the CHWs and 85% reported receiving information on side-effects. There were no serious injection site problems in either group. The continuation rate for both the group was also almost similar (88% among clients of community-based workers, 85% among clinic-going clients). Safety, acceptability, and quality were almost similar in each group. ¹⁴ A review stated that supervised and trained Community Health Workers can provide DMPA safely. Trained CHWs are competent enough to screen and counsel clients on DMPA contraceptives also. Clients' satisfaction was also reported to be higher among clients receiving an injection from CHWs. The benefits of community-based provision of DMPA by CHWs are beneficial than the risk. ¹⁵ Another study conducted in Zambia reported that DMPA injections provided by CHWs are safe, acceptable, and feasible. The continuation rate of subsequent doses was also high. Infection prevention practices and injection procedural assessment were found to be 100% and 9.6 points respectively at the end line. Only 2% of clients reported any problems with the injection provided by the CHWs and there was no report of any abscess or infection at the site of injection during the

supervisory visit by supervisors. 98% of clients were satisfied with the service of CHW and 99% wanted to receive the next dose from the CHWs. ¹⁶In the Democratic Republic of the Congo where medical and nursing students are allowed to search house to house to find clients and counseled on family planning and acceptors were provided DMPA injection on spot. There were 51.6% new acceptors of DMPA in the study who never used any form of family planning method. No problem was reported by 87.4% of recipients. 58% experience some pain at the time of Injection only. Only 3.4% had side effects. 92.3% of clients received 2nd dose after three months indicating high client satisfaction over the services of medical and nursing students. A study conducted in Ethiopia found that the safety, efficacy, and continuation of community-based reproductive health agents (CBRHAs) is equivalent to health extension workers (HEWs). The study also reported less discontinuation rate of DMPA if received from CBRHAs compared to the health facility level. Women also reported fewer side effects if injection received from CBRHAs.¹⁸

Continuation rate of DMPA in India:

The data available in HMIS shows that only 8% of clients received MPA 4th dose and 33% of clients received 2nd doses in the year 2018-19. In 2019-20, there has been some improvement in DMPA continuation rate as 2nd dose (47%), 3rd dose (25%), and 23% for 4th or more doses in India.¹⁹Table 1.

CONCLUSION

In India, DMPA injection 1st dose is provided at health facilities after screening by an MBBS doctor. Data available in HMIS (Table1) shows a low continuation rate of DMPA injectable in India compared to the continuation rate of other countries where DMPA is provided by community-level health workers at the community level. This low level of continuation rate in India may be due to the lack of access and availability of the DMPA at the community level, lack of transport supports for visiting health facilities for subsequent doses, poor client's dissatisfaction with the service, lack of counseling, the occurrence of side effects or stock out of DMPA at the health facilities. Independent research is very much needed to confirm the reasons of drop out and competency in client assessment by ANM for providing 1st dose of DMPA injectables.

RECOMMENDATION

1. Involve ANM as 1st dose provider for DMPA at sub-center level after ensuring competency-based training of client assessment.
2. Develop a simple client assessment tool/checklist for assessing eligibility for DMPA injection.
3. Ensuring tracking of DMPA doses by a client using tickler bag used in immunization
4. Proper counseling before and after DMPA and dispel misinformation and myths associated with it
5. Ensure the regular flow of DMPA at the facility and sub-center level for uninterrupted service of DMPA.

Competing Interest Not Revealed and no Conflict of Interest

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Table 1. Table showing doses of DMPA injections administered and continuation in India

Year	DMPA 1 st dose	DMPA 2 nd dose	DMPA 3 rd dose	DMPA >= 4 th dose
2019-20	1000294	469364(47%)	254627(25%)	229578(23%)
2018-19	659478	215518(33%)	Data not updated	52663(8%)