

Development of a Study tool to Assess Gaps in Respectful Maternity Care in Health Facilities of India

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Abstract

Background: Maternal mortality persists to be a major challenge for India like in other developing countries. Though the efforts to increase the institutional deliveries have resulted in appreciable results, it has not translated to the corresponding decline in maternal mortality rates. Dearth in quality of care especially concerning respectful maternity care in health facilities is considered as a major reason for this phenomenon. This work describes the development process of the study tool to assess respectful maternity care in the health facilities of India.

Methods: A collaborative approach was employed for the development of a comprehensive tool to be used to assess respectful maternity care in the Indian setting. The tool development process comprised of four steps: 1) literature review and meeting with Technical Advisory Group; 2) the National Stakeholders workshop and development of the initial tool; 3) feedback on the tool from twenty tertiary care public health facilities from various regions of India; 4) the final tool and its validity approval by Technical Advisory Group.

Results: A comprehensive tool was made comprising of indicators for assessing deficits in respectful maternity care, and for assessing contextual data of the health care facility. The initial tool was tested at twenty facilities. The changes suggested and observed were adapted, and the final tool was prepared. The Technical Advisory Group approved the content validity of the tool.

Conclusions: A comprehensive tool was made to assess various aspects of respectful maternity care provided in tertiary Indian institutional settings aiding in a deeper understanding of the phenomenon. This tool is recommended, especially to health care providers of India, for assessing the status of maternity care in health facilities and bringing the required interventions in the health care facilities.

Background

Maternal mortality has been a critical global health issue. The Sustainable Development Goals (SDG) aims (target 3.1) to reduce the global Maternal Mortality Ratio (MMR) to less than 70 per 100,000 live births by 2030 [1]. Global actions in this regard had initially largely focused on increasing institutional delivery. Though this has resulted in a substantial increase in institutional deliveries, it has failed to translate to a corresponding decline in MMR [2]. To cater to the reduction in maternal mortality, the importance of quality of care in health facilities is being increasingly realized, on which the focus has lately been shifted [2].

An area associated with poor quality of care is the lack of Respectful Maternity Care (RMC) during childbirth in the health care facilities. According to WHO, 'Respectful maternity care refers to care organized for and provided to all women in a manner that maintains their dignity, privacy and confidentiality, ensures freedom from harm and mistreatment, and enables informed choice and continuous support during labor and childbirth'[3]. RMC has increasingly become a rights issue along with a public health issue. In this context, WHO released a statement in 2014 stating 'every woman has

the right to the highest attainable standard of health, which includes the right to dignified, respectful health care' [4].

This is a relatively new area in research, however, there is an effort to describe and capture the experiences of women pertaining to the mistreatment they receive from the health providers globally as well as regionally during facility-based childbirth to address it appropriately [5–8]. There is a lack of a standard measure of mistreatment by a provider during childbirth [6]. This lack of standard measure may be the reason for the high variation in the prevalence estimates of disrespect and abuse (D&A) in studies [9].

India's experiences are similar to the global trend. India continues to contribute significantly to the global estimates of maternal mortality; approximately 15% of the global maternal deaths in 2015 are from India [10]. Though this is partially due to its large population, however, mortality rates also show why India contributes to a large proportion of maternal deaths: for 2016-18, the MMR for the country is estimated at 113 per 100,000 live births [11], much more than the SDG goal of 70 maternal deaths per 100,000 live births. India too had focused on increasing institutional deliveries. For instance, Janani Suraksha Yojana (JSY) scheme was launched in 2005 under the National Rural Health Mission, and ASHA workers were given incentives to bring women to institutions for delivery under the National Health Mission launched in 2013 [12]. Though these efforts have led to an appreciable increase in the institutional deliveries, it has not translated to the corresponding decline in maternal mortality ratios and other key perinatal health indicators [8]. Lately, India too had realized that quality of care is critical to the reduction in MMR, and launched initiatives like Labor Room Quality Improvement Initiative (LaQshya) under the National Health Mission, and Surakshit Matritva Aashwasan (SUMAN) aiming at quality improvement.

In this context, the Division of Reproductive Biology, Maternal Health and Child Health (RBMH&CH) of the Indian Council of Medical Research (ICMR), New Delhi, started the Respectful Maternity Care Initiative (RMCI) in collaboration with White Ribbon Alliance India (WRAI) - especially expertise within its National secretariat at the Centre for Catalyzing Change (C3). The initiative aims to engage with maternity care stakeholders to create awareness and recognition of RMC in health facilities; review the available standards for measuring RMC, and to develop a tool for the assessment of the gaps in RMC in the context of India's health care facilities. The results of the study will inform policy and programme managers, clinicians, health care workers, and all other stakeholders to improve the care of women during childbirth. A standard localized tool was required to assess the gaps in RMC that could then be used to support the interventions for improving RMC in tertiary care public hospitals of India. This paper presents the process of review and development of the study tool.

Methods

The study tool was developed in four phases (Fig. 1), and the activity was coordinated centrally by ICMR and C3/WRAI.

The **first phase** was the formative phase when the project team reviewed existing published literature including articles in peer-reviewed journals and available reports to collect evidence of RMC and its methodology from global and Indian literature. This helped to identify study tools used by researchers to measure RMC in facility births. A Technical Advisory Group (TAG) was constituted by ICMR in January 2017 consisting of subject experts, maternal health programme managers, women's health groups, women's rights representatives and clinicians at the national and regional level, chaired by an external academic expert. The TAG agreed to validate, in an Indian setting, the internationally accepted classification used by the USAID flagship program - Maternal Child Health Integrated Program (MCHIP). This classification is derived from the landscape analysis by Bowser and Hill of D&A in facility-based childbirths in which they captured what is currently known on the subject, through literature review, structured group discussion, and in-depth interviews [5]. The authors identified seven different domains of D&A viz. physical abuse, non-consented care, non-confidential care, non-dignified care, discrimination, abandonment of care, and detention in facilities [5]. These domains are useful in identifying the gaps in RMC and deriving solutions. The tool developed by MCHIP measures compliance of RMC under these seven domains and is based on the observation of two women at a time by one observer throughout labor and delivery [13]. The MCHIP tool has seven performance standards, and each standard has respective verification criteria ranging from minimum one to a maximum of nine criteria. The criteria relate to the common observations of violations in RMC reported in the literature and correspond to the minimum level of care that should be offered to birthing women to provide the corresponding RMC standard.

In the **second phase**, a two-day National Stakeholders' Workshop on RMC was jointly conducted by ICMR and C3/WRAI on April 20–21, 2017 at New Delhi to engage with various stakeholders to understand their views and their preparedness for RMC, and review and adapt the MCHIP study tool to Indian settings. A heterogeneous group of 85 participants with experience in providing maternity healthcare services attended the workshop. There was representation from the Federation of Obstetric and Gynecological Societies of India (FOGSI), the Trained Nurses' Association of India (TNAI), WHO, USAID, the Ministry of Health and Family Welfare (MOHFW), Government of India, and obstetricians, nurses, medical social workers, woman's health advocates and lay members from society, besides social science researchers from ICMR. The experts presented the available global and Indian evidence on RMC with facility heads sharing their experience and efforts on implementing RMC standards in their facilities.

At the beginning of the RMCI initiative, the understanding of RMC was very nascent in India, especially among practitioners. Not all the participants who attended the national stakeholders' workshop - which was possibly the first workshop on the subject at the national level – were aware of RMC. Availability of any RMC standards and indicators were not considered important, and their dearth was not regarded as a violation of a woman's right to respectful maternity care, indicating normalization of the violations. To mitigate this resistance, the facilitators adopted clinical scenarios, case studies, and role-plays to help develop sensitivities for RMC among the participants.

Thereafter, during the national stakeholders' workshop, participants were divided into groups to review and adapt the MCHIP tool to the Indian context. During the group activity, the participants validated the applicability of all the seven domains to the Indian context and provided feedback on the verification criteria of the study tool under the seven domains. The results of the workshop were collated and a tentative tool comprising of standards and adapted verification criteria was prepared.

Next, a draft manual was prepared, to be used by observers in the selected facilities, to record the RMC gaps and the related information during labor and delivery. The manual comprised of the revised tool with RMC standards and their respective verification criteria; a cover page to capture information on the infrastructure, the client load, the period of observations; and a comment section to identify the context of the identified D&A at the facilities.

In phase three, feedback on the tool was taken from twenty tertiary care public health facilities from across India. The process was undertaken in the following three steps:

Identification of study sites (Step 1): This activity was initiated through the ICMR's Human Reproduction Research Centers (HRRCs) located in the Departments of Obstetrics & Gynecology of the respective medical college hospitals. The Principle Investigator (PI) communicated with thirty HRRCs for their willingness to participate in the RMC study. The interested departments were advised to obtain ethical approval from their local Institutional Ethics Committees. Twenty facilities with representation from different regions of India - North, South, East, and West - consented to participate in the study and submitted the ethics approval (Fig. 2).

Training of officers (Step 2): Each of the twenty sites identified one or two nodal officers who would coordinate the research study activities to be conducted in their facility. The identified nodal officers were medical doctors with experience in maternity care. These officers were working as Research Officers or faculty members in the Department of Obstetrics and Gynecology in their respective facilities.

The nodal officers of the selected sites were trained at New Delhi at a two-day training held at ICMR, to apprise them with the concept of RMC through didactic lectures and case discussions. During this training, the importance of RMC was highlighted, and the study methodology and study tools were discussed in detail and role-plays helped explore differing points of view of care. On the second day of the training, on-site observations were arranged in the labor room of the local medical college hospitals. This was done to give the participants hands-on experience in correctly employing the study tool to observe and record the types and frequency of violations of RMC standards. To ensure uniformity in assessing and recording gaps in RMC in the observed facility, the participants were sent to labor rooms in small batches along with one facilitator for thirty minutes each. Once the visit was completed, the participants returned to the training venue to discuss and deliberate on their findings, resolve queries, and address gaps.

The nodal officers were instructed on multiple aspects that were to be followed during observations in their respective sites. They were suggested to find a place to sit with a clear line of view, avoid intervening

in the existing practices, avoid asking questions or explanations, or revealing their tasks or study tools to the staff being observed upon. In addition, some specific guidelines were made to avoid drawing the attention of staff in the labor room that may alter the behavior of the staff. It was specified that actual observations should be started only after the labor room staff is accustomed to the presence of the researchers. For this, they were advised to visit the labor room at odd hours and sit in the labor room premises for at least one hour without taking down any notes. Also, before each observation, the researchers were advised to sit inside the premises for at least 15 minutes before the actual time of starting the observation. The observers were instructed that the first step was to fill in the patient load data, after which actual observations could begin. The observers were also told that the majority of the observations should be noted down during the hour of observation, after which they should move to a separate room and complete filling in the study tool including the context of the observations. However, it was also clarified that if some violation was observed to be ongoing, it was necessary to capture it in the study tool in the labor room itself. The observations were to be later typed and a soft copy sent to the PI. Verbatim quotes recorded in the local language were to be translated into English. To maintain confidentiality, each facility was provided with a unique facility code.

Pilot testing of the study tool (Step 3): After the nodal officers were trained, they were asked to pilot test the study tool in their facilities, and send back three filled-in tools to the central coordinating team. To ensure adequate quality and completeness of data recorded, queries, when generated, were resolved with the sites through email, phone calls, or skype.

In the fourth and last phase, after considering the inputs received from the sites during piloting, the central coordinating team revised and finalized the study tool and the accompanying instruction manual for the observers. A code list for comments and cadre of health care provider observed was prepared and added to the instruction manual. The pilot-test findings led to changes in the wording of the tool to avoid double negatives and an additional place to record the remarks of the observer that would help in understanding the context of the behavior. A detailed instruction sheet was also prepared to be shared with the study sites.

After consultations with participating facilities, it was decided that the RMC violations would be noted separately for three different stages of the birthing process or labor i.e. pre-delivery, during delivery, and post-delivery. Thus, three separate forms were made for the 1st stage, 2nd /3rd stage, and 4th stage observations.

Each participating site identified the labor room complex, an area in which women are admitted for normal vaginal deliveries. Women in different stages of labor (i.e. pre-delivery, during delivery and post-delivery) are present in this complex. In most high-income countries, women stay on the same bed/birthing suite from the time of admission during labor and until they are discharged after delivery. However, in most public health care setups in India, as in some other countries, women change beds and rooms during their hospitalization for delivery in different stages of labor. Thus, typically each woman is assigned four different beds - first bed before delivery when she is in labor pain, second bed during

delivery, third after delivery, and fourth in the ward till she is discharged for home. In the pre-delivery room, most women are in active labor, but no deliveries take place in this room. This is the period when a woman is kept under observation in the labor room premises. The delivery room is the room where most women have their delivery and a baby corner/resuscitation room is attached. The post-delivery room is the room where women with their newborns are shifted to remain under observation (for 2–4 hours) until shifted to the post-natal ward. Under the RMCI initiative, the observing officers were asked to use the revised study tool and visit all the rooms of the labor room complex, take note of the patient load, and then be present in the assigned room for recording observations.

Another meeting with TAG was held in August 2017, during which the TAG members reviewed the tool and approved it. The members were satisfied with the process of tool development and opined that the tool appears robust, and it will inform about the typology of disrespectful and abusive behaviors in the labor rooms settings of public health facilities in India.

The final study tool was employed in the observation study to document the typology of D&A in labor rooms, and to identify challenges, barriers, and facilitators in implementing RMC standards in the tertiary health care facilities of India.

Results

A new tool was developed to document RMC deficits in labor room settings by a non-participant observer. The corresponding verification criteria for each of the RMC standards were designed to measure the frequency of the violation and record the contextual data such as the observation period, number and cadre of the health care providers present at the time of observation, and comments explaining the RMC deficit. The cover page of the tool recorded facility details, observation period, timing, patient load, and numbers of health care providers, etc. An entry was made in the tool each time a deficit in RMC standard was observed and the frequency of the event was recorded. Besides each verification criterion, two variables and two indicators for contextual data were placed. The two variables included were: whether the corresponding criterion was observed or not, and; if yes, how many times it was reported. Observers were trained to employ the tally-marking method for recording the frequency. The two indicators included were details of the type of health care provider observed involved and comments explaining the RMC deficit. Along with this, a remarks section was placed for each RMC standard.

Deficits in RMC standards and the adapted verification criteria in the study tool

The seven deficits in RMC standards are:

- Physical harm or ill-treatment
- Withholding a patients' right to information, informed consent, and choice/preferences
- Gaps in confidentiality and privacy

- Gaps in dignity and respect
- Non-provision of equitable care, free of discrimination
- Abandonment or being left without care
- Detained or confined against will

The verification criteria, as outlined in the MCHIP tool, were adapted to local settings in which some of them were deleted, some were modified, and some new indicators were added besides frequency and type of provider involved. Here, we discuss the major changes that were made in the verification criteria as defined in the MCHIP tool, and how they were adapted to the Indian setting.

1. Physical harm or ill-treatment

In the first standard, a new criterion 'examined with lack of caring' was added which was defined as rough examination or rough handling of body parts including private parts giving pain, anxiety or discomfort to the patient. The verification criteria 'touches or demonstrates caring in a culturally appropriate way' was modified to 'touched in a sexually inappropriate manner'. 'Never physically restrains woman' was replaced by 'woman restricted to bed'. The indicator 'provides comfort/pain-relief as necessary' was made more explicit by adding three different criteria: 'verbal comfort not provided to the woman in pain/agony'; 'pain-relief medication not given when requested by the woman'; 'physical comfort not provided (e.g. raising head-end of the table, giving pillows, back massage), when requested or no mattress, pillow, bed sheet available' in pre-delivery and delivery case record forms, and 'physical comfort not provided to the woman or her baby, when she mentions she is in pain and when some comfort measure is requested (e.g. giving pillows, mattress, massage) or leaving the woman on the delivery bed or table where she cannot spread her legs or turn over and rest' in post-delivery case record forms.

2. Withholding patients' right to information, informed consent, and choice/preferences

The three criteria that were decided to be non-negotiable and stood as it is were: 'does not introduce self to the woman and her companion'; 'does not encourage woman and her companion to ask questions'; and 'does not respond to questions with promptness, politeness, and truthfulness'. The verification criteria 'explains what is being done and what to expect throughout labor and birth' was removed. Instead, three gaps assessment criteria were added each for pre-delivery, delivery, and post-delivery respectively: 'explanation not provided to the woman on how to take an appropriate position for examination'; 'explanation not provided to the woman on how to push or breathe or how to relax in between pains'; 'explanation not provided to the woman as to what is being done during examination.' Since it was reported by health providers during the national stakeholders' workshop that the birthing women were not provided with any information related to her care, three more criteria addressing this gap were subsequently added. These criteria are: 'information not given to the woman on findings of examination (e.g. PV findings, FHS)' in pre-delivery; 'information not given on sex or condition of the baby immediately after delivery' or 'information withheld till the expulsion of placenta' during delivery; and 'information not given on how to feed /burp the baby or take care of the baby' in post-delivery record forms. Also, three

additional criteria of 'adequate time not given for decision making regarding some procedure e.g. C-Section' in pre-delivery, and 'adequate time not given for decision making while inserting Postpartum intrauterine contraceptive device during-delivery and post-delivery were added.

3. Gaps in confidentiality and privacy

An important point that was raised in the national stakeholders' workshop was the ease of accessibility of undergraduate nursing and medical students to practice and observation in public hospital labor rooms in India without explicit prior explanation or permission on the presence of students. This leads to a breach of privacy of women, especially, when health providers and students observe or examine her without informing or taking her verbal consent. A criterion capturing this gap was added to the tool. Additionally, three more criteria were added: 'information shared with people not involved in care without taking the woman's permission'; 'woman's case records left in an area where they can be read by others not involved in care'; and 'asking history or commenting on patient's complaints in a loud voice such that other people/patients can hear (auditory privacy violated)'.

4. Gaps in dignity and respect

The criteria 'allow the woman and her companion to observe cultural practices as much as possible' was adapted to 'the woman or her companion not permitted to observe any cultural practices (which are not harmful to mother or baby e.g. offering prayers, massaging the abdomen, mother keeping hair open during labor, etc.)'. Several prevalent practices in Indian tertiary hospitals were discussed during the national stakeholders' workshop. Some of these practices are: two women on the same bed with another woman during labor, women lying on the floor on a mat or sheet during labor or after delivery, providing unclean bed linen (bedsheet, mackintosh, pillow, covering sheet) to women, not cleaning the bed promptly when dirty or soiled, etc. Also discussed was the difference between persuasion and threats; for example, staff may threaten the birthing women with disastrous consequences if their instructions are not obeyed for the woman or her baby. There have been instances when it was observed that belongings of birthing women are thrown out of the labor room. These factors were considered to conflict with the dignity and respect of the women and were captured in the verification criteria.

5. Non- provision of equitable care, free of discrimination

India is a country with diverse social and economic, education levels, castes, religions, and languages. The labor rooms in public hospitals admit women irrespective of their economic or social background. However, this diversity in the background of women may affect the provision of equitable care. For example, the patient's literacy level and language are important in the provision of care they get. If the patient has migrated from one region of the country to another, and the provider may be unable to comprehend or speak in a language that she understands, it may affect their ability to provide equitable care. This factor was adequately incorporated into a criterion.

6. Left without care

Two verification criteria were added: 'not examined on request/ turned back to the ward or sent back home despite pain or patient's request' and 'left alone or unattended (without the supervision of provider or birth companion)'.

7. Detained or confined against will

An important issue was raised regarding the practice of demanding informal payments by the labor room health care support staff usually involved in cleaning and transporting patients and supplies such as female and male ayahs and ward boys. These payments are termed as 'bakshish', or blessings or tips in colloquial language. Often women are not allowed to leave the premises or are not provided further services and, in some cases, verbally cursed, until and unless their family make these informal payments. However, it was admitted that these practices are done without any official approval, and despite being prohibited by the administrative authority. A verification criterion pertaining to this was added.

The indicator of 'any other violations, please specify' was added to all standards in pre-delivery, during delivery, and post-delivery case record forms. The total numbers of criteria were 47 each for pre-delivery and post-delivery, and 48 for during delivery. The criteria ranged from 3 to 10 indicators for each standard.

Contextual data

Contextual data for why the observed felt there was a deficit in the RMC standard was observed and collected to understand the gaps in quality care in a more comprehensive manner. In the initial draft, the contextual data indicators were patient load and timing of the observation. Along with this, a blank space was provided for comments across every verification criterion so that observers can mention any important information of the reported gap in the RMC criteria. Post the pilot testing of the study tool, along with patient load and timing of the observation, two more contextual indicators - the cadre of health personal on duty and circumstances explaining the RMC deficit - were collected for each criterion. In the final tool, most of the contextual data were in the form of codes.

Observation period

In the final tool, an observer is suggested to undertake one hour of observation at a time. This one hour of observation can be done either during the nurses' morning shift (6:00 a.m. – 2:00 p.m.), afternoon shift (2:00 p.m. – 10:00 p.m.), or the night shift (10:00 p.m. – 6:00 a.m.). The aim was to understand the variation in RMC deficits during different time-periods of the day. Observers were also asked to observe and record the RMC deficits in the labor room on Sundays and holidays to understand the relationship between workload and care provided on the said days. Besides, in the final tool, the observer can be stationed in any one of the three pre-defined areas – pre-delivery/1st stage room, delivery or 2nd /3rd stage room, and post-delivery or 4th stage room. The observers were given a list of specific shift timings and the corresponding predefined observation area. The purpose of this was to get consistent data across all the facilities and all shifts and days of the week so that it would allow for further comparative analysis. To protect the quality of data collected, intra-rater variability - the variability that may arise in

multiple observations of the same phenomenon by the same observer - was checked by restricting the number of hours of observation to two in one particular day. These two hours of observation were in separate shifts, and there was a gap of a minimum of one hour between the two observations. All observations were to be done in each facility in a maximum duration of one month.

Comments to explain circumstances

In the first draft, a blank space was provided in the tool for the observers to explain circumstances that possibly led to the RMC deficit. Post pilot testing, comments from various facilities were collated and listed, and a comment code sheet was prepared comprising of 18 different circumstances. Examples of some of these codes are: 'only one-way communication from provider to woman'; 'observed infrastructure does not allow'; 'refused to give informal payments for services'; 'observed discrimination based on caste, religion, education, disability, unwed mother, etc.'. In the final draft, observers were asked to use the codes rather than filling the qualitative information manually.

Health personnel

During the pilot testing, it was realized that it is important to know the cadre of health provider being observed on duty during the reported event of D&A. In the final draft, various designated health personnel including support staff posted in the labor room complexes were listed, and a uniform code list was prepared to be used while reporting RMC gaps in the verification criterion. The health personnel codes options included faculty, senior residents/residents/house surgeons, nurse (including tutor/supervisor/staff nurses), undergraduate medical interns, male attendant/ward boy, ayah or female ward attendant, ANM, ASHA or multipurpose health worker (female). The cadre involved in each violation was to be noted by their code, thus, maintaining individual provider confidentiality to prevent identification and only aggregated data would be shared.

Patient load

The total number of women present in the Labor room complex or patient load data was collected to determine the standard of care provided to the women, given the health infrastructure and services available at the facilities. In the initial draft, the observers were asked to fill in the following details for the duration of their shift: the number of beds in 1st stage room; the number of beds occupied in 1st stage room; the number of women with birth companions present in the 1st stage room; the number of women with birth companions present in the 2nd stage room; the number of times beverages and food were offered to any woman by staff (not including water); the number of women delivered during this shift; the number of doctors on duty; were any doctors absenting from duty (answer: yes/ no); the number of nurses on duty; were any nurses absenting from duty (answer: yes/ no); the number of supporting staff on duty, and were any supporting staff absenting from duty (answer: yes/no). In the final tool, the indicators required to be collected were reduced, and the following variables for the labor room complex were included: total number of rooms, the total number of beds, total number of beds occupied, total number of women, total number of women with birth companions, the total number of doctors present,

the total number of nurses present, the total number of supporting staff present, and the total number of students present.

This data was initially required for the whole labor room complex (including the pre-delivery, delivery, and post-delivery rooms) and the observed room (the specific room from where the observations were recorded). However, observers found it difficult to correctly assess this variable in the dynamic setting of the labor room complex over the hour-long observation period. It was observed that there is wide variation in what is perceived and understood as a labor room across settings; there is no standard system, and many labor room units have adapted older spaces to meet demand. Therefore, the final tool only collected information that was agreed to be commonly understood as a labor room and its facilities across settings. Authors suggest opting for more workable methods to collect this data in future research.

Remarks

In the final tool, a section on remarks was also added under each performance standard. In this section, observers can provide any additional observational or explanatory information that they perceive to be important and which has not been captured adequately in the given format of the tool. The observers were encouraged to record direct quotes, overheard in the local language, in the labor rooms in the context of RMC deficits. This would provide further insights on the deficits and, which could later be employed for further study.

Discussion

This study addresses the quality of maternal health care provided in facilities for institutional births in India, which is a key component of the National Health Mission. This is a health systems initiative to inform policy and program managers, clinicians, of the current status and to improve the quality of care during childbirth. A tool was prepared for collecting data on the typology of deficits in RMC meted out to the women delivering in urban health facilities (tertiary care hospitals). The MCHIP RMC standards and the verification criteria were adapted to the Indian settings using a four-stage process. Indicators for measuring RMC in the MCHIP tool were used as starting tools that were adapted to identify the typology of deficits in RMC during facility-based childbirth unique to labor room settings of Indian public hospitals. The tool was pilot tested by the study sites to establish the content validity of the tool and subject experts of the TAG approved the changes. The developed tool will help to improve the understanding of gaps in RMC in facility births by identifying key areas of D&A at the tertiary hospitals and the contextual information pertaining to them. This will aid in understanding the situations in which D&A take place, the health personal likely to be associated with them, and the relationship of D&A with other factors such as patient load, shift timings, etc.

Though the MCHIP tool provided the starting point for the development of the new tool, there are major differences to note between them. The new tool measures the gaps in RMC performance standards and their verification criteria whereas the MCHIP tool measured compliance with RMC standards. The MCHIP tool is longitudinal and is based on the observation of two women at a time by one observer throughout

labor and delivery. On the other hand, this study tool is more cross-sectional and allows observation of multiple women in a room across the same time period by one observer. The observer can be stationed in any one of the three pre-defined areas i.e. pre-delivery/1st stage room, delivery or 2nd / 3rd stage room and post-delivery or 4th stage room, and record the RMC deficits during the observation period. The indicators for contextual data of the facility were added to enrich the tool, and a column for remarks was added to gather more contextual information.

When the current study was ideated and proposed in 2017, there were very few studies reporting on D&A during facility births in India. However since then, many studies have been published and have reported on various aspects of RMC deficits such as geographical region; the target population - providers or women or both; facility-based or community-based; direct observation study or survey or both; and using qualitative, quantitative or mixed methods. This study is one of the first cross-sectional multi-centric studies on RMC in India that reports on the context of the provider and its plausible association with the RMC deficits. Another unique feature of this study is that it is the only pan-India study with representations from across the country. All other studies, to the best of our knowledge, are limited to either one city [14–17], one district [18, 19], or one state [9, 20–26].

The changes made to the MCHIP tool corresponded with the evidence found in the literature on RMC in India. For instance, numerous studies have documented physical and verbal abuse. Studies have also cited informal payments or bribes being demanded from birthing women and their families [16, 18, 27], crowded and chaotic delivery room [15, 26, 28], and migrants facing discrimination [16]. Discrimination has also been documented based on caste [16, 20, 21, 27], socioeconomic status [16, 24], and parity [22, 23]. An association of mistreatment and cadre of the providers [9, 18, 19], and mistreatment and time and day of delivery [19, 26] have been explored in some other studies as well.

Direct observation-based studies for assessing RMC in India are very limited (some of these studies are: [17, 21–23, 26]). The majority of studies employ direct interviews with birthing or post-delivery women to collect data while this study used only observational data. The method of direct observation has its strengths, limitations and concerns. One of the advantages of this method is that mistreatment can be under-reported in women-based self-report studies, than in direct observation studies [21, 29, 30].

D&A during maternity care services at health care facilities are being normalized by women and providers alike [31, 32]. The normalization among providers was a major concern in this study. Firstly, during the National Stakeholders' workshop, the normalization of D&A among providers was observed, which was then provoked by role-plays and a theatre workshop. Observers were rigorously trained (including an on-site visit to local hospitals) to enable them to understand the phenomena of normalization of D&A that can lead to under-reporting of RMC deficits

Another major concern in observation-based studies major is the Hawthorne effect - according to which the behavior of the health personnel might change in the presence of an observer [33]. To cater this, observers were suggested to familiarize themselves with the staff in the labor room complex, before starting the actual observations, which would help in their being accepted as a part of a labor room. They

were also instructed to avoid behaviors that draw the attention of the staff to themselves. However, keeping this up across shifts and many days is unlikely. Though it is expected that this training of observers along with the normalization of D&A among all levels and cadres of health personnel in the facilities would have led to the reduction in the Hawthorne effect, however, it cannot be claimed to be altogether eliminated, thus, forming a limitation of the study.

Inter-rater variability and intra-rater variability are also important concerns in observation-based studies [34]. Inter-rater/inter-observer reliability was assured by the rigorous nodal officers' training that followed detailed training protocol, including practice sessions, for the unbiased recording of observations, and by issuing instruction sheets explaining the criteria and other terminologies. The study tool was pilot tested and clarifications were provided on email, phone calls, and skype when needed. The number of hours of observation was limited on a particular day to check intra-rater variability.

This study is important because the RMC tool adapted for measuring D&A and tested across many hospitals can be used in the future by facilities for gauging RMC deficits and to plan interventions and measure changes in quality of care and its impact of outcomes of mothers and newborns. The tool can also be used for teaching or training purposes. Quality improvement initiatives such as developing educational and counselling material for providers, encouraging sites to establish a feedback and grievance redressal mechanism, creating awareness on RMC among birthing women, should be undertaken to facilitate adherence to RMC standards within the facilities.

Conclusion

The SDGs have provided global recognition and an impetus to improve the quality of maternity care services. The first step for designing targeted interventions and policies for improving the quality of care is to develop measurement tools that capture the nature and magnitude of RMC deficits. In this study, a comprehensive typology of D&A was created for the Indian context, in a collaborative approach involving various experts and practitioners, which can collect data on RMC deficits and the context of those deficits from the providers' side like health personnel involved in deficits, time of the shift, etc. The various prevalent practices of D&A in India were accommodated in the tool. The tool was tested in various tertiary care facilities in India. After feedback from the facilities, the tool was modified and was approved for content validity by the subject experts of the Technical Advisory Group.

This tool was created to generate and provide researchers, health systems' administrators, providers and women's health advocates with an insight into RMC and with the clear purpose of quality improvement. Thus, it can be used to introduce interventions to improve the RMC deficits in the facilities, bringing the much-needed change on the ground. This tool can continue to evolve with further research. Separate tools can also be prepared for the antenatal or postnatal period that has not been attempted in this study.

Abbreviations

ICMR: Indian Council of Medical Research; MCHIP: Maternal and Child Health Integrated Program; RMC: Respectful and Maternity Care; SDG: Sustainable Development Goal; WHO: World Health Organization

Declarations

Ethics approval and consent to participate

Administrative and Technical approval for the study was obtained from ICMR headquarters at New Delhi. Ethical approvals were taken from the local Institutional Ethics Committees of each participating facility, all located in India, from where the data was collected. Individual patient data was not collected.

Interviews of health care providers, in the later part of the study, were conducted after written informed consent.

Names of Institutional Ethics committees are:

1. Institute Ethics Committee, All India Institute of Medical Sciences, New Delhi
2. Guru Teg Bahadur Hospital Ethics Committee, New Delhi
3. Institutional Ethical Committee, Kasturba Hospital, New Delhi
4. Ethics Committee for Human Research, Lady Hardinge Medical College & Associated Hospitals, New Delhi
5. Institutional Ethics Committee, Maulana Azad Medical College and Associate Hospital, New Delhi
6. The Institutional Ethics Committee, Institute of Obstetrics & Gynaecology, Chennai
7. Institutional Ethics Committee, Madras Medical College, Chennai
8. Institutional Ethics Committee, Government Stanley Medical College & Hospitals, Chennai
9. Institutional Ethics Committee, Govt. Kilpauk Medical College, Chennai
10. Institutional Ethics Committee, Postgraduate Institute of Medical Education and Research, Chandigarh
11. Institutional Ethics Committee (Human Studies), Jawaharlal Institute of Postgraduate Medical Education & Research, Puducherry
12. Institutional Ethics Committee, R.G. Kar Medical College, Kolkata
13. Institutional Ethics Committee for Human Research (IECHR), Medical College & SSG Hospital, Baroda
14. Office of the Ethics Committee, S.M.S. Medical College and Attached Hospitals, Jaipur
15. Ethics Committee; GSVM Medical College, Kanpur
16. Institutional Ethics Committee, King George's Medical University, Lucknow
17. Ethics Committee, KEM Hospital Research Centre, Pune
18. Institutional Ethics Committee, S.C.B. Medical College, Cuttack
19. Institutional Ethics Committee, LLRM Medical College, Meerut
20. Institutional Ethics Committee (H), Assam Medical College, Dibrugarh

Consent to publish

Not applicable.

Availability of data and materials

The tool developed and other study material are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests. None is directly employed by the hospitals participating in this study.

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Author's contributions

SS designed the study and the study tools, processed approvals, developed partnerships with participating sites and led the study; AG, LCV, MM, TR contributed to study tool development, study implementation, and monitoring; MM made a substantial contribution to the data analysis; RG collected and cleaned data, analyzed data, assisted in drafting the manuscript; DR drafted the manuscript. All authors contributed in the manuscript revisions, and have read and approved the final manuscript.

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Authors' information

In the majority of duration of this project, SS was serving as Scientist 'F' and RG was serving as Scientist 'B' at Division of Reproductive Biology, Maternal Health and Child Health, Indian Council of Medical Research, New Delhi, India.

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