Improving Respectful Maternity Care in Ethiopia

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Abbreviations

BEmONC	Basic emergency obstetric and newborn care
CRR	Centre for Reproductive Rights
EmONC	Emergency obstetric and newborn care
EOS	Ethiopian Occupational Standard
MCSP	Maternal and Child Survival Program
MWH	Maternity waiting home
RMNCH	Reproductive, maternal, newborn, and child health
SHRH	Strengthening Human Resources for Health
USAID	United States Agency for International Development
WHO	World Health Organization
WRA	White Ribbon Alliance

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CHAPTER 1

Introduction

Introduction

1.1 Country and Health Care System Context

Ethiopia is the oldest independent country in the horn of Africa with an estimated population of 100,829,000 in 2020. It is the second most populous and the sixth biggest country in Africa with 1,100,000 square kilometers area divided into 10 semi-autonomous administrative regions and two city administrations [1]. Regional administration units are subdivided into zonal, district (woreda) and kebele administrations. The kebele is the lowest administrative structure.

Figure 1. Regional map of Ethiopia

Ethiopia has registered an impressively improved performance in overall child survival, with a reduction in the under-five mortality rate, from 166 per 1,000 live births in 2000 to 67 per 1,000 live births in 2016. Similarly, infant mortality rate declined from 97 per 1,000 live births in 2000 to 48 per 1,000 live births in 2016 [2, 3]. However, the reduction in maternal mortality between 2000 and 2016 was not sufficient (from 871 to 412 per 100,000 live births) to reach the fifth millennium development goal, targeted at a 75% reduction [3]. In 2016 one

out of 55 Ethiopian women had a chance of maternal death in her lifetime compared to one in 39 of her African and one in 190 of her global counterparts [4].

As part of its health sector development plan, the Ministry of Health has undertaken an accelerated expansion of primary health care facilities since 2003. In a decade, the number of health posts and health centers in Ethiopia grew six-fold to reach 3,724 health centers and 17,187 health posts in 2017 [5, 6].

Institutional childbirth service with a skilled health care provider is an evidence-based intervention for reducing maternal and newborn mortality [7]. Reasons for underutilization of skilled childbirth include limited access to skilled care, poor quality of service, lack of decision-making ability of women, fear of mistreatment, and low level of awareness on the benefits [8]. In Ethiopia, utilization of antenatal care, childbirth, and family planning services improved between 2000 and 2016. In 2016, only 62% women received any antenatal care from a skilled health care provider. By 2016, only 28% of births occurred with a skilled provider, 26% of births occurred at a facility, and use of modern contraceptives had risen from 6% in 2000 to 36% [3]. Despite these improvements in maternal and newborn care service access, the utilization of service is still low compared to other sub-Saharan countries [9].

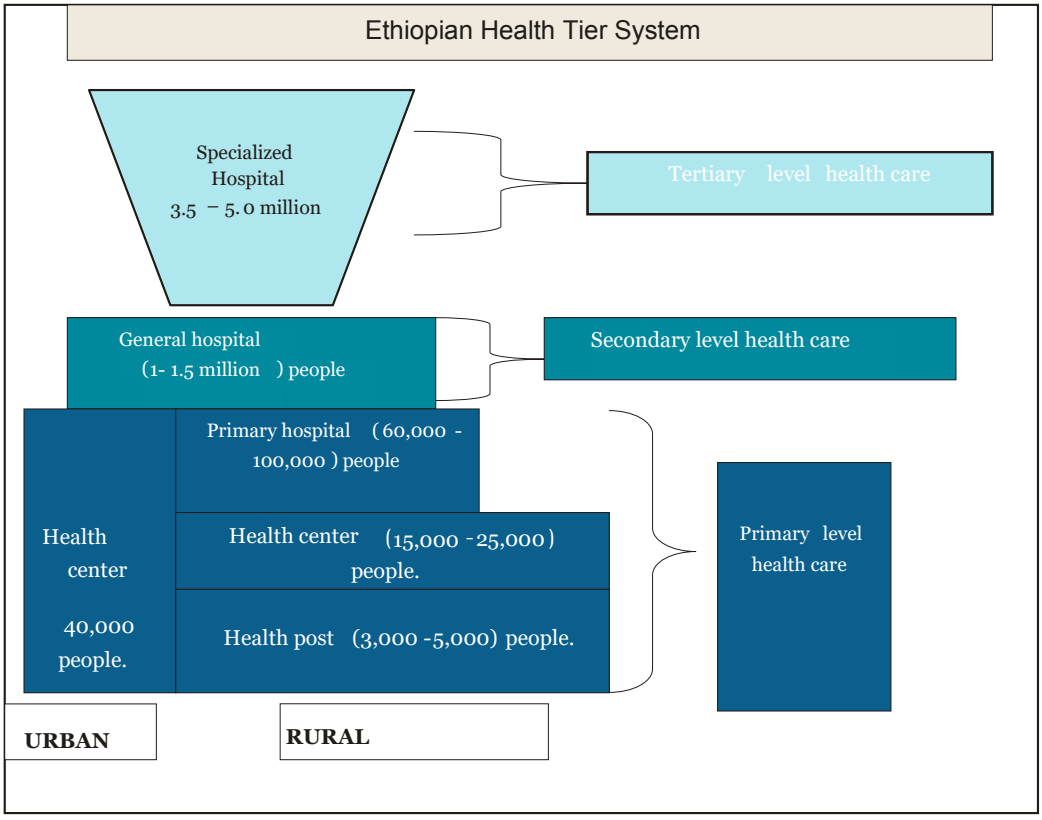
1.2 Health Care Delivery in Ethiopia

In Ethiopia, public health care delivery is structured into a three-tire system: primary, secondary (general hospitals), and tertiary (specialized hospitals) levels of care. Health centers and primary hospitals are included in the primary level. Health centers provide basic curative and preventive services that include antenatal care, childbirth, postnatal, family planning ,and immunization services for an average of 25,000 population, whereas primary hospitals provide emergency surgical services including cesarean section in addition to all services provided by health centers for a population of approximately 100,000. Primary hospitals serve as a referral center for an average of four health centers in their catchment areas.

General hospitals serve as referral centers for an average of 10 primary hospitals; specialized hospitals serve as referral centers for five general hospitals[10]. (Fig. 2)

The private sector also provides maternal and newborn health care, mostly in urban areas. In 2016, 142 (3.7%) private health facilities managed only 3% of institutional births [11].

Figure 2. Ethiopian Health Tier System (source: Health Transformation Plan 2015-2020)



1.3 Why Respectful Maternity Care?

Childbirth is a rite of passage for women and a special moment for families across different cultures in the world [12]. Unfortunately, many women across the world experience mistreatment during childbirth related to health care providers behaviors and systematic institutional failures, including using insulting language, slapping and hitting women, performing examinations without consent and privacy, abandoning women during labor, not allowing birth companions, not allowing women to choose their birthing positions, and detaining women and their newborns for not paying service fees [13]. High levels of mistreatment of women and limited emphasis on the provision of compassionate, respectful care are the major reasons that discourage women from visiting health facilities for childbirth service [14].

Providing compassionate, respectful care is a basis of health workers code of practice and professional guideline of health care providers. The Ethiopia, Ministry of Health places a greater emphasis on developing a compassionate respectful and caring health care professional as its key strategic agenda in its 2015–2020 plan [10]. The policy recognizes that compassion should be the foundation of a health care system that provides caring, safe, and high-quality care. Compassionate care is described as holistic, non-judgmental, empathetic, respectful, and empowering [10].

In all the movements focused on respectful care and WHO guidelines, it is acknowledged that eliminating mistreatment is necessary but not sufficient condition to ensure respectful maternity care. The definition of respectful maternity care encompasses more than eliminating mistreatment. WHO defines respectful maternity care as “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” and recommended for all women during intrapartum care[15]. Childbirth is a special event for women and families hence, it needs a concerted effort from all stakeholders to ensure that women receive care that is responsive to their needs and preferences and a positive childbirth experience. We have included two stories of women who participated in in-depth interviews highlighting their institutional childbirth experiences.

1.4 History of Respectful Maternity Care

Eradicating disrespectful care has been a primary focus for most discussions focused on improving quality of maternity care. Respectful maternity care has evolved through different stages in the past two decades; the terminologies used to describe respectful maternity care also changed across time. The problem of mistreatment of women was happening for many

Story 1: Alemitu's childbirth experience (extracted from in-depth interview in Addis Ababa, 2014)

Alemitu, a 20-years-old woman from an urban slam in Addis Ababa recalled her childbirth experience with a feeling of sorrow and depression. At the onset of her labor, she explained, Alemitu's husband and mother took her to the nearest public health center where she was received in the antenatal care service.

While in the facility, a midwife yelled at her for having not attended the four required antenatal care visits as pregnant women are encouraged to do. Alemitu also recalled how she was left unsupported and unattended to by her family the entire time she was in the health center because of the facility's policy of not allowing any non-health care personnel in the labor and delivery rooms. Alemitu explained that she was in so much labor pain and was crying but nobody was there to help and assist her. After about two or three hours of abandonment and lonely agonies, a midwife came to check on her and told her that she was experiencing labor complications and that she needed to be referred to the hospital.

However, Alemitu said, "The transfer process to the hospital was smooth; the ambulance took me and my family to the referral hospital, where we were received and given good reception. Nevertheless, in that hospital, there was lack of privacy, I was sharing a room with six other women and the same policy was applicable there; the hospital did not allow companions in the labor room as well. I could see my husband and mother outside anxiously waiting."

Overall, Alemitu was not satisfied with the labor examinations she was given. She reported not being happy with the fact of being left in the hands of medical residents to solely perform all her labor monitoring. They would conduct her vaginal examinations with no privacy considerations in the open labor room. They also did not provide her with explanations about the procedures they were conducting or requested her permission to do so, "residents felt they had rights do whatever they wanted because we were poor and could not afford to attend childbirth service at private hospitals."

In addition to health services, Alemitu also was not pleased with amenities at the hospital. She said, "The bathrooms were not clean, and there was no running water. The delivery couch was not convenient for laboring women as well; It was so high and hence difficult to climb and there were no stepping stools provided to assist the climbing."

Alemitu felt even more degraded and helpless when she recalled her communications with midwives attending her childbirth. She said that during labor and childbirth, "They were very rude and mocked me when I was crying due to labor pain. One of them even said I should have thought about the pain when I was having sex." She felt that she was being punished for getting pregnant and coming to give birth in the hospital.

Alemitu was asked if she reported these issues and problems she encountered and she responded, "I was scared about what could happen to me or my baby if I reported anything. I also had no trust on the

decades. One of the earliest documented accounts in which human rights advocates and women voiced their concerns on the inhumane way women were treated in childbirth was published as early as the 1950s in the U.S. in an article titled "Cruelty of Maternity Wards" [16]. Some of the reported cruelties included providing a combination of morphine and scopolamine to birthing women, which produced deep sedation often followed by restlessness and possible delusions; and putting handcuffs and shackles on the feet and hands of women to

prevent them from falling out of bed, which usually resulted in bruises on the bodies and injuries to wrists of postpartum women. Injuries resulting from routine use of forceps deliveries in unconscious women was also reported[16].

During the 1990s, a widespread inhumane treatment of women during childbirth, a trend of over medicalization of childbirth and increase in unindicated medical practices, primarily cesarean sections, were reported in Latin American countries. Terms used to represent the way women were treated include gender-based violence in childbirth and abortion, cruelty in childbirth, violence in childbirth, disrespect and abuse, inhumane/dehumanized assistance, human rights violations of women in childbirth, disrespect and maltreatment during childbirth [17, 18]. A movement to humanize childbirth was initiated by human rights advocates in Latin America in 2000 [19]. Humanizing childbirth was aimed at improving the trust between patients, providers, and the health system by recognizing the need of each patient as opposed to “a group of symptoms” [20]. In Latin America countries, "obstetric violence” was the commonly used term but advocacy groups prefer to use “humanization of childbirth” to minimize a possible resistance from health care providers [17, 18]. In 2000, a humanization of birth conference was held in Brazil with 2,000 participants; it set the groundwork for the definition of humanization of childbirth[17].

In Africa, mistreatment of women was systematically documented in 2007 in Kenya with the work of the Kenyan Federation of Women Lawyers (FIDA) with the Centre for Reproductive Rights [21]. Consequently, the Heshima project (which means respect in Swahili) was designed to assess the extent and causes of mistreatment and design and implement interventions aimed at reducing mistreatment and promoting respectful care. Several publications resulted from the project [22-27].

The 2010 landscape analysis of Bowser and Hill, “Exploring Evidence for Disrespect and Abuse for Facility-based Childbirth,” was a comprehensive report that helped to develop seven major categories of disrespect and abuse of women during labor and childbirth [28]. The development of the categories was based on published and unpublished reports and expert discussions. The seven categories of disrespect and abuse are: physical abuse, non-consented clinical care, non-confidential care, non-dignified care (including verbal abuse), discrimination based on specific patient attributes, abandonment or denial of care, and detention in facilities [28].

In 2011, drawing on evidence from the landscape analysis, the White Ribbon Alliance (WRA) initiated a global movement to promote respectful maternity care. The WRA assembled a multi-stakeholder group and developed a charter on the universal rights of childbearing women by drawing on extracts from established human rights instruments and linking them to the seven dimensions of disrespect and abuse of women [29]. The seven categories of disrespect and abuse and their corresponding rights are listed in Table 1.

Table 1. Categories of disrespect and abuse and corresponding rights

Category of Disrespect and Abuse	Corresponding Right
1. Physical abuse	Freedom from harm and ill treatment
2. Non-consented care	Right to information, informed consent and refusal, and respect for choices and preferences, including companionship during maternity care
3. Non-confidential care	Confidentiality, privacy
4. Non-dignified care (including verbal abuse)	Dignity, respect
5. Discrimination based on specific attributes	Equality, freedom from discrimination, equitable care
6. Abandonment or denial of care	Right to timely health care and to the highest attainable level of health
7. Detention in facilities	Liberty, autonomy, self-determination, and freedom from coercion

In 2014, WHO issued a statement on the prevention and elimination of disrespect and abuse during facility-based childbirth. It calls on government and donors to promote research on disrespect and abuse and to support the design and implementation of programs focused on quality of care that include respectful maternity care as an integral aspect of care among other recommendations[30]. In line with this, the WHO also outlined a framework for promotion and implementation of respectful maternity care as a component of a broader quality of care approach in its framework for quality of care for maternal and child health [15]. The WHO quality of care framework places equal emphasis on provision of care and experience of care[15].

In 2015, Bohren and colleagues conducted a comprehensive systematic review of recent quantitative and qualitative literature; they identified seven typologies of mistreatment of women during childbirth [13]. The seven typologies were: (1) physical abuse, (2) sexual abuse, (3) verbal abuse, (4) stigma and discrimination, (5) failure to meet professional standards of care, (6) poor rapport between women and providers, and (7) health system conditions and constraints. Bohren's and colleagues' term "mistreatment of women in childbirth" is the most used term in recent literature.

1.5 Implementation Programs Used for This Thesis

The studies used in this thesis were generated from two programs designed to reduce maternal and newborn morbidity and mortality. The programs—The Maternal and Child Survival Program (MCSP) and Strengthening Human Resources for Health (SHRH) projects—were implemented by Jhpiego with funding from the United States Agency for International Development (USAID).

MCSP was a five-year (2010-2014) implementation mechanism for providing technical leadership nationally and improving reproductive, maternal, newborn, and child health (RMNCH) services in Ethiopia. The goal in Ethiopia was to increase access to and uptake and

Story 2: Asha's Childbirth experience (extracted from in-depth interview of women in Oromiya)

Asha Ahmed is a 32-years-old woman from rural Oromiya region with five previous births at home. For her most recent pregnancy, she attended two antenatal care visits at the health post in her village and the other two consultations from the health center 15 kilometers away from her village. Asha explained that the health extension workers convinced her about the benefit of institutional childbirth although her mother and mothers-in-law were not convinced about the idea. On the night labor started, her husband called for a "bajaj" (a three-wheel vehicle) and took her to the nearest health center. The reception at health center was not what she anticipated, only one midwife was on duty but there were three women in labor. The young midwife was overwhelmed by the workload, but she still did not allow birth companions in labor room. Asha's mother and husband were waiting anxiously outside. Asha recalls her conversation with the midwife; "she asked me how many children I had before and I told her that I had five before and she asked me why I didn't you use family planning, she ridiculed me in front of other women. She said you are giving birth every year and she was busy the whole day because of women like me. After some time in the health center, the midwife told me to go to the referral hospital in the next town with the health center ambulance."

Asha continued, "In the hospital, we were intimidated starting from the cleaners and guards until we left the hospital; most of the health workers were rude. My mother and I were passing by the corridor to the labor room where the cleaner was washing the floor. The cleaner shouted at us; she said bad things about us because we passed on the floor she cleaned."

Asha explained, the health professional that received her at the hospital examined her and said she was ok and told her that midwives at health center should have assisted her. The health worker said these ignorant health workers at health center were referring normal cases and creating burden on the hospital. The health professional complained and asked me to wait in the labor room. Asha felt that health facilities should discuss on how to work among themselves, it was not fair to complain to patients.

When asked about her experience in the hospital, Asha said "the laboring room in the hospital had no privacy and I was not comfortable to open my legs in front of everyone, but I had no other option." She continued, "the examinations were repetitive, and no information was given about what is going to happen next or even they did not tell me what they are doing on my body. They just instruct you to open your legs and put their fingers. They see birthing women not as their client rather as a burden on them. However, you also find some good health workers who were polite and supportive. While I was in labor room, there was one nurse who was encouraging women to walk around, to take light food and fluids, and showing us how to breath "

Asha said that she witnessed the worst treatment in the childbirth room, "I was so weak and not able to push. There was an older midwife that was feared by everybody. They said she is very experienced and technically skilled, but she was also tough and harsh on women. She yelled at every women and insults everyone." Asha continued, "She slapped me once when I was not able to push and told me that she was doing that for my own sake. I was shocked with what I experienced but I was happy to finally give birth to a healthy baby girl and I did not even try to file a complaint about the mistreatment. Probably the midwife was right, she had no bad intention of hurting people, she was doing it to help me deliver a healthy child, but she could have done it differently. I wish the management of the hospital would train their staff on how to deal with women."

coverage of quality RMNCH services and thus support the Government of Ethiopia in achieving its maternal and newborn mortality reduction goals. The project supported expanded access to RMNCH services, explored ways to support hardest-to-reach communities, and built capacity of national and regional structures to update and expand coverage of RMNCH services. The data used for Chapter 3 and 4 were generated from the studies designed and conducted under this project.

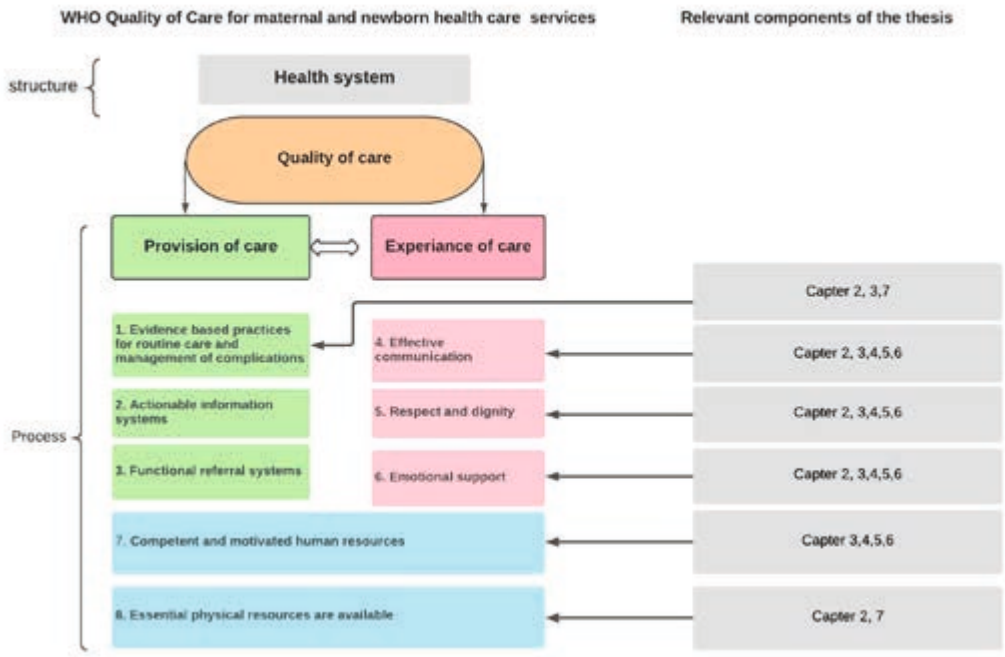
The SHRH project was a six-year (2012–2019) health systems strengthening project to build local capacity for the development of systems to manage human resources for health, improve the quality of health worker education and training, and develop the regulatory capacity required to support accreditation, licensure, and continuing professional development of the

health workforce. In line with the project objective of promoting program learning and research in the area of HRH, a study focused on respectful maternity care was designed. Chapter 5 and 6 report on this study, which was conducted in midwifery departments of higher education institutions supported by the project.
Chapter 7 uses secondary data from the 2016 Ethiopia Emergency Obstetric and Newborn Care national study implemented by Ethiopian Public Health Institute in collaboration with Averting Maternal Mortality Disability and Death [11].

1.6 Conceptual Framework

The conceptual framework for this thesis is adopted from the WHO quality of maternal and child health framework as it addresses key components of respectful maternity care [31]. The framework stresses the importance of considering how care is provided by health workers within the health care system and how care is experienced by women and their families. The framework places equal emphasis on provision of care and experience of care [31]. WHO recommends providing respectful maternity care in accordance with a rights-based approach. It also emphasizes that providing interventions that reduce mistreatment of women should be encouraged to improve experience of women in labor and childbirth [31].
The framework as further explained in the 2018 "WHO recommendation on intrapartum care for a positive childbirth experience," extended definition of quality of care beyond prevention of morbidity and mortality to include a woman-centered, rights-based approach for ensuring the health and well-being of women [15]
In the provision of care, providing respectful maternity care throughout labor and childbirth, providing pain relief for pregnant women requesting it, encouraging oral fluid and food intake during labor for low-risk women, was recommended. It also recommended avoiding unnecessary practices that are not evidence based, including routine perineal shaving prior to giving vaginal birth and routine vaginal cleansing with chlorhexidine during labor.
Recommendations for the experience of care included, effective¸ culturally acceptable, communications between women and health care providers, providing information about each stage of labor, encouraging mobility and upright position during labor, and encouraging birthing position of choice.
In terms of human resources, WHO recommended encouraging midwife-led continuity-of-care models. Regarding physical resources, it includes providing curtains to ensure privacy.
The framework also acknowledges structure, process, and outcome as distinct features to improve respectful maternity care. Structure involves health systems-level issues including policy and procedures. Process involves provision of care and experience of care, including human and physical resources.
The six studies included in this thesis focus on six of the eight quality of care elements listed under process in the framework. In the provision of care, evidence-based practices were included but the other two aspects (functional information system and referral system) were not included in our studies. In the experience of care, all three elements (effective communication, respect and dignity, and emotional support) are included as components of respectful maternity care. Physical and human resources related issues are also described in the thesis.

Figure 3. WHO Quality of Care framework and relevant sections in the thesis



1.7 Aim and Research Questions

The overall objective of my thesis is to identify components of respectful maternity care and mistreatment of women from the perspectives of women and providers, assess the levels of both the provision of respectful maternity care and mistreatment of women in Ethiopia, and identify individual and institutional factors that contribute to the reported respectful maternity care and mistreatment of women. My goal is to improve the quality of maternity care services in Ethiopia. This objective aligns with WHO's quality of care framework for maternal and newborn health (Fig.3).

The research questions were:

A. *What are the components of respectful maternity care and mistreatment of women?* This research question is addressed by three papers. **Chapter 2** describes the development of a tool to measure respectful maternity care and assesses components of respectful maternity care from the perspective of women who used childbirth and postnatal care services in public health facilities. **Chapter 5** describes the development of a scale that assesses mistreatment appraisal from providers' perspective. **Chapter 7** assesses components of institutional-level mistreatment of women in private and public health facilities of Ethiopia.

B. *What are the levels of respectful maternity care and mistreatment of women in health facilities (hospitals and health centers) in Ethiopia?* This research question is addressed by three papers. **Chapter 3** assesses the prevalence of respectful maternity care and mistreatment of women in public health facilities (hospitals and health centers) using a structured observation of provider-women interaction during labor and childbirth. **Chapter 4** assesses the prevalence

of mistreatment of women during labor and childbirth reported by women. **Chapter 7** assesses the levels of institutional-level respectful maternity care and its components in all health facilities in Ethiopia.

C. *What are the factors affecting provision of respectful maternity care and experience of mistreatment of women in health facilities in Ethiopia?* This research question is addressed by four papers. **Chapter 3** assesses the factors affecting provision of respectful maternity care observed during structured observation of women and provider interaction. **Chapter 4** assesses factors that may contribute to mistreatment of women reported by women during labor and childbirth. **Chapter 5 and 6** assesses perspective of providers before joining the labor force (graduating midwifery students). **Chapter 5** assesses gender differences in mistreatment appraisal and the possible mediating roles of stress and self-esteem. **Chapter 6** assesses factors that affect positive appraisal of mistreatment of women. **Chapter 7** assesses factors that affect availability of institutional-level respectful maternity care index.

The specific research questions and methodologies used to address the questions are listed below.

Table 2. Research questions and methodologies

Thesis chapter	Methodology
2	A facility-based cross-sectional study design was used. An inductive item generation process that included a literature review and in-depth interviews with women visiting facilities for childbirth, followed by an expert review, assured face validity and content validity of the tool. The final tool was administered to 509 postpartum women in health facilities. An exploratory factor analysis used principal component analysis with an oblique rotation method.
3	A cross-sectional study design was used. Trained external observers assessed care provided to 240 women in 28 health centers and hospitals during labor and childbirth using structured observation checklists. The outcome variable, providers' respectful maternity care performance, was measured by nine behavioral descriptors. A mean score of providers' respectful maternity care performance and the adjusted multi-level model regression coefficients were used to determine the association with a quality improvement program and other facility and provider characteristics.
4	A two-stage cross-sectional sampling design was used to select institutions and women in four regions of Ethiopia. Quantitative data were collected from postpartum women. Mistreatment was measured using four domains: (1) physical abuse, (2) verbal abuse, (3) failure to meet professional standards of care, and (4) poor rapport between women and providers. Percentages of mistreatment and odds ratios for the association between its presence and institutional and socio demographic characteristics of women were calculated using bivariate and multivariable logistic regression modeling.

5	A cross-sectional design was used to identify risk factors for positive appraisal of mistreatment during childbirth. We asked 391 final-year midwifery students to complete a paper-and-pen questionnaire assessing background characteristics, prior observation of mistreatment during education, self-esteem, stress, and mistreatment appraisal. A multivariable linear regression was conducted.
6	A tool (i.e., a quantitative scale) to assess mistreatment appraisal from a provider's perspective, on the basis of scientific literature and the review of seven experts regarding its relevance and comprehensiveness. A mistreatment appraisal scale was administered to 390 final-year midwifery students to assess their mistreatment appraisal, self-esteem (using the Rosenberg Self-Esteem Scale), stress (using the Perceived Stress Scale), and various background characteristics. A multi-level regression analysis was conducted.
7	A cross-sectional study design was used on a census of 3,804 health facilities in Ethiopia offering childbirth services in the 12 months preceding the survey in 2016. Principal component analysis was used to identify components of institutional-level respectful maternity care. Availability of institutional-level respectful maternity care index was computed as availability of all the nine elements outlined in the dichotomous items. Logistic regression analysis was used to identify factors associated with availability of institutional-level respectful maternity care.

1.8 Thesis Organization

This thesis is comprised of eight chapters:

Chapter 2 explores the definition of respectful maternity care for women who use childbirth services in public health facilities in Ethiopia. It also explored the various components of respectful maternity care and validates a scale developed to measure women's perceptions of respectful maternity care: "Development of a tool to measure women's perception of respectful maternity care in public health facilities" **(Paper 1).**

Chapter 3 assesses the prevalence of respectful maternity care and mistreatment of women observed during provider-women interaction during childbirth. We also explored factors associated with the observed respectful maternity care and mistreatment: "Respectful maternity care in Ethiopian public health facilities" **(Paper 2).**

Chapter 4 examines the prevalence of self-reported mistreatment of women in health facilities of Ethiopia and factors associated with the reported levels of mistreatment: "Mistreatment of women in public health facilities of Ethiopia" **(Paper 3).**

Chapter 5 describes the development of a tool to measure appraisal of mistreatment from health workers' perspective and explores the role of gender in mistreatment appraisal and the possible mediating roles of stress and self-esteem among graduating midwifery students: "Development and use of a scale to assess gender differences in appraisal of mistreatment during childbirth among Ethiopian midwifery students" **(Paper 4).**

Chapter 6 assesses factors that affect positive appraisal of mistreatment of women among graduating midwifery students: "Risk factors for positive appraisal of mistreatment during childbirth among Ethiopian midwifery students" **(Paper 5).**

Chapter 7 explores prevalence of institutional-level respectful maternity care index components and examines factors associated with the reported institutional-level respectful maternity care index: "Status of institutional-level respectful maternity care: results from the national Ethiopia EmONC assessment" **(Paper 6).**

In Chapter 8, I discuss the findings from these papers, explore policy implications, and provide conclusions and recommendations for policy makers in Ethiopia and other low- and middle-income countries.

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CHAPTER 2

Components of Respectful Maternity care

Development of a tool to measure women's perception of respectful maternity care in public health facilities
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Development of a tool to measure women's perception of respectful maternity care in public health facilities

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Abstract

Background: Maternal mortality continues to be the biggest challenge facing Ethiopia and other developing countries. Although progress has been made in making maternity services available closer to the community, the rate of deliveries attended by skilled birth attendants has remained very low. Absence of respectful maternity care (RMC) is believed to have contributed to low utilization of facility delivery services. This study outlines steps undertaken to construct and validate a scale that measures women's perception of respectful maternity care provided in health facilities.

Methods: An inductive item generation process that included a literature review and in-depth interviews with labor and delivery clients, followed by an expert review, assured face validity and content validity of the tool. A draft RMC scale with 37 items and two additional measures of global satisfaction items, measured on a five-point Likert scale, were administered to a developmental sample of 509 postnatal care clients visiting facilities immediately after childbirth to 7 weeks postpartum. IBM SPSS 20 was used to perform exploratory factor analysis (EFA) using principal component analysis (PCA) with oblique rotation method.

Results: The final RMC scale with 15 items was loaded on four components. The extracted components were labeled as friendly care, abuse-free care, timely care, and discrimination-free care. The final RMC scale correlated strongly with the global satisfaction measures, indicating criterion-related validity of the scale. Content-related validity was assured by the process of item generation. Construct validity of the RMC scale was confirmed by high average factor loading of the four components ranging from 0.76 to 0.82 and low correlation between the components. Stability of the scale was confirmed by running PCA in a randomly selected split sample of 320 samples from the validation sample. The final 15-item scale showed an adequate reliability with $\alpha = 0.845$.

Conclusion: The 15-item RMC scale is a valid and reliable measure of women's perception of RMC received in health facilities. We recommend that health facilities use the RMC scale in urban public health facilities and that other researchers conduct further exploratory and confirmatory factor analysis in different geographic areas.

Keywords: Respectful Maternity Care (RMC), Disrespect and Abuse (D&A), Scale

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Background

In 2013 about 289,000 women died, worldwide, due to complications in pregnancy and childbirth. Although maternal death has declined 45 % from the 1990 estimate, the number of deaths per year is still unacceptably high [1]. Maternal mortality, the death of a woman while pregnant or within 42 days of termination of pregnancy, continues to be the most formidable challenge for Ethiopia [2]. Ethiopia was one of the 10 high burden countries that accounted for 58 % of global maternal deaths from 1990 to 2013 [1]. The maternal mortality ratio for Ethiopia in 2011 was 676 per 100,000 live births, and the proportion of deliveries assisted by a skilled birth attendant was 10 % [2].

Reasons for low utilization of services at health institutions include 1) cultural barriers, 2) provider-client interpersonal barriers, 3) economic barriers, and 4) geographic barriers [3]. Similarly, a literature review conducted by the Maternal and Child Health Integrated Program (MCHIP) in Ethiopia showed that women's perceptions about health facilities' cleanliness, equipment quality or availability, provider competence, or behavior can be barriers to institutional delivery utilization. Some communities express dissatisfaction with providers' medical advice or management [4].

A woman's experience of care in childbirth is an important determinant of her future decisions related to seeking health care from health facilities. Women's negative encounters with health workers during delivery can result in long-lasting damage and emotional trauma [5].

Generally, there is lack of agreement on a consistent definition of respectful maternity care. Even the term respectful maternity care has been used synonymously with women-friendly care and women-centered care. Respectful maternity care (RMC) encompasses the universal right of every childbearing woman to receive care that includes respect for the woman's autonomy, dignity, feelings, choices, and preferences including choice of companionship and cultural rituals at birth in institutional delivery, whenever possible [6]. RMC is closely related to eliminating disrespect and abuse during pregnancy and childbirth [7, 8]. Based on a comprehensive desk review of the evidence, the following seven categories of disrespect and abuse in childbirth were identified: physical abuse, non-consented care, non-confidential care, non-dignified care, discrimination based on specific patient attributes abandonment of care, and detention in facilities [3].

The absence of respectful maternity care is recognized as a deterrent to utilization of maternity care services [3, 9]. Women's level of satisfaction with maternity care is closely related to the way they are treated by health workers [10]. There are no reliable estimates of the prevalence of abuse and disrespect [3, 11, 12]. The majority of studies conducted in measuring respectful maternity care used qualitative approaches and structured interviews with dichotomous responses on single items.

Although there is an overall agreement that disrespect and abuse are important barriers to utilization of services at health facilities, there is still no generally agreed-upon operational definition of these terms [3, 8], and there is an urgent need for a validated assessment tool that can measure women's perceptions of respectful maternity care that encourages women to use maternity care services. Constructing a tool will also help health facility managers to monitor their clients' level of satisfaction with the services and make the necessary adjustments to address clients' needs. The overall objective of this analysis was to construct a scale that measures women's perception of respectful maternity care provided in public health facilities of Ethiopia and determine its reliability and validity.

Methods

Study population and sample

The study was conducted in 11 urban-based public health facilities (three hospitals and three health centers in Addis Ababa, one hospital and one health center in Bishoftu, and one hospital and two heath centers in Adama town). This population, which was used for developing and validating the scale, is referred to as the developmental group. The target population for this study consisted of postpartum women who delivered in public health facilities within seven weeks prior to data collection.

Study design

The study utilized a mixed approach of qualitative and quantitative methods. The qualitative approach used in-depth interviews with postpartum women. In the quantitative approach, expert review was undertaken by trained data collectors using email and interviews with postpartum women.

The study was conducted in three phases. First, a formative phase was carried out to determine potential items that could be included in the tool. This initial phase included a comprehensive literature review followed by in-depth interviews with eight postpartum women in two health facilities. In the second phase, the draft items were pilot tested among 40 postpartum women in five health facilities. In the third phase, a quantitative assessment was conducted in a private area within the selected health facilities. Postpartum women interviewed were those who received labor and delivery services in public health facilities within 7 weeks prior to the date of the interview, consented to participate in the study, and visited health facilities during the data collection period.

Sampling

A consecutive sampling approach was utilized. In-depth interviews with eight postpartum women helped to saturate RMC dimensions. For piloting the draft tool, interviews with 40 postpartum women were conducted. The probability that a factor structure can be replicated in another study depends partially on the sample size used in the initial analysis [13]. For the final administration of the RMC tool, sampling recommendations, stated in terms of the ratio of a minimum sample size (N) for a particular analysis to the number of variables (p), were used [14, 15]. Tinsley and Tinsley (1987), cited by DeVellis (2003), suggest that proportions of 5 to 10 subjects to one variable is sufficient [16]. An empirical test conducted by Costello and Osborne on the effect of sample size on the results of factor analysis reported that larger samples tend to produce more accurate solutions [13].

In this study, the number of variables (p) was 37 items, and a total of 509 women (N) were interviewed, which resulted in nearly 14 subjects to one variable.

Data collection

Data were collected from postpartum women during March 2014 in the 11 health facilities across three cities. The interviews were conducted at intervals ranging from 6 h to 7 weeks after delivery. Forty-two percent of mothers were interviewed within 2 days of delivery, 14 % were interviewed from 3 to 42 days after delivery, and the remaining 44 % were interviewed from 43 to 49 days after delivery. Inclusion criteria for women were as follows: use of delivery services in public health facilities from 6 h to 49 days before data collection, ability to speak Amharic, and willingness to participate in the study.

To avoid professional bias during data collection, we selected experienced non-health professional (information technology and social science background) data collectors. The principal investigator and co-investigator supervised the data collection process.

Procedures

RMC tool development was conducted using psychometric procedures recommended by DeVellis (2003) on procedures for new scale development [16]. This included initial item generation, expert review, pilot testing, and final administration of the draft tool to the developmental group. Each step of the development process is described in Fig. 1 and in the next section.

Initial item generation

The literature review identified seven a priori dimensions. In each of these, 5–12 items were selected from the pool of items generated by in-depth interviews conducted to understand the perception of care received by eight postpartum women during the delivery and postnatal periods. This resulted in a draft tool, or scale, with 60 items. A five-point Likert scale (with 5–strongly agree, 4–agree, 3–I don't know, 2–do not agree, and 1–strongly do not agree) was used.

Expert review

The 60-item draft scale was reviewed by five maternal and newborn health experts in Ethiopia. The experts were all public health practitioners with masters' degrees in public health as well as a bachelor's degree in midwifery, public health, or medicine. These experts had from 10 to 35 years of experience in teaching, program management, and clinical work related to maternity care. All experts who participated were executive board members in their respective associations. These associations included the Ethiopian Public Health Association (EPHA), Ethiopian Public Health Officers association, Ethiopian Midwifery association, and Ethiopian Evaluation association. Using the comments of experts, four items were excluded, five items rephrased, and three new items added.

Pilot testing

After incorporating experts' feedback, the 59-item draft scale was random ordered and formatted to use in a

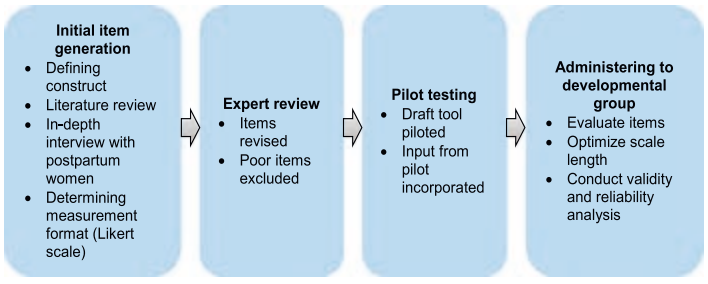

Fig. 1 RMC tool development process

pilot test conducted among a sample of 40 postpartum women in two hospitals and three health centers in Adama and Addis Ababa. The findings guided several changes to the tool: three items were merged into one and 20 items (those that were not clear to respondents or were redundant) were excluded, resulting in a tool with 37 items for final administration to the developmental group.

Data collection from the developmental group

Data were collected in March 2014. All data collectors received a half-day orientation on administration of the scale, the informed consent process, confidentiality of data, and the role of the data collector during the survey. Data collectors presented a support letter, obtained from the regional health bureaus of Addis Ababa and Oromia for the 11 facilities, to health facility managers and maternity unit coordinators to inform them of the study objectives. After this, the data collectors began their work. All women who used labor and delivery services in public health facilities within 49 days preceding the survey were invited to participate. Informed consent was requested and obtained for all women.

To maintain the women's privacy, all interviews were conducted in a private area inside the health facility. Interviews with immediate postnatal clients were conducted in the postnatal room when health providers were not around and no other mothers were in the room.

Data entry

After the data collected were reviewed for completeness, data entry was conducted. Data entry was managed using a data entry template prepared in Microsoft Access 2010. Double data entry was used for 25 % of cases and validated with the original and no discrepancy was obtained to proceed to 100 % double entry.

Data analysis

Data analysis was performed using the IBM SPSS 20 statistical package. Data analysis followed steps for new scale construction outlined by Worthington and Whittaker (2006) [15] and DeVellis (2003) [16]. The steps are outlined in Fig. 2.

Exploratory factor analysis (EFA) using a principal component analysis (PCA) was used to identify a parsimonious list of factors that describe women's perception of RMC and consolidate variables and generate hypotheses about underlying processes [13]. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity were used to check the suitability of data for factor analysis. The reliability of each component was assessed using Cronbach's alpha.

Correlation analysis and independent samples t-tests were used to assess validity of the tool with criterion satisfaction items and other background information of women and type of delivery.

Factor analysis

Establishing dimensionality of a construct is an important step in the scale development process [17]. In this analysis a KMO value of 0.6 was used as the criterion for sampling adequacy. To produce scale uni-dimensionality and simplify the factor solutions, scree plot and parallel tests were used as criteria for factor extraction.

Rotation is a statistical technique used to simplify interoperability of factor solution [13]. Oblique rotation was used as a method of rotation. Use of oblique rotation was justified because RMC components are closely correlated. The rotation was conducted in a series of seven iterative processes, deleting one or more items at a time and examining the remaining items.

Item loading (which refers to the degrees to which the original item scores correlate with the components), cross loading, and communalities were used as criteria for item deletion. If factors shared items that cross-loaded too highly on more than one factor (e.g., > 0.32) or if factors shared items that cross-loaded and the difference in item loading from the highest was less than 0.15, it was rejected. Communalities (the amount of variance of a measure that is accounted for by a component or group of components derived from factor analysis before rotation) was the third criterion, where item communalities of less than 0.6 after rotation were used as the lowest limit for item deletion. Cross loading was not used as a pragmatic statistical criterion for item deletion; instead, the judgment of the researcher and study team members was used to delete or retain items to relevant factors based on their theoretical significance.

Validity and reliability analysis

Evidence about different forms of validity of RMC components was obtained using PCA. This section describes

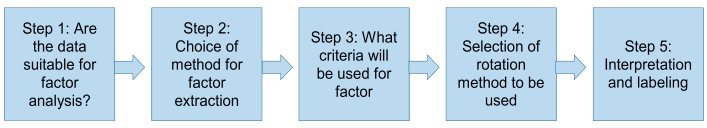

Fig. 2 Five-step data analysis process

how the evidence for different forms of validity was inferred.

Content-related validation involved assessing the degree to which the sample of items, tasks, or questions on a test is representative of some defined universe or domain of content, based on expert judgment. Face validity, which is closely related to content validity and refers to whether a measure appears to be measuring what it is supposed to measure, was also assessed [10, 18].

Criterion-related validation consisted of verifying whether a test score on the scale was correlated with criteria measured at the same time. This is usually based on comparison between an existing scale and the one under development, but in our case, no appropriate scales existed for the construct. Therefore, we selected two criteria using the experiences of other researchers on a closely related variable: satisfaction with overall service and recommendation to others [10].

Construct validation relates to how well the items on a questionnaire represent the underlying conceptual structure. Construct validation was assessed by examining the Pearson correlation coefficient between components identified by factor analysis. Known-groups validity (also a form of construct validity) was ensured by assessing the scale's ability to differentiate the level of RMC reported for normal and complicated deliveries.

Reliability analysis was used to assess the internal consistency of the scale. The internal consistency of each component of the RMC scale was assessed using Cronbach's alpha. To be considered consistent, the minimal coefficient for a component had to be above 0.70 [10].

Ethical consideration

The proposal for this study was reviewed and approved by the Addis Ababa University Faculty of Education and Behavioral Sciences ad hoc research ethics committee, the Addis Ababa Regional Health Bureau institutional review board, and the Oromia Regional Health Bureau institutional review boards. All women interviewed were asked for their informed consent to participate.

Results

Characteristics of mothers surveyed

A total of 515 recently delivered women responded to the survey across the 11 health facilities. Six of the questionnaires were excluded due to incompletion. All of the remaining 509 respondents were included in the analyses. Residence of these respondents was predominantly urban (95.1 %). The average age was 27.4 years with a standard deviation of 4.8, minimum 16 years and maximum 46 years. The women's parity ranged from zero to six; 51 % had a spontaneous vaginal delivery; 12.3 % had a cesarean section; and 36.7 % had an episiotomy.

In-depth interviews conducted with postpartum women showed that some forms of abuse and disrespect were prevalent in the study area. The in-depth interview participants reported some form of physical abuse. A 20-year-old mother reported that, while she was having pain during labor, she touched a young female health worker and the health worker threw the mother's hand away. Incidents such as this shocked the women and caused them to lose trust in the health workers. Women also reported that non-consented care has occurred so frequently that mothers do not expect to be asked for their consent for all procedures. A 23-year-old mother reported that, after she was referred from a health center and had waited for some time at a teaching hospital, students came one after the other, asked her to open her legs, and inserted their fingers into her vagina without explaining the reason. In-depth interview participants also reported non-dignified care. Examples of this type of care included health workers shouting at women for not attending antenatal care services and for making noises during their labor pains. A 20-year-old woman reported discrimination during hospital referrals. She was referred to hospitals where she was not able to get services and was later referred to another hospital. Delays caused by these referrals were painful for her, and she felt the health workers should have prioritized her. The 20-year-old woman reported abandonment during her stay at a health center, but detentions in facilities were not reported because the government provided delivery services free of charge.

Factor analysis

Suitability of data for factor analysis was confirmed by KMO and Bartlett's test of sphericity. The KMO value for RMC scale was *0.903*, indicating that there are components in the correlation matrix to uncover. Bartlett's test of sphericity, which was χ^2 (666) = 9229, $p < 0.0001$, indicated that correlation between the items was sufficiently large for PCA. The two tests indicated that use of PCA was appropriate.

The scree plot suggested four components explaining *50.3 %* of the variation in the initial 37-item scale solution and 67.8 % of the final 15-item scale. Parallel analysis, using Monte-Carlo PA software-generated random data, also confirmed four components. Multidimensionality of the RMC construct was confirmed by the diagnostic tests.

Oblique rotation (direct oblimin with Kaiser norma lization) in a series of iterative processes produced four components with eight, three, three, and two items on the four components, respectively.

Table 1 below show items deleted for different reasons.

Table 1 Items deleted during analysis for different reasons, 2014

Items	Reason for deletion
Q202 Some health providers showed me an intimidating gesture (R)	Low communalities
Q206 I was left alone after delivery for a long time (R)	
Q203 The counseling sessions were held in a private area	
Q234 The health workers provided coaching on breathing and relaxation	
Q204 The health workers talked to me and my companions politely	
Q201 The health provider greeted me and my companions before service delivery	
Q209 The health worker didn't mention anything that he/she was performing (R)	
Q231 The health workers showed active involvement during contraction	
Q236 I felt like the health workers tried to move things along for their own convenience (R)	
Q221 The health worker encouraged me to open my legs during labor	
Q210 I was detained in the facility because I didn't have enough money to pay for the service I was given (R)	Low factor loading
Q213 The couches were separated by privacy screens during examination	
Q215 Some health workers do not treat all patients equally (R)	High cross loading on two or more factors
Q217 My consent was requested for all procedures performed	
Q226 The health provider helped me to try different delivery positions	
Q229 During delivery, the health worker draped or covered me to protect my privacy	
Q230 The health workers used a reassuring touch	
Q220 My companions were allowed to enter the delivery room during delivery	
Q212 I was told that I can refuse a procedure if I don't like it	
Q223 All health workers treat patients equally	
Q214 The health workers shouted at me for different reasons during contraction (R)	Decrease cross-correlation
Q235 I felt there was inappropriate touching of genitals/thighs during the exam (R)	

(R): Items are reverse coded

During the extraction process, 10 items were deleted for low communalities, eight items were eliminated for high cross loading on two or more factors, two items were eliminated due to low factor loading, and two items were deleted because they contributed to a decrease in cross correlation of other items.

Table 2 below shows the pattern matrix, which is the correlation between each item and uncorrelated components extracted after an iterative process of oblique rotation.

The four components of the 15-item scale extracted by PCA were labeled as friendly care, abuse-free care, discrimination-free care, and timely care considering the core idea explained by the predominant items in terms of factor loading in each subscale [19].

The 15-item RMC scale's mean score for the developmental group was 57.83 with standard deviation of 8.46. The mean and standard deviation for each component were 28.54, 5.18 for friendly care; 10.87, 2.98 for abuse-free care; 9.90, 2.78 for timely care; and 8.52, 1.59 for discrimination-free care.

Analysis of inter item consistency showed good internal correlation with Cronbach's alpha of 0.857 for standardized items for the full 15-item scale: 0.889 for friendly care, 0.75 for abuse-free care, 0.71 for timely care, and 0.666 for discrimination-free care.

Content validity of the RMC scale was assured through a methodological rigor that included review of related literature, in-depth interviews with postpartum women, and expert review.

Concurrent validity was assessed by correlating RMC scale with global satisfaction criterion items (Q339–satisfied with overall service and Q340–recommend facility to others). Pearson product moment correlation of summated RMC scale score with Q339 and Q340 showed a correlation coefficient of 0.711, $p < 0.001$, and 0.881, $p < 0.001$, respectively.

Construct-related validity was confirmed by examining the components correlation matrix for the rotated final components. This indicated a minimal correlation among components as shown in Table 3 below. Small Pearson correlation coefficients between components were observed.

Principal component analysis on a random split sample (320 out of the 509 samples) of the developmental sample confirmed factor stability; all four factors were retained with minimal change in factor loading. The

Table 2 Pattern matrix RMC scale, 2014

RMC Items	Components				Communality	Component label
	1	2	3	4		
Q232 I felt that health workers cared for me with a kind approach	0.811				0.724	Friendly care
Q211 The health workers treated me in a friendly manner	0.792				0.669	
Q233 The health workers talked positively about pain and relief	0.789				0.604	
Q237 The health worker showed his/her concern and empathy	0.777				0.677	
Q227 All health workers treated me with respect as an individual	0.731				0.632	
Q205 The health workers spoke to me in a language that I could understand	0.724				0.598	
Q207 The health provider called me by my name	0.703				0.599	
Q224 The health worker responded to my needs whether or not I asked		0.826			0.725	Abuse-free care
Q208 The health provider slapped me during delivery for different reasons (R)		0.820			0.765	
Q238 The health workers shouted at me because I haven't done what I was told to do (R)		0.781			0.725	
Q216 I was kept waiting for a long time before receiving service (R)			0.897		0.743	Timely care
Q225 I was allowed to practice cultural rituals in the facility			0.710		0.587	
Q219 Service provision was delayed due to the health facilities' internal problem (R)			0.684		0.666	
Q222 Some of the health workers did not treat me well because of some personal attribute (R)				0.840	0.76	Discrimination-free care
Q218 Some health workers insulted me and my companions due to my personal attributes (R)				0.820	0.718	

(R): Items are reverse coded
Extraction method: Principal component analysis
Rotation method: Oblimin with Kaiser normalization

scale accounted for 68.8 % of the variation as compared to 67.8 % in the full scale.

Discussion

Review of the draft tool by a panel of maternal and newborn health experts improved the content coverage as well as the relevance of items in identified dimensions to local contexts and addressed face validity and content validity of the scale. Evidence for construct validity of the scale was obtained from factor analysis, which showed stability of the four components (friendly care, abuse-free care, timely care, and discrimination-free care) and also good internal consistency. The observed reliability falls in the range of acceptable internal consistency described by DeVellis (2003) [16].

In addition, correlation between components showed low correlation coefficients among the four components, which is considered to be strong evidence for construct-related validity. The evidence related to construct validity of the RMC construct implies that the identified components (friendly care, abuse-free care, timely care, and discrimination-free care) are the four dimensions that represent the perception of RMC provision in the public facilities examined in Ethiopia.

Concurrent validity was ensured by correlating the summated RMC tool with two items included in the tool that measured global satisfaction; these two items were considered to be closely related to RMC (satisfaction with overall service and recommend facility to others). A strong correlation coefficient of the two items (0.711, $p < 0.001$ and 0.881, $p < 0.001$) indicated evidence for concurrent validity. The strong correlation between the RMC scale and global satisfaction measures indicates that women who are satisfied with labor and delivery services also show a higher rating for RMC services.

Strength

This study is one of the first studies on tool development for RMC that uses quantitative methods with multiple items. The majority of studies on RMC were

Table 3 Component correlation matrix RMC scale, 2014

Component	Friendly care	Abuse-free care	Timely care	Discrimination-free care
Friendly care	1.0	0.113	0.356	0.250
Abuse-free care	0.113	1.0	0.019	0.065
Timely care	0.356	0.019	1.0	−0.009
Discrimination-free care	0.250	0.065	−0.009	1.0

conducted using qualitative approaches or single-item quantitative methods, which pose questions about validity and reliability. The seven dimensions of RMC identified by Bowser and Hill (2010) [3] were based on desk review.

This work can pave the way for other researchers to explore the construct further and produce other tools. The study utilized psychometric recommendation, which helped to produce a tool that has content and construct validity and good internal consistency.

Limitation

For this study the developmental groups were selected from public hospitals and health centers in three towns in Ethiopia. To use this tool, additional studies need to be conducted by including rural hospitals and health centers. Some of the important dimensions of RMC identified by literature review (consented care, confidential care, and non-abandonment) were not identified. Although experiences of consented care and confidential care were identified in the in-depth interviews, the EFA process could not extract this component. This calls for further exploratory work in RMC using a different sample.

Conclusion

The 15-item RMC scale developed with four components (friendly care, abuse-free care, timely care, and discrimination-free care) was found to be a valid and reliable measure of women's perception of respectful maternity care provided in public health facilities based on the information found from the developmental group. The factor structure of RMC needs to be further confirmed by additional exploratory and confirmatory factor analysis studies in additional sample areas.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

SDE designed the study, coordinated data collection, performed statistical analysis, and drafted the manuscript. MZT contributed to the design and review of the manuscript. WBS supervised data collection and contributed to review of the manuscript. All authors read and approved the final manuscript.

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CHAPTER 3

Prevalence of Respectful Maternity Care

Respectful maternity care in Ethiopian public health facilitie

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Respectful maternity care in Ethiopian public health facilities

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Abstract

Background: Disrespect and abuse of women during institutional childbirth services is one of the deterrents to utilization of maternity care services in Ethiopia and other low- and middle-income countries. This paper describes the prevalence of respectful maternity care (RMC) and mistreatment of women in hospitals and health centers, and identifies factors associated with occurrence of RMC and mistreatment of women during institutional labor and childbirth services.

Methods: This study had a cross sectional study design. Trained external observers assessed care provided to 240 women in 28 health centers and hospitals during labor and childbirth using structured observation checklists. The outcome variable, *providers' RMC performance*, was measured by nine behavioral descriptors. The outcome, *any* mistreatment, was measured by four items related to mistreatment of women: physical abuse, verbal abuse, absence of privacy during examination and abandonment.
We present percentages of the nine RMC indicators, mean score of providers' RMC performance and the adjusted multilevel model regression coefficients to determine the association with a quality improvement program and other facility and provider characteristics.

Results: Women on average received 5.9 (66%) of the nine recommended RMC practices. Health centers demonstrated higher RMC performance than hospitals. At least one form of mistreatment of women was committed in 36% of the observations (38% in health centers and 32% in hospitals).
Higher likelihood of performing high level of RMC was found among male vs. female providers ($\hat{\beta} = 0.65$, $p = 0.012$), midwives vs. other cadres ($\hat{\beta} = 0.88$, $p = 0.002$), facilities implementing a quality improvement approach, Standards-based Management and Recognition (SBM-R©) ($\hat{\beta} = 1.31$, $p = 0.003$), and among laboring women accompanied by a companion $\hat{\beta} = 0.99$, $p = 0.003$). No factor was associated with observed mistreatment of women.

Conclusion: Quality improvement using SBM-R© and having a companion during labor and delivery were associated with RMC. Policy makers need to consider the role of quality improvement approaches and accommodating companions in promoting RMC. More research is needed to identify the reason for superior RMC performance of male providers over female providers and midwives compared to other professional cadre, as are longitudinal studies of quality improvement on RMC and mistreatment of women during labor and childbirth services in public health facilities.

Keywords: Respectful maternity care, Mistreatment of women, Labor and delivery, Birth companion, Birth positioning, Ethiopia, Health facility

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Plain English summary

Disrespect and abuse of women during institutional childbirth services is one of the deterrents to utilization of maternity care services in Ethiopia and other low- and middle-income countries. This paper describes the level of respectful maternity care (RMC) and mistreatment of women reported by women who gave childbirth in health facilities in Ethiopia, and identifies associated factors.

Trained external observers assessed care provided to 240 women in 28 health centers and hospitals during labor and childbirth using structured observation checklists. The outcome variable, *providers' RMC performance*, was measured by nine behavioral descriptors. The outcome, *any* mistreatment of women, was measured by four items indicative of mistreatment of women: physical abuse, verbal abuse, absence of privacy during examination and abandonment.

Women on average received six of the nine recommended RMC practices. Health centers demonstrated higher RMC performance than hospitals. Any form of mistreatment of women was committed in more than two-thirds of the observations. Higher likelihood of performing high level of RMC was found among male providers vs. female, midwives vs. other cadres, facilities implementing a quality improvement approach, Standards-based Management and Recognition (SBM-R©and among laboring women accompanied by a companion. No factor was associated with observed mistreatment of women during institutional labor and childbirth services. Quality improvement using SBM-R© and having a companion during labor and delivery were associated with RMC. Policy makers need to consider the role of quality improvement approaches and accommodating companions in promoting RMC. More research is needed to identify the reason for superior RMC performance of male providers over female providers and midwives compared to other professional cadre.

Background

Following the growing evidence on women's experience of mistreatment of women during pregnancy and childbirth across the globe, the World Health Organization (WHO) released a statement on prevention and elimination of disrespect and abuse (D&A) during facility-based childbirth [1]. The statement advocates for governments and development partners to initiate, support and sustain programs designed to address quality of Maternal and Newborn Health (MNH) services with a strong emphasis on the provision of respectful maternity care (RMC) as an essential component of quality of care [1]. The White Ribbon Alliance defines RMC as an approach that emphasizes the positive interpersonal interactions of women with health care providers and staff during labor, delivery, and the postpartum period. Absence of D&A by health care providers and other staff alone is not sufficient for provision of RMC; the RMC definition calls for fostering positive staff attitudes and behaviors that are conducive to improved satisfaction of women with their birth experience [2]. Assessing the status of mistreatment of women in health facilities will inform programs engaged in promotion of RMC without losing sight in reducing mistreatment of women.

In Ethiopia, the proportion of childbirths attended by a Skilled Birth Attendant (SBA) in 2014 was 15%, compared to 50–53% in other Sub-Saharan African countries, especially in East Africa [3, 4]. In many countries, one of the reasons for low rate of childbirth assisted by SBA is absence of RMC and the actual and perceived high D&A committed by health providers [5–8]. As elsewhere, in Ethiopia, D&A is a deterrent to women seeking childbirth in health facilities. A 2014 synthesis of evidence from 65 studies on the barriers of facility-based delivery in low-and middle-income countries showed many individual, community, and health system related factors, including mistreatment of women, geographic accessibility, health care costs, perceptions of quality, cultural and personal preferences, and education, contributed to low SBA rates [8]. This synthesis also noted that health professionals working at health facilities were not sensitive to women's privacy and showed little care in giving them psychological support when women requested it [8, 9]. A 2014 study conducted in Addis Ababa at two health centers and one university teaching hospital found that 78% of women reported having experienced some form of D&A [10]. There was also discrepancy between hospitals and health centers.

The Ethiopian Ministry of Health is highly committed to increasing the rate of SBA-assisted deliveries in health facilities; their health sector transformation plan (HSTP) has a target of 90% skilled birth attendance rate and a reduction of the maternal mortality ratio (MMR) from 420/100,000 live births in 2015 to 199/100,000 live births by 2020 [11]. The focus in the Health Sector Development Plans III and IV (implemented during 2005–2014) to achieve a higher rate of attended births at health facilities and a reduced MMR was mainly focused on bringing services closer to the community. Ethiopia's Ministry of Health acknowledges, however, that provision of RMC is also a key intervention to bring unreached women to health facilities for maternity care services and thus, an important component in achieving their 2020 goals. To date, some efforts have been made to integrate RMC in the in-service training packages for MNH care, particularly Basic Emergency Obstetrics and Newborn Care (BEmONC) training. The BEmONC training package encourages providers to deliver services

that are acceptable to women, that empower women and their families to become active participants in care, protect the rights of women, ensure that all healthcare staff use positive interpersonal communication with women and companions and promote provision of emotional, psychological, and social support to women [12].

This analysis draws on data from a larger study designed to assess the Standards-Based Management and Recognition (SBM-R©) quality improvement approach that was implemented for two years in Ethiopia. SBM-R©is a quality improvement approach developed by Jhpiego that sets evidence-based performance standards and then empowers health-care managers and providers to assess and address gaps between actual and desired performance at their facility [13]. The SBM-R© approach to quality improvement comprises four steps:1) defining evidence-based and locally relevant standards 2) assessing the gap between desired and actual performance, designing and implementing interventions to close this gap within health facilities3) periodically measuring progress towards desired performance and 4) rewarding performance [14–17].

The objectives of this manuscript are a) to measure the prevalence of RMC and mistreatment of women in hospitals and health centers and b) to identify factors associated with the observed RMC and mistreatment of women in Ethiopia, including facility- and provider-related factors.

Methods

Study design

This study used data form the SBM-R© quality improvement approach evaluation. This analysis used cross-sectional data combining both SBM-R© intervention and matched comparison sites. This manuscript focused on the observation of care data and in particular, the respectful maternity care elements.

Study setting

Ethiopia uses a three-tier health structure of primary, secondary and tertiary levels. The primary level includes health centers with their satellite health post and primary hospitals. In the secondary and tertiary level, general hospitals and specialized hospitals are included [11].

Maternal and Child Health Integrated Program (MCHIP) implemented by Jhpiego used SBM-R© as part of a comprehensive package of interventions aimed at improving quality of maternal and newborn health including RMC in Ethiopia for two years between 2002 and 2003. The study was conducted in the four regions of the country namely, Tigray, Amhara, Oromia and SNNP regions. A total of 28 urban and peri-urban health facilities six referral hospitals and 22 health centers were selected.

Half of the facilities participated in the study (three hospitals and eleven health centers) had implemented SBM-R© approach.

Sample size

The unit of analysis for this study was each observation, which represents a unique woman. Providers may have cared for multiple women during the observation period. Sample size for labor and delivery observation in the larger SBM-R© evaluation study was calculated to detect a minimum of 20% difference in performance of Active Management of Third Stage of Labor (AMSTL) between SBM-R©intervention and comparison facilities, with 80% statistical power, 95% level of confidence and the recommended value of 1% intraclass correlation coefficient for median value of primary health care research [18]. The performance of AMSTL for comparison sites was set as 29% using a previous MCHIP quality of care study [19]. The final sample size was 240 women. A total of 117 providers who were on duty during data collection period were invited for observation. All women who came for labor and delivery and postnatal care were invited for observation.

Data collection

The study used a structured observation of the provider-client interaction during normal labor and delivery services. Trained assessors were clinicians (bachelor and master's degree level midwives and health officers) and national level BEmONC trainers who were external to the facility, recruited from regions other than their own. Each assessor went through a one-week study training workshop. Data were collected in July and August, 2014. Assessors observed midwives, nurses and health officers who were providing labor and delivery services during day and night. The assessors were not intervening with the care provided to women. In an event where the assessor deemed the safety or life of the mother or newborn in danger, or where the client's status was deteriorating, the assessors were trained to alert a senior clinician to intervene. The observation of women started in the second stage of labor and continued to two hours post-delivery. Two assessors were assigned per facility and each covered two eight hour shifts per day. In each health facility between two and 11 women were observed within two to five days. In 16 of the facilities assessed, 11 women were observed; in the remaining 12 health centers, between two and nine women were observed. The median number of women observed per facility was 11.

Data quality

To ensure data quality, the study coordinator oversaw the data collection process, closely communicating with

the principal investigator and supervisors. Each day, supervisors checked the completeness of observational data collected.

Measures

The two outcomes of interest (dependent variables) were 'any mistreatment of women' and total number of RMC descriptors practiced by providers. Each element comprising these outcome measures was recorded as dichotomous (observed or not observed). The providers' mistreatment of women and RMC structured observation checklist was adapted from the MCHIP quality of care checklist. The larger study was validated in five countries, including Ethiopia [20].

The structured RMC observation checklist included 9 items that described desirable provider behaviors. The desirable provider behaviors included: (1) receiving and greeting the pregnant women, (2) explaining each step of the examination, (3) encouraging women to ask questions, (4) responding to women and their companions politely when they asked questions, (5) explaining to women what will happen in labor, (6) encouraging women to walk and change position, (7) ensuring light eating, (8) asking women which position they would like to deliver in and (9) allowing women to give birth in the position they want. The outcome variable was the sum of the nine equally weighted RMC behaviors practiced for each observation and ranged from 0 to 9.

The undesirable provider behaviors reflecting mistreatment of women included 4 items: (1) physical abuse (slapping or hitting women during labor), (2) verbal abuse (making insults or threatening women and or their companions), (3) the absence of privacy during examination and (4) abandonment (leaving women alone during labor). In the Bohren et, al. (2015) typology of mistreatment of women during childbirth, the four items are mapped with four of the seven third-ordered themes [21]. The outcome variable, 'any mistreatment of women' was dichotomous requiring a 'yes' or 'no' response. 'Yes' was marked if any of the above behaviors was observed. RMC ranged between 0 and 100%.

Data management and analysis

Cleaned observation data were entered twice into CS Pro 5.0 [22]. Data discrepancies were resolved and the data were exported to STATA 13.0 for further analysis [23].

Chi square test for categorical variables were used to compare health workers' practice of mistreatment of women with facility types (health centers and hospitals). Independent samples *t*-test were used to compare health workers' RMC practices with facility types. Socio-demographic characteristics of observed health workers and facility characteristics were reported using frequency and percentage disaggregated by facility type. Tests of proportions and relationships between mistreatment of women, RMC and socio-demographic variables were computed at 5% level of significance.

Multivariable, multilevel linear regression for the continuous outcome variable, total RMC score, and multivariable, multilevel logistic regression analysis for the categorical outcome, any mistreatment of women, were used because observation data are hierarchical (i.e. clients are nested within providers, providers are nested with in health facilities). Also, the use of flat (non-clustered) models could underestimate the standard errors of the effect sizes, which consequently can affect decision on null hypothesis. In such data, women observed within same health facility may be more similar to each other than women observed in other health facilities.

Three steps were used to fit multilevel logistic regression and multilevel linear regression models. First, the null, unadjusted model (without predictors) helped determine whether multilevel modeling was needed. Second, bivariate logistic and linear regression models were fitted to identify potential predictors of occurrence of mistreatment of women and practice of RMC for multivariable analysis. Third, multivariable logistic and linear regression models were fitted to identify predictors of occurrence of mistreatment of women and practice of RMC. The interclass correlation coefficients (ICC) for the null model and multivariable model were calculated and used to evaluate the variations explained by facility and provider cluster effects on the outcome variables [24]. For selection of candidate variables for the multivariate model, *p*-value of less than 0.25 was used.

The fixed effect sizes of individual and facility-level factors on the total RMC scores were expressed using regression coefficient (β), adjusted regression coefficients ($\hat{\beta}$), the 95% Confidence Interval (CI) and *p*-values. Whereas, the fixed effect sizes of individual and facility-level factors on the observed practice of mistreatment of women were expressed using the crude odds ratio (COR), adjusted odds ratio (AOR), the 95% Confidence Interval (CI) and *p*-values.

Ethics

The study protocol was reviewed and approved by the National Ethics Review Committee (NERC) at the Ministry of Science and Technology in Ethiopia. The Johns Hopkins Bloomberg School of Public Health Institutional Review Board in Baltimore, Maryland, USA, indicated the study was exempt from oversight under U.S. legislation, 45 CFR 46.101(b). Recruitment of women and consent process were conducted immediately after arrival at the facility. In this study, each woman interviewed, observed and each provider observed gave informed written consent prior to participation.

Results

We observed 240 women (175 in health center and 65 in hospitals) during labor and childbirth. The observed deliveries were managed by 117 providers in 28 facilities. An average of two women were observed per provider (range of one to eight). The median number of women observed per facility was 11.

Females provided care in three-fourths of the observations (73% or $n = 174$). Most observations were of deliveries with midwives (78%, $n = 187$), and midwife-assisted deliveries were observed more in hospitals than health centers (94% vs. 72%, $p < 0.001$). Health workers allowed a support person during labor in 84% of observations (86% in health centers and 81% in hospitals) (Table 1).

As shown in Table 2, the observations were conducted in 28 health facilities (22 health centers and 6 hospitals). The health centers included for the observation had an average of 646 annual deliveries and the hospitals had an average of 1,974 annual deliveries. On average, health centers had 5.5 beds with a standard error of 0.3 whereas hospitals had 159 beds with a standard error of 4.9. Health centers had an average of 5.8 MNH staff with a standard error of 0.2 and hospitals had an average of 17 MNH staff with a standard error of 0.3.

Prevalence of respectful maternity care

The most frequently practiced RMC element was ensuring that women take light food, occurring in 83% ($n = 193$) observations. The least practiced item was asking women's preference of birth position, observed in only 29% ($n = 68$) of the observations. Health centers performed better than hospitals in all nine practices and the differences were statistically significant in the following five practices: receiving and greeting women, encouraging women to ask questions, encouraging walking and changing positions, ensuring women have taken light food and allowing women to give birth in the position she prefers. On average 5.9 (66%) of the 9 recommended RMC descriptors were performed; the average performance in health centers was significantly higher compared to health centers 6.2 (69%) and in hospitals 5.3 (59%), $p = 0.007$ (Table 3).

Observed practice of mistreatment of women

Of the total 240 observations, in 36% ($n = 87$) at least one form of mistreatment of women was observed (Table 3). The element with the highest prevalence was abandonment or being left alone, 19% ($n = 43$). Verbal abuse occurred in 8% ($n = 18$) of the observations. No statistically significant difference was observed between hospitals and health centers in observed prevalence of these elements of mistreatment of women (Table 4).

Table 5 describes results from multivariate linear regression analysis of facility and provider related factors associated with total RMC score. Midwives were more likely to have higher total RMC score compared to other providers (nurses, health officers and doctors) [$\hat{\beta} = 0.88$, 95% CI (0.32, 1.44); $p = 0.002$]. The coefficient was higher among male than female providers [$\hat{\beta} = 0.65$, 95% CI (0.15, 1.16); $p = 0.012$]. Facilities that implemented SBM-R approach had a higher RMC score [$\hat{\beta} = 1.31$, 95% CI (0.434, 2.19), $p = 0.003$]. Women were more likely to have higher RMC scores when birth companions were allowed in labor and delivery rooms [$\hat{\beta} = 0.99$, 95% CI (0.335, 1.63), $p = 0.003$). Health centers had a higher RMC score compared to hospitals, although this finding was not statistically significant.

Table 1 Characteristics of Labor and Delivery Observations, by Facility Type (Observations as the unit of analysis)

	Total Observations		Health Center observations		Hospital observations		*p*-value (Chi-Square)
	%	N	%	N	%	N	
Provider characteristics							
Sex							
Male	*27*	65	*32*	55	*15*	10	**0.009***
Female	*73*	174	*68*	119	*85*	55	
Profession							
Midwife	*78*	187	*72*	126	*94*	61	**<0.001***
Others (Nurse, doctor, health officers)	*22*	53	*28*	49	*6*	4	
Region							
Tigray	*18*	44	*13*	22	*34*	22	0.864
Amhara	*27*	65	*37*	65	*0*	65	
Oromiya	*28*	66	*25*	44	*25*	22	
SNNPR	*27*	65	*25*	44	*25*	21	
Support person allowed during labor	*84*	195	*86*	144	*78*	51	0.179

*. P-value significant at 0.05 level

Table 2 Characteristics of Facilities Participated in Labor and Delivery Observations

Facility characteristics	Total ($N = 28$) mean (SE)	Health Centers ($N = 22$) mean (SE)	Hospitals ($N = 6$) mean (SE)	*p*-value (independent sample *t*-test)
Annual deliveries	1006 (53)	646 (27)	1974 (97)	**0.012***
Number of beds	50 (4.8)	5.5 (0.3)	159 (4.9)	**<0.001***
Number of MNH staff	9 (0.4)	5.8 (0.2)	17 (0.3)	**<0.001***
Number of BEmONC trained staff	4 (0.3)	2.3 (0.1)	9 (0.7)	0.069

*. P-value significant at 0.05 level

Table 6 shows results from multi-level multivariable logistic regression analysis of any mistreatment of women observed in labor and delivery observations as an outcome and provider's facility and provider characteristics variables as explanatory variables. None of the hypothesized provider and facility-related characteristics were associated with observed mistreatment of women.

Discussion

In this study, carried out in hospitals and health centers of four regions of Ethiopia, labors and births were observed. The analysis revealed the prevalence of RMC and mistreatment of women in hospitals and health centers and identified factors associated with the observed RMC and mistreatment of women.

Respectful maternity care

On average, a woman received two-thirds of the aspects of RMC assessed. We discuss some of the practices that were least likely to be observed in our study and showed significant variation between hospitals and health centers.

Allowing women to choose preferred birthing position

Providers' practice of allowing women to choose their preferred birth positioning occurred at the lowest frequency of all the desired behaviors; only about two in five women in health centers and one in five women in hospitals were given choices for delivery position. Quality statement 6.2 of the WHO standards for improving quality of maternal and newborn care in health facilities states that every woman should receive support to encourage her to adopt the position of her choice during

Table 3 Prevalence of RMC services during labor and delivery, by Facility Type, Ethiopia 2014 ($N = 240$ observations)

	Total ($n = 240$)		Health Center ($n = 175$)	Hospital ($n = 65$)	*p*-value
Provider:	**%**	No.	**%**	**%**	
…receives and greets the pregnant women	*77*	181	*82*	*63*	**0.002***
Don't know or missing	*2*	5	*3*	*0*	
…explains each step of the examination to the women	*65*	153	*69*	*57*	0.092
Don't know or missing	*3*	6	*3*	*0*	
…encourages the women to ask questions	*39*	90	*44*	*26*	**0.015***
Don't know or missing	*3*	7	*4*	*0*	
…responds to a women/companion question politely	*72*	167	*74*	*68*	0.328
Don't know or missing	*4*	9	*5*	*0*	
…explains what will happen in labor to women	*81*	188	*78*	*88*	0.107
Don't know or missing	*3*	8	*5*	*0*	
…encourages women to walk and change position	*69*	162	*73*	*59*	**0.027***
Don't know or missing	*3*	6	*3*	*0*	
…at least once ensures if she has taken light food	*83*	193	*87*	*73*	**0.011***
Don't know or missing	*3*	8	*3*	*3*	
…asks women which position she would like to deliver	*29*	68	*33*	*20*	0.052
Don't know or missing	*3*	8	*5*	*0*	
…allowed to give birth in the position she wants	*38*	85	*42*	*27*	**0.029***
Don't know or missing	*6*	15	*8*	*2*	
Average number of RMC Practices performed	*66*	*5.9*	*69*	*59*	***0.007****

*. P-value significant at 0.05 level

Table 4 Prevalence of mistreatment of women during labor and delivery, by Facility Type

Item	Total		Health Center		Hospital		*p*-value
	%	No.	%	No.	%	No.	
Physical abuse	*9*	21	*9*	15	*10*	6	*0.973*
Verbal abuse	*8*	18	*6*	10	*12*	8	*0.117*
Privacy violated	*17*	40	*17*	29	*17*	11	*0.951*
Abandonment: or being left alone	*19*	43	*19*	32	*17*	11	*0.745*
Summary Outcome							
Any mistreatment of women: At least one form of mistreatment of women	*36*	87	*38*	66	*32*	21	*0.436*

labor [25]. Bohren et al's [26] systematic review of barriers to institutional delivery found that being asked to adopt unfamiliar birthing positions and having no control over choice of birthing position are important reasons why some women prefer home deliveries. In our study, the practice of allowing preferred positions was significantly higher in health centers than in hospitals. A possible reason for this discrepancy may be the relatively higher client volumes and lower staff-to-patient ratios in hospitals, which may impede providers' ability to offer more individualized care. The low level of practice of allowing women to choose their preferred birthing position could be attributed to the fact that facilities usually do not have physical structures for alternative birth positions (i.e., suitable delivery couches or floor space for squatting positions). For example, a study in Afar region in Ethiopia showed women preferred a sitting position for delivery but delivery beds that have space for a semi-sitting position were not available [27]. Providers' lack of training on alternate birth positions, particularly during their pre-service practicum, may also explain why some do not allow women to deliver in their preferred position. Health workers in a study in Bangladesh and Uganda reported that they had not been trained to deliver women in positions other than lying at their backs and thus did not feel confident to do so [28, 29].

Light eating

A majority of women were permitted to take light food during labor and delivery, with health centers

Table 5 Factors Associated with Provision of RMC in Labor and Delivery in Bivariate and Multivariable Multi-level Regression Models (Observation): Outcome variable: Number of RMC practices performed

Predictor	Bivariate			Multivariate		
	Coefficient (β)	95% CI	*p*-value	Adjusted Coefficient ($\hat{\beta}$)	95% CI	*p*-value
Cadre						
Midwife (Ref: Others (Nurses, doctors, health officers)	0.75	0.20,1.30	0.007	0.88	0.32,1.44	**0.002***
Provider gender						
Female (Ref: Male)	-0.44	-0.98, 0.09	0.107	-0.65	-1.16, -0.15	**0.012***
Facility type						
Health center (Ref: Hospital)	0.94	-0.534,2.15	0.237	0.92	-0.106, 1.95	0.079
QI Intervention status						
Intervention (Ref: Comparison)	1.29	0.25, 2.34	0.016	1.31	0.43, 2.19	**0.003***
Companion encouraged						
Yes (Ref: No)	1.03	0.358,1.71	0.003	0.99	0.335, 1.63	**0.003***
Region						
Amhara (Ref: Tigray)	0.68	-0.94, 2.31	0.409			
Oromiya	-1.22	-2.9, 0.46	0.155			
SNNPR	-0.8	-2.37, 0.77	0.319			
Annual number of deliveries	-0.0002	-.001,0.0005	0.553			
Number of MNH staff	-0.030	-0.134,0.074	0.57			
Number of BEmONC trained staff	0.026	-0.133, .186	0.747			

Notes. Provision of RMC services during labor and delivery was defined as mean percentage score on a total of 10 practices
Variables included in the multivariate are those with *p*- values of less than 0.25 at bivariate level
*. *P*-value significant at 0.05 level. OR, adjusted coefficient, 95% CI, and confidence interval. *Ref*, reference group

Table 6 Factors Associated with Any Mistreatment of Women in Labor and Delivery in Bivariate and Multivariable Multi-level Regression Models (Observation), ($n = 240$): Outcome variable: Any Mistreatment of Women

Predictor	Bivariate			Multivariate		
	COR	95% CI	p-value	AOR	95% CI	*p*-value
Cadre						
Midwife (Ref: Others (Nurses, doctors, health officers)	0.48	0.15,1.57	0.226	0.56	0.13,2.44	0.441
Provider gender						
Female (Ref: Male)	0.85	0.29,2.49	0.769			
Facility type						
Hospital (Ref: Health center)	0.65	0.06,7.22	0.724			
Intervention status						
Comparison (Ref: Intervention)	5.41	0.80,5.41	0.083	4.65	0.51,42.5	0.174
Companion encouraged						
Yes (Ref: No)	0.422	0.11, 1.60	0.205	0.48	0.11,2.06	0.324
Annual number of deliveries	0.99	0.99,1.0	0.126	1.00	0.99,1.0	0.082
Number of beds	0.99	0.97,1.01	0.445			
Number of MNH staff	0.98	0.81,1.20	0.908			
Number of BEmONC trained staff	0.73	0.51,1.03	0.078	1.33	0.71,2.50	0.368
Region						
Amhara (Ref: Tigray)	0.28	0.01,5.7	0.408	0.23	0.01, 5.08	0.350
Oromiya	8.24	0.41,165.8	0.168	7.67	0.38, 156.03	0.185
SNNPR	7.29	0.45,117.9	0.162	10.88	0.62, 192.17	0.103

Notes. Any mistreatment of women during labor and delivery was defined as mean percentage score on a total of 10 aspects. *COR* crude odds ratio, *AOR* adjusted odds ratio, *95% CI* confidence interval, *Ref* reference group

encouraging this more frequently than hospitals. The practice occurred much more frequently than in a previous study in Ethiopia in 2012 that reported only 40% of women were allowed food or fluid intake during labor and delivery [20]. The reason for the higher rate in our study could be the result of exposure of providers to the in-service BEmONC training that includes an RMC session focused on interpersonal communication skill of providers, respecting culture, belief and values of clients [30].

Birth companions

Birth companions can improve experiences of women during labor and delivery; this is articulated in a statement by the World Health Organization [31]. One of the promising findings of this study was health workers' frequent practice of allowing a support person to be with women during labor. Four in five women were allowed to have a support person during labor, with no significant difference between health centers and hospitals. The finding was promising compared to another qualitative study, in Tanzania, that reported women felt ignored and neglected during child birth because family members or companions were not allowed to provide support [32]. Similarly, a study conducted in Jordan also revealed that women felt dissatisfied with the health system when they were not allowed to have a support person in delivery room [33].

Provider and facility factors

Several socio-demographic and health facility factors were found to be related to observed RMC practices. First, the type of health worker was significantly associated with provision of RMC care; midwives were better RMC service providers compared to nurses, health officers and doctors perhaps because their training focuses primarily on maternity care. In Ethiopia MNH service is provided by midwives, nurses, health officers and doctors. A Cochrane review on midwife-led models of care for childbirth in high income countries showed that midwife-led care was beneficial particularly for normalizing and humanizing childbirth [34].

Surprisingly, male providers were observed engaging in RMC practices more frequently than female providers. This finding is difficult to interpret and runs counter to stereotype of women being more empathic and caring than men. A clue from a study of nurses' abuse of patients in South Africa concluded that female nurses deployed violence against patients in their work as a means of creating social distance and maintaining fantasies of identity and power in their continuous struggle to assert their professional and middle class identity [5]. A literature review on barriers to quality midwifery care discussed the triple burdens faced by female midwives: (1) reproductive (childbearing), (2) productive

(economic), and (3) community management (e.g. unpaid work in support of the community). The effect of social, economic and professional barriers resulted in moral distress and burn out, which may have led to abusive behavior [35]. The sex and professional disparity in the provision of RMC calls for strengthened intervention starting from teaching institutions, in-service training and health program administration to institutionalize provision of RMC by all providers male and female. This is also in line with MOH's health sector transformational agenda of creating a caring, respectful and companionate health professionals [36].

The third factor that affected provision of RMC was the presence of birth companion. Women were more likely to receive RMC when birth companions were allowed in labor. Presence of birth companions helped the women receive emotional and physical support and comfort from their loved ones, and removed some of the burden from health workers. Respondents in studies in Tanzania discussed how birth companions assisted and encouraged women, because providers were absent [32, 37]. The WHO Safe Birth checklist also mentions companions in the context of calling providers for help when needed [38].

The final factor that showed a significant relationship to the provision of RMC services was implementation of SBM-R© quality improvement approach; facilities that implemented the approach showed higher level of RMC compared to those who did not. SBM-R© was one of the quality improvement approaches designed to promote RMC reviewed by Bowser and Hill in the 2010 landscape analysis exploring evidence for mistreatment of women in facility based childbirth [39]. Integrating RMC in quality improvement approaches is important in order to improve care for women. Experience of care is an integral part of the WHO's Quality of Care Framework for Maternal and Newborn Health [40] and RMC improves the experience of care.

Mistreatment of women

Article IV of the UN's universal rights of childbearing women document states that every woman has the right to be treated with dignity and respect [41]. In this study, more than a third of the women observed in delivery were not treated with respect, that is, they experienced at least one form of D&A, defined as physical abuse, verbal abuse, violation of privacy and abandonment. In observational studies, physical abuse (slapping/hitting) is expected to be low because of a potential observer effect. In this observational study however, the level of D&A was high compared to an exit interview of women conducted in four sub-counties and Nairobi, Kenya, which reported that 20% of women experienced any form of D&A [42]. However, it was low compared to the prevalence of D&A found in a study using exit interviews conducted in four health facilities in Addis Ababa, Ethiopia, in which 98% of women reported at least one form of D&A [43, 44]. Given the similar cultural contexts, we believe that there might have been some observational effect reducing the prevalence from what it might have been had there been no observers, though one cannot rule out an actual effect of the intervention without further research designed to rule out observer effects.

Physical abuse (woman being slapped or hit) was reported in 9% of the observations. This is much higher than observations of care in Tanzania where 2.7% of women living with HIV and 4.7% of women who were not HIV positive were physically abused in labor [45]. Levels of observed physical abuse in this study were also higher than those reported by four client exit interview studies in sub-Saharan Africa [43, 46]. The reason for high rates of physical abuse even in the presence of an external observer was unexpected and needs further investigation as to why health workers are committing such actions. Part of the reason could be rationalization of physical abuse by health providers, with the belief to ensure safety of newborn. In a qualitative study conducted among midwifery students in Ghana and health workers in Nigeria, some students and health workers mentioned it was necessary to hit women to gain compliance [47, 48].

In this study, eight percent of women were *verbally abused* by health providers. This was a little higher than an observational study in a hospital in Tanzania, where providers used non-dignified language with 5.6% and shouted at 6.6% of HIV-negative women while taking their medical history [45]. An exit interview study conducted in Ethiopia and Kenya showed 14% women in Addis Ababa hospitals [43] and 18% of women in Kenya were verbally abused [42]. Reasons for health providers verbally abusing laboring women were not explored in this study but qualitative study in Tanzania suggested coming too early or too late for delivery, wearing old dirty dresses and not pushing strongly were some of the reasons why women were verbally abused by providers [32]. A study in Ghana with midwifery students revealed that both students and their preceptors do not know how to encourage women to push or to open their legs [48].

The rate of verbal abuse observed was less than in client exit interview reports [42] [43]. Much work is needed to eliminate verbal abuse by health providers; treating every woman with respect and dignity is a human right issue.

Though there were factors found to be related to positive treatment of women in labor, assessment of socio-demographic and institutional related factors on

the observed mistreatment of women showed that none of the hypothesized factors were significantly associated. This may be related to a greater emphasis on promoting positive behaviors in the quality interventions than on eliminating negative ones, though this requires some investigation. Because we generally think of positive and negative treatment of women as being inversely related to each other and doing one would negate the other, it seems that this was not necessarily the case. Some additional analysis of the relationship between RMC practices and mistreatment of women behaviors may provide useful insight to clinicians, trainers and policy makers.

Strengths and limitations

A strength of this study is that it is one of the few that has explored prevalence of mistreatment of women through observation. Most studies conducted on mistreatment of women used client exit interviews to measure mistreatment of women, which may underestimate prevalence due to recall bias. The data collectors who observed provider-client interaction observation were clinicians experienced in BEmONC services, or independent consultants who worked in universities or other health facilities outside their permanent work stations.

Another strength of this study was that it covered both hospitals and health centers in the four major regions of Ethiopia, which strengthens its ecological validity. The study also has a number of limitations. Its main limitation is the cross-sectional design, which precludes any conclusion of causal effect. We found associations between some provider and facility-related factors and RMC but cannot conclude that these factors caused RMC. Another study limitation was the possible Hawthorne effect, in which providers will show acceptable behavior during service provision because they know that they are being observed. This effect usually diminishes with each observation and each provider was observed more than once. Also, we can not ignore the potential measurement error caused by differences in understanding among observers. To minimize the potential measurment error, highly experienced assessors who were national trainers of BEmONC training, who received 5 days of training for the observer role and were actively supervised. Lastly, the observation tool used in this study was not validated in Ethiopia as was the tool recently developed in Ethiopia [49]. However, the study team discussed each item in the tool with participants in the data collectors training. It was useful for the observation guides to collect information on both positive and negative behaviors.

Conclusion

MNH program managers and health professionals' educational institutions should consider the role of gender and profession on the practice of RMC services. More studies are needed to understand the individual, community, health provider and health facility related factors that affect experience of mistreatment of women in Ethiopia. Preservice education for the maternal health workforce (covers all cadre that work in maternity unit) needs to have RMC as a core area that deserves emphasis. Health care providers were uncomfortable allowing women to deliver other than lying down at their backs. MOH should condider strengthening the training in alternative birthing positions as part of inservice training and preservice education. In addition, inservice training as well as preservice education programs for health workers need to incorporate counselling and communication skills with women in labor. Making delivery beds available that allow alternative birth position in health facilites need to be prioritized. The study team also recommends MOH to consider the role of quality improvement approaches that incorporate providers's behavior on compassionate and respectful care needs to be implemented across facilites in Ethiopia. Moreover, MOH should establish or strengthen the exiting systems that foster accountability to the public and forms of redress when providers do not meet standards. Finally, the study team recommend health institutions should create greater awareness with the public on the levels of RMC that they should create systems to handle and address complaints.

Abbreviations

BEmONC: Basic Emergency Obstetrics and Newborn Care; CI: Confidence interval; D&A: Disrespect and abuse; MNH: Maternal and Newborn Health; MOH: Ministry of Health; OR: Odds ratio; RMC: Respectful Maternity Care; SBA: Skilled Birth Attendant; SBM-R©: Standards Based Management and Recognition

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Availability of data and material

The datasets during and/or analyzed during the current study available from the corresponding author on reasonable request.

Authors' contributions

EDS designed the study, analyzed data and wrote the first draft of a manuscript. EB, YMK co-designed the study and contributed to manuscript writing. SAW, HFB, TB, AE, HG, MMW, FA, TvdA, JS contributed to data interpretation and manuscript writing. All authors read and approved the final manuscript.

Competing interests

The authors declare that they have no competing interests.

Consent for publication

Not applicable.

Ethics approval and consent to participate
The study protocol was reviewed and approved by the National Ethics Review Committee (NERC) at the Ministry of Science and Technology in Ethiopia. The Johns Hopkins Bloomberg School of Public Health Institutional Review Board in Baltimore, Maryland, USA, indicated the study was exempt from oversight under U.S. legislation, 45 CFR 46.101(b). All participants gave signed consent forms.

Publisher's Note

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CHAPTER 4

Mistreatment of Women in Health Facilities

Mistreatment of women in public health facilities of Ethiopia
Ephrem D. Sheferaw, Young-Mi Kim, Thomas van den Akker and Jelle Stekelenburg

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Mistreatment of women in public health facilities of Ethiopia

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Abstract

Background: Recent evidence suggests that mistreatment of women during childbirth is a global challenge facing health care systems. This study seeks to explore the prevalence of mistreatment of women in public health facilities of Ethiopia, and identify associated factors.

Methods: A two-stage cross sectional sampling design was used to select institutions and women. The study was conducted in hospitals and health centers across four Ethiopian regions. Quantitative data were collected from postpartum women. Mistreatment was measured using four domains: (1) physical abuse, (2) verbal abuse, (3) failure to meet professional standards of care, and (4) poor rapport between women and providers. Percentages of mistreatment and odds ratios for the association between its presence and institutional and socio demographic characteristics of women were calculated using bivariate and multivariable logistic regression modeling.

Results: A total of 379 women were interviewed, of whom 281 (74%) reported any mistreatment. Physical and verbal abuse were reported by 7 (2%) and 31 (8%) women interviewed respectively. Failure to meet professional standards of care and poor rapport between women and providers were reported by 111 (29%) and 274 (72%) women interviewed respectively.
Multivariable logistic regression analysis revealed that the odds of reporting mistreatment were higher among women with four or more previous births (aOR = 3.36 95%CI 1.22,9.23, $p = 0.019$) compared to women with no previous childbirth, Muslim women (aOR = 3.30 95%CI 1.4,7.77, $p = 0.006$) and women interviewed in facilities with less than 17 births per MNH staff in a month (aOR = 3.63 95%CI 1.9,6.93, $p < 0.001$). However, the odds of reporting mistreatment were lower among women aged 35 and older (aOR = 0.22 95%CI 0.06, 0.73, $p = 0.014$) and among women interviewed between 8 and 42 days after childbirth (aOR = 0.37 95%CI 0.15, 0.9, $p = 0.028$).

Conclusion: Mistreatment during childbirth in Ethiopia is commonly reported. Health workers need to consider provision of individualized care for women and monitor their experiences in order to adjust quality of their services.

Keywords: Mistreatment, Disrespect and abuse, Respectful maternity care, Ethiopia

Plain English summary

Recent evidence suggests that mistreatment of women during childbirth is a global challenge facing health care systems. This study seeks to explore the level of mistreatment of women in public health facilities in Ethiopia and identify associated factors. The study was conducted in hospitals and health centers across four Ethiopian regions. Quantitative data were collected from postpartum women. Mistreatment was measured using four domains: (1) physical abuse, (2) verbal abuse, (3) failure to meet professional standards of care, and (4) poor rapport between women and providers. A total of 379 women were interviewed, of whom 281 (74%) reported any mistreatment. Physical and verbal abuse were reported by 7 (2%) and 31 (8%) women interviewed respectively. Failure to meet professional standards of care and poor rapport between women and providers were reported by 111 (29%) and 274 (72%) women interviewed respectively. The odds of reporting mistreatment were higher among women aged less than 25 compared to

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women aged 35 and above, those with four or more previous births compared to no previous birth, and also in those who gave birth in facilities with fewer (less than 17) births per MNH staff in a month. Mistreatment during childbirth in Ethiopia is commonly reported. Health workers need to consider provision of individualized care for women and monitor their experience in order to adjust quality of their services.

Introduction

The third Sustainable Development Goal aims to reduce the maternal mortality ratio (MMR) to below 70 per 100,000 live births in all countries by 2030 [1]. Ensuring access to skilled birth attendance in well-functioning health facilities is a widely-accepted strategy to prevent maternal mortality [2] . Recent studies in low- and middle-income countries on experiences of women during childbirth in health facilities have revealed unacceptable practices including disrespectful, abusive or neglectful treatment [3–6]. These experiences of mistreatment are identified as reasons for low institutional birth rates [7–10].

Ethiopia saw a dramatic decline in MMR from 1400 to 420 per 100,000 live births between 1990 and 2013 [11]. Despite this progress, the MMR remains unacceptably high. Ensuring access to maternity care by skilled providers working in a functional health facility forms the basis of the strategy formulated by the Federal Ministry of Health of Ethiopia to reduce maternal mortality. As part of this strategy, a large number of health centers and hospitals were built and staffed by essential health care providers over the past decade. Coverage of births attended in health facilities increased from 7 to 62% between 2007 and 2015 [12, 13]. The Ethiopian health system is structured into three tiers: primary, secondary and tertiary levels. The primary care level includes primary hospitals, health centers and health posts. The secondary level includes general hospitals and the tertiary level comprises specialized hospitals [14]. Most of the expansion in the health sector over the past decade occurred at the primary level [15, 16].

Although the Ministry of Health promotes the provision of compassionate and respectful care in these facilities, which includes individualized and culturally sensitive care for all women [17], some studies in Ethiopia indicate that physical and verbal abuse, non-consented care and lack of consideration of cultural practices related to childbirth by health workers may take place, possibly compounded by the increasing pressure on the health system due to the growing number of facility births [10, 18]. In this way, disrespectful and abusive behaviors by health providers during childbirth, which are known to be a significant barrier to increasing facility based births, could be a threat to the gains made in coverage of skilled birth attendance and to reductions of maternal mortality [19, 20].

Understanding the prevalence of mistreatment in Ethiopian maternity care facilities is therefore critical. Studies to date are limited in number, conducted in a limited geographic area or fail to apply similar definitions. In a previous study in a hospital and two health centers in Addis Ababa, 78% of respondents experienced one or more categories of disrespect and abuse including violation of the right to information, informed consent, and choice of position during childbirth [21] A study in four health centers in Amhara and SNNP regions, 21.1% of women reported occurrence of any disrespect and abuse [22]. A study using provider-client observations in 28 facilities across the four most populous regions in Ethiopia showed that 36% of women experienced any mistreatment [23]. On the other hand, a community based assessment in Tigray region reported that 22% of women experience mistreatment during childbirth in health facilities [24].

This study aimed to generate evidence on the prevalence of mistreatment of women in public health facilities as reported by women in Ethiopia and identify factors that may contribute to such mistreatment.

Materials and methods

Design

The study used a cross-sectional two-stage sampling design with quantitative data collection methods.

Setting

The study was conducted in June 2016, in 38 public hospitals and health centers across 4 regions in Ethiopia-Oromia, Amhara, Southern Nations Nationalities and Peoples (SNNP) and Tigray. Interviews were conducted in public hospitals and health centers in both urban and rural areas.

Data collection

Twelve data collectors, who were external to and clearly expressed not to be part of facility staff with a minimum of a BSc degree qualification, conducted the recruitment in postnatal and immunization units. Data collectors interviewed women in a private area within the premises of the health facilities immediately after childbirth or after women attended immunization and postnatal care services. Quantitative data on health facility policy were collected from facility managers and maternity unit leaders.

Four supervisors and two coordinators from the Maternal and Child Survival Program (MCSP) and the Ministry of Health coordinated the data collection process. Data collectors were external to the health facilities assessed. Study coordinators ensured that data collectors were competent in the application of the

standardized tools for data collection. All data collectors attended a three-day training workshop in Addis Ababa to ensure that they were oriented to scientific and ethical standards.

Participants

Maternity unit leads were interviewed about facility-related policies such as allowing non-harmful cultural practices during childbirth in health facilities and allowing women to choose their preferred birthing position. Women who had used skilled birth attendance services in public health facilities from 6 hours to 3 months prior to the start of data collection were included and interviewed about their birthing experiences.

Data sources

Since no validated tool for measuring mistreatment of women at the time of data collection was present in the literature, the study team utilized a structured interview tool for postpartum women adopted from the Population Council Heshima project that was piloted in Kenya and previously applied in Kenya, Tanzania and Ethiopia [16, 25]. The exit interview tool captured four of the seven types of mistreatment. These are: 1. Physical abuse, 2. Verbal abuse, 3. Failure to meet professional standard of care and 4. Poor rapport between women and providers [26]. For facility-related policy assessment, a survey tool was developed by the study team. The tools used are included in Additional files 1 and 2.

The outcome variable was any mistreatment, measured as a binary (yes/no) variable, which was defined as being present if any of the four categories of mistreatment was reported. Physical abuse included hitting, slapping or pinching. Verbal abuse included shouting, scolding, threatening to take women into the operating theatre or addressing women using insulting names. Failure to meet standards of care included neglecting women when they needed care at some point during labor and childbirth, ignoring women's requests for pain relief, providing treatment without consent and providing care that violated privacy of women. Poor rapport between women and providers included not greeting women, not explaining the labor progress, not responding to women's questions in a polite manner, not encouraging women to move around freely, not allowing women to bring a companion, not allowing women to give birth in their preferred birth position and not offering hot drinks or food after childbirth. Based on literature review and expert judgment of the investigators the following explanatory variables were assessed: socio demographic characteristics of women including age, educational status, marital status, employment status, number of previous births, religion, residence, antenatal care, follow-up visit, time of childbirth and interval between time of interview and childbirth. Similarly, facility-related explanatory variables such as facility type, a policy of organizing facility visits for pregnant women, a policy of reporting providers' misconduct, number of births per maternity care worker, and the proportion of maternity care providers trained in BEmONC were assessed.

Sampling

The sample size calculation for the client interview used assumptions of 95% level of confidence, variability of attributes related to Disrespect and Abuse (D&A) with a proportion of 0.14 (using the MCHIP study estimate of self-reported D&A prevalence in the same regions in 2014 [27]), and an anticipated non-response rate of 10%, plus or minus 4 percentage points of relative error (which is equivalent to 0.56% absolute margin of error), 10% non-response rate and using Design Effect (DE) of 1.2 since there were no estimates of DE from previous studies [28]. Using these statistical parameters, the total number of participants required for client interviews was 382. However, we planned to interview 380 women by allocating an equal number of ten clients from each facility using the strategy described below.

Sampling was conducted in two stages. First, 85 hospitals and 751 health centers that have an average of 60 births per month from the national health management information systems report were listed as sampling frame. These facilities were categorized into two groups, high volume and low volume facilities, using the median number of attended births per month; using power allocation 11 hospitals and 27 health centers (19 from high volume and 19 from low volume) were selected randomly using a systematic random sampling approach. In the second stage of sampling, 10 women from each selected facility were selected randomly in postnatal and immunization units. All clients that fulfilled inclusion criteria, having attended childbirth services in selected health facilities between 6 hours to 3 months prior to the interview were invited.

Data analysis

The study team leader supervised data entry and cleaning. Data were entered using EPI data software and exported to Stata 15.0 for further statistical analysis [29]. Before data analysis was started, the presence of extreme values was assessed using standardized scores of independent variables. Similarly, the effect of influential cases and leverage cases were assessed using residual analysis.

Frequencies and percentages of client background characteristics and birth experiences, availability of facility policies related to respectful maternity care (RMC) and components of mistreatment disaggregated by health center and hospital were calculated. Bivariate

analysis was performed to detect statistically significant associations between the outcome variable (mistreatment of women) and explanatory variables in the study group. Multivariable multilevel logistic regression analysis was used to identify factors associated with mistreatment of women. A *P*-value less than 0.25 in the binary analysis was used as the criterion to include a variable into the multivariable regression model. The explanatory variables included in the binary and multivariable regression were women's individual characteristics (age, education level, religion, marital status, parity, residence, time of birth and presence of complications at birth). Health facility characteristics recorded were proportion of maternal and child health care (MCH) providers trained in Basic Emergency Maternal Obstetric and Newborn Care (BEmONC), number of birth per MCH provider, availability of a policy of providing a tour for pregnant women around the maternity unit and availability of a policy of anonymous reporting of providers' misconduct. The effect sizes of individual and facility level factors on the reported mistreatment of women were expressed in crude odds ratios (OR) and adjusted odds ratios (aOR), with their respective 95% Confidence Intervals (CI).

Ethical considerations

This study was approved by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board in Baltimore, Maryland, USA. The institutional review board ruled the protocol exempt from review under 45 CFR 46.101(b)(5). The study was further approved by the national Ministry of Health and the regional health bureaus of Amhara, Oromia, Tigray and SNNPR. Structured interviews of women were conducted in a private area after receiving oral informed consent. The client consent forms were translated into and administered in the Amharic, Tigrigna and Afan Oromo languages.

Results

A total of 379 women were interviewed in 27 health centers and 11 hospitals in Oromia, Amhara, Tigray and SNNPR regions. Among 380 women we planned to interview, we could not interview three women in one of the hospitals because of temporary civil unrest in the town and an additional two women were interviewed in two other health centers.

A majority, 73 of the 107 (68%) participants interviewed in hospitals were urban residents compared to only 121 of the 272 (44%) participants interviewed in health centers. The percentage of women interviewed in the first week after childbirth was higher in health centers compared to hospitals (41% vs. 11%) (Table 1).

Table 2 describes policies on RMC in the facilities. Health facility managers and maternity unit leaders reported existence of most of the policies on RMC. The least reported policies were allowing non-harmful cultural rituals in health facilities (reported in 23 (85%) health centers and 4 (36%) hospitals) and allowing women a choice of birthing position (in 20 (74%) health centers and 6 (55%) hospitals).

Table 3 describes the level of self-reported mistreatment of women. Overall, three out of four women (74%, $n = 281$) reported any mistreatment during their latest childbirth experience in health facilities, with women in hospitals and health centers reporting 87 and 69% respectively.).

Physical abuse and verbal abuse were the least prevalent experiences of mistreatment reported by seven (2%) and 31 (8%) women respectively. Failure to meet standards of care (neglect, non-consented care, non-confidential care and pain relief ignored) was reported by 29%. On the other hand, poor rapport between women and providers was the most prevalent form of mistreatment, reported by 72% of the women. Standardized scores of independent variables confirmed that there were no extreme values. Similarly, residual analysis suggested the absence of influential and leverage cases.

Table 4 describes bivariate and multivariable logistic regression analysis of possible predictors of mistreatment of women.

In the bivariate analysis, compared to women interviewed in health centers those interviewed in hospitals (OR = 9.63 95%CI 1.25, 74.26, $p = 0.03$) were more likely to report mistreatment. Women who gave birth in health facilities with less than 17 births per month (OR = 5.46, 0.97, 30.62, $p = 0.054$) and with no policy of a facility tour for pregnant women (OR = 6.74 95% CI 1.23, 37.02; $p = 0.028$) were more likely to report mistreatment.

In a multivariable logistic regression analysis, the odds of reporting mistreatment were higher among women with four or more previous births (aOR = 3.36 95%CI 1.22, 9.23, $p = 0.019$) compared to women with no previous childbirth, among Muslim women (aOR = 3.30 95%CI 1.4, 7.77, $p = 0.006$) compared to Orthodox Christians and among women interviewed in facilities with less than 17 births per MNH staff in a month (aOR = 3.63 95%CI 1.9, 6.93, $p < 0.001$). However, the odds of reporting mistreatment were lower among women aged 35 and older compared to those younger than 25 (aOR = 0.22 95%CI 0.06, 0.73 $p = 0.014$) and among women interviewed between 8 and 42 days after childbirth (aOR = 0.37 95%CI 0.15, 0.9 $p = 0.028$).

Discussion

This study assessed the level of mistreatment of women during childbirth in 38 randomly selected health facilities with high and low case load across Tigray, Amhara,

Table 1 Background characteristics and birth experience of respondents

Variables	Total (*N* = 379)		Health Centers (*N* = 272)		Hospitals (*N* = 107)	
	N	Percent	N	Percent	N	Percent
Residence Location						
Urban	194	51	121	44	73	68
Rural	185	49	151	56	34	32
Residence region						
Tigray	40	11	20	7	20	19
Amhara	100	26	70	26	30	28
Oromia	139	37	112	41	27	25
SNNPR	100	26	70	26	30	28
Age						
< 25	167	44	116	43	51	48
25–34	177	47	129	48	48	45
35+	34	9	26	10	8	7
Education - ever attended school	278	73	192	71	86	80
Highest level of school attended						
Informal education/can read and write	7	3	6	3	1	1
Primary (1–8)	137	50	106	56	31	36
Secondary	86	31	51	27	35	41
TVET/College/University	46	17	27	14	19	22
Religion						
Muslim	107	28	87	32	20	19
Orthodox Christian	195	52	130	48	65	61
Other Christian (protestant, catholic etc)	76	20	55	20	21	20
Marital status						
Never married / Single/divorced	12	3	8	3	4	4
Currently married or co-habiting	366	97	263	97	103	96
Employment status						
Not employed /house wife	264	70	199	73	65	61
Employed	97	26	61	23	36	34
Student	17	4	11	4	6	6
Parity - births ever had including most recent						
1	162	43	104	38	58	54
2–3	115	30	85	31	30	28
4 +	102	27	83	31	19	18
Duration between birth and interview						
Less than a week	73	19	29	41	44	11
1–6 weeks	136	36	99	35	37	36
7–12 weeks	170	45	144	24	26	53
Time of birth						
Night time	179	47	131	45	48	48
Day time (6:00 AM-6:00 PM)	199	53	140	55	59	52

Table 2 Availability of Facility based Policies on Respectful Maternity Care, $N = 38$

Availability of Policy related to RMC	Total ($n = 38$)		Health Center ($n = 27$)		Hospital ($n = 11$)	
	N	%	N	%	N	%
Freedom of movement during labor (i.e., walking around)	38	100	27	100	11	100
Prevention of institutional violence against women and newborns	38	100	26	100	12	100
Requirement of informed consent for procedures	36	95	25	93	11	100
Keeping the newborn with the mother immediately after the birth	34	89	25	93	9	82
Admission of family members/ person of choice to accompany women during labor/childbirth	33	87	24	89	9	82
Keeping mother and baby together in the facility	34	89	25	93	9	82
Policy of allowing non harmful cultural rituals in the facility	27	71	23	85	4	36
Allowing women a choice of position for birth	26	68	20	74	6	55

Oromia and SNNP regions in Ethiopia. The four regions included in the study represent more than 86% of the total population of the country [30]. Policies of RMC at facility level that aim to improve women's experiences, including allowing a birth companion of choice, keeping newborn and mother together following childbirth, and allowing women to take their preferred birthing position were not universally observed. The observed discrepancy could be due to lack of focus by the leadership of health facilities and lack of monitoring on the policies by district and regional level health managers. A systematic review on RMC policies previously showed that such policies are feasible in low resource settings if these are prioritized [31].

Three-fourth of women interviewed reported experiencing any mistreatment. These findings are consistent

Table 3 Types of mistreatment reported by women, $N = 379$

Categories	Total		Health center		Hospitals	
	N	%	N	%	N	%
Any mistreatment	281	74	188	69	93	87
Physical abuse: hit /slapped/pinched by the provider**	7	2	5	2	2	2
Verbal abuse: shouted at, scolded, threatened with going to operating theatre, called by insulting name	31	8	20	7	11	10
Failure to meet professional standards of care: (at least one of the 4)	111	29	80	29	31	29
Neglect: Client left unattended when needed care at any point in stay	39	10	28	10	11	10
Client's request for pain medication was ignored: (among those that requested it; $N = 117$, Health Center = 80, Hospital =37)	43	37	36	45	7	19
Non-consented care: Any treatment done without women's permission**	59	16	38	14	21	20
Non-confidential care: At any point during Labor and childbirth stay client were treated in a way that violated privacy	24	6.3	18	6.6	6	5.6
Poor Rapport between women and providers: (at least one of the 7)	274	72	181	67	93	87
Poor Reception: The health workers did not greet woman when she came to this facility during Labor and childbirth	64	17	41	15	23	21
No Explanation during labor: The health workers did not explain the next steps during Labor and childbirth to clients	181	48	154	43	44	41
Not Responding to questions: The health workers did not respond to clients' questions politely	212	16	24	15	14	18
Free Movement not encouraged: Health workers do not encourage women to walk and change positions during Labor and childbirth	113	30	73	73	40	63
Not Allowing Birth companion during labor	105	28	69	25	36	34
Birth Position of women choice was not respected: The health workers did not allow women to give birth in the position they wanted during Labor and childbirth	217	56	142	51	75	69
Food and drink not offered: After childbirth, women were not offered hot drinks or food	62	16	39	14	23	21

• *P*-values are from logistic regression ** three missing cases

Table 4 Logistic regression analysis of socio-demographic variables of women and Environmental characteristics on the reported mistreatment of women

	Bi-variable			Multivariable		
Mistreatment	OR	[95% CI]	P-value	aOR	[95% CI]	P-value
Age category (ref: < 25)						
25–34	1.51	0.73,3.11	0.266	1.00	0.47,2.13	0.999
35+	0.68	0.23,2.04	0.491	0.22	0.06,0.73	0.014*
Marital status (ref: Currently married)						
Single or divorced	1.75	0.18,17.5	0.633			
Parity (Ref. 1)						
2 to 3	0.62	0.28,1.37	0.239	0.94	0.44,1.98	0.867
4+	1.80	0.75,4.33	0.189	3.36	1.22,9.23	0.019*
Education level (ref: TVET/College/University.)						
informal/no education	1.96	0.05,81.71	0.724			
Primary (1–8)	1.72	0.41,7.26	0.462			
Secondary	0.66	0.16,2.67	0.557			
Religion (ref: Orthodox Christian)						
Muslim	3.24	0.95,11.13	0.061	3.30	1.4,7.77	0.006*
other Christians (Prot., catholic)	1.39	0.32,6.11	0.662	1.61	0.63,4.09	0.317
Facility (ref: Health center)						
Hospitals	9.63	1.25,74.26	0.03	2.09	0.92,4.76	0.077
Region						
igray	2.04	0.11,36.56	0.63	1.21	0.35,4.2	0.759
Amhara	0.88	0.12,6.65	0.903	1.67	0.7,4.01	0.248
SNNPR	0.09	0.01,0.7	0.021	0.19	0.08,0.44	< 0.001*
Residence (ref: rural)						
Urban	1.26	0.52,3.04	0.607			
ANC visits (ref. < 4)						
4+	1.69	0.78,3.67	0.183	1.26	0.67,2.38	0.47
Time from childbirth to interview (ref: First week)						
1–6 weeks	0.37	0.12,1.12	0.079	0.37	0.15,0.9	0.028*
7–12 weeks	0.66	0.21,2.04	0.470	0.88	0.35,2.21	0.779
Childbirth time (ref. night)						
Day time	1.31	0.66,2.59	0.434			
Monthly childbirth per MNH Staff (Ref. > 17)						
Less than 17	5.46	0.97,30.62	0.054	3.63	1.9,6.93	< 0.001*
MNH staff trained in BEmONC (Ref. < 50%)						
50% or more	3.41	0.62,18.69	0.157	1.45	0.75,2.82	0.27
Policy of facility tour for pregnant women (ref. yes)						
No	6.74	1.23,37.02	0.028	1.72	0.89,3.32	0.11
Policy of anonymous (ref. yes)						
No	3.27	0.2,52.57	0.402			

** Ref: Reference group. aOR: Adjusted odds ratio, * Statistically significant at Alpha = 0.05*

with previous studies from the Ethiopian cities Addis Ababa and Bahirdar in which 78 and 67.1% of women reported disrespect and abuse respectively [21, 32]. However, our finding was higher than three other studies conducted in Ethiopia reporting 21–36% of mistreatment based on provider-client structured observation [23, 24, 33].

Physical abuse was reported by only 2 % women which was comparable to a study in Addis Ababa that reported 2.3% physical abuse [21] and a study in Tanzania that reported 2.7% physical abuse in exit interview [5]. Our finding was higher than a study conducted in Tigray region that reported 0.8% physical abuse [24] and a study conducted in Amhara and SNNPR regions that reported 0.5% physical abuse [33]. Our finding was lower than a previous study in the same four regions in Ethiopia that reported 9% physical abuse using structured observation [23] and much lower than a community based study among women in Bahirdar town that reported 23.2% physical abuse [32].

Verbal abuse was reported by 8 % women which was comparable to our previous study in the same four regions in Ethiopia that reported 8 % verbal abuse [23], a study in Addis Ababa that reported 7.5% insult, intermediation, threat or coercion [21] and a study in Tanzania that reported 8.7% women being shouted at [34]. But the reported level of verbal abuse was lower than a study in Bahirdar town that reported 27.1% of women reported verbal insult committed by providers [32] and a study conducted in Tigray region that reported 12.5% women being shouted at and 10.5% women being scolded [24].

Nearly one in three women reported failure to meet professional standards of care that included being left unattended (10%), pain relief medication being denied (37%), non-consented care (16%) or non-confidential care (6.3%). Previous studies in Ethiopia did not use a comprehensive definition for failure to meet professional standard of care but different studies reported its components. The finding reported for components of failure to meet professional standards of care was consistent with a study conducted in Amhara and Oromia regions that reported 15.2% women experienced violation of privacy, 17.8% women experienced non consented care [22] and a study conducted in Tanzania that reported 8.7% women were left unattended [5]. The finding on some components were not consistent with our previous study in the four regions that reported 17% women experienced violation of privacy and 19% women experienced being left unattended [23] and a study in Tigray region that reported 6% women were left unattended [24].

Nearly three out of four women experienced poor rapport with providers that include poor reception of women (17%), next steps not explained (48%), not responding to women questions (16%), not allowing birth companion (28%) and not allowing women preferred birth position (56%). The findings on poor rapport between women and providers was one of the first finding to our knowledge. Other studies assessed components of poor rapport between women and providers. The reported level of poor reception was lower than previous study in the same regions that reported 23% women were not greeted and received politely [23]. The reported level of poor communication was higher than previous study that reported 35% women did not receive explanation about next steps [23].

Our findings show that women younger than 25 years were more likely to report mistreatment compared to those 35 years and above. This finding for younger groups of women is consistent with other studies in South Africa, Uganda and rural Australia suggesting that young women may be more likely to be mistreated or discriminated against by health providers, and sometimes blamed for getting pregnant at a younger age [26, 35–38]. It is possible however, that compared to the older age group, these women have different expectations from the health system and/or have been sensitized to respectful care to a larger extent. Older women may either have normalized the experience of mistreatment [6] or may feel barriers to report it. Muslim women were more likely to report mistreatment compared to Orthodox Christians. It is unclear whether cultural and religious expectations of Muslim women related to privacy and sex of the care provider play a role. Alternatively, Muslim women could be discriminated against by care providers. A study in Afar, Ethiopia, a predominantly Muslim community, revealed that women did not seek maternity care from health facilities because of poor services and unfriendly or even abusive treatment during childbirth [39]. A study in Ghana suggested that Muslim women did not seek maternity care from health facilities because health care providers' lack of knowledge and insensitivity to religious and cultural practices of Muslim women [40].

Women interviewed during eighth to 42 days after childbirth were less likely to report mistreatment compared to those interviewed in the first 7 days. The reason for reporting higher rates of mistreatment during the first 7 days after childbirth and lower rates after the seventh day could be due to a fresh memory of the birthing experience in the first week. Women may not have reported negative experiences for fear of reprisal by health care providers during their visit for immunization. A previous study in Tanzania in which women were interviewed in health facilities after childbirth and after a 5–10 week follow-up showed an increase in the level of mistreatment reported, considering that the follow-up interview was held at the woman's home [5].

Women with four or more previous births were more likely to report mistreatment. Discrimination of women based on parity was identified in a systematic review [26]. This finding is consistent with a study in Kenya that reported women with four to nine previous births

being more likely to experience some form of mistreatment including non-consented care, detainment for lack of payment and being requested for bribes [25]. Facility level factors significantly associated with mistreatment of women were the number of births per MNH provider. Women interviewed in facilities with lower numbers of monthly births (< 17) per MCH provider were more likely to report mistreatment. With increasing numbers of births per MNH provider, the odds of reporting mistreatment decreased. This is consistent with the finding of a systematic review conducted in five African countries, which indicated that facilities with a low case load were associated with poor quality of basic maternity care services [41].

The reason for lower levels of mistreatment in facilities with relatively high numbers of births per MCH provider could have a causal relationship, and the other way around. In other words, high or low volume of clients could be the result of previous treatment that women experienced in these facilities, either attracting them to come or making them give birth elsewhere. However, this finding contradicts with assumptions suggesting that health providers mistreated women due to high work load. High workload was identified as a cause of negative attitudes and behavior of maternity care providers in a systematic review in low- and middle-income countries [42]. Another reason for the increase in mistreatment in facilities with lower maternity case load per provider could be the rapid expansion of these facilities since most of the new facilities usually have low case load due to preference of women for previously established facilities.

This study measured prevalence of mistreatment, using a nationally representative sample of health facilities in the four largest regions of the country. However, there are some limitations. This assessment was conducted on the premises of health facilities instead of women's homes. This may create courtesy bias, i.e. women may have provided socially desirable responses to data collectors because of fear of repercussions during postnatal care visits. To mitigate this problem, data collectors were trained to ensure privacy and confidentiality of information. Another limitation could be recall bias leading to underreporting of some of the events, since interviews were conducted within the same day to 3 months after childbirth. Those women interviewed weeks after childbirth may have forgotten some of the interactions with health providers that would have been categorized as mistreatment. However, earlier studies on birthing experiences of women reported that women remember negative experiences for long periods of time [43]. Another limitation, inherent to study design, is the fact that residual confounding variables such as unmeasured provider and facility characteristics may have affected study findings.

Conclusions

This study identified that most women experienced some form of mistreatment during childbirth in Ethiopian health facilities. Younger women, women with four or higher previous childbirths, Muslim women, women who received childbirth services in health facilities with low numbers of births per provider were disproportionately affected by mistreatment. Health workers efforts to improve respectful maternity care should consider such factors that are associated with mistreatment of women in health facilities. Health providers need to provide culturally sensitive women-centered care considering particular needs of each woman (younger versus older women) and continuously monitor experiences of women. National and regional level policy makers and program managers should investigate reasons for lower case load per provider in some health facilities so as to make appropriate corrective measures.

Additional files

Additional file 1: Exit interview tool. (PDF 589 kb)
Additional file 2: RMC policy assessment tool. (PDF 151 kb)

Abbreviations

aOR: Adjusted Odds Ratio; BEmONC: Basic Emergency Obstetrics and Newborn Care; CI: Confidence Interval; D&A: Disrespect and Abuse; DE: Design Effect; MCSP: Maternal and Child Survival Program; MMR: Maternal Mortality Ratio; MNH: Maternal and Newborn Health; MOH: Ministry of Health; OR: Odds Ratio; RMC: Respectful Maternity Care; SNNPR: Southern Nation Nationalities Peoples Region; USAID: United States Agency for International Development

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Authors' contributions

EDS contributed to the conceptualization, data analysis, original draft preparation and editing of the manuscript. YMK, TVA and JS contributed to the conceptualization, writing- review and editing of the manuscript. All authors read and approved the final manuscript.

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Availability of data and materials

The datasets used during the current study is available from the corresponding author on reasonable request.

Ethics approval and consent to participate

The Johns Hopkins Bloomberg School of Public Health Institutional Review Board in Baltimore, Maryland, USA, exempted the study from oversight under U.S. legislation, 45 CFR 46.101(b) Category (5).

Consent for publication

Not applicable.

Competing interests
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Publisher's Note

CHAPTER 5

Gender Difference in Acceptance of Mistreatment of Women

Development and use of a scale to assess gender differences in appraisal of mistreatment during childbirth among Ethiopian midwifery students
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RESEARCH ARTICLE

Development and use of a scale to assess gender differences in appraisal of mistreatment during childbirth among Ethiopian midwifery students

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Abstract

Mistreatment during childbirth occurs across the globe and endangers the well-being of pregnant women and their newborns. A gender-sensitive approach to mistreatment during childbirth seems relevant in Ethiopia, given previous research among Ethiopian midwives and patients suggesting that male midwives provide more respectful maternity care, which is possibly mediated by self-esteem and stress. This study aimed a) to develop a tool that assesses mistreatment appraisal from a provider's perspective and b) to assess gender differences in mistreatment appraisal among Ethiopian final-year midwifery students and to analyze possible mediating roles of self-esteem and stress. First, we developed a research tool (i.e. a quantitative scale) to assess mistreatment appraisal from a provider's perspective, on the basis of scientific literature and the review of seven experts regarding its relevance and comprehensiveness. Second, we utilized this scale, the so-called Mistreatment Appraisal Scale, among 390 Ethiopian final-year midwifery students to assess their mistreatment appraisal, self-esteem (using the Rosenberg Self-Esteem Scale), stress (using the Perceived Stress Scale) and various background characteristics. The scale's internal consistency was acceptable (α = .75), corrected item-total correlations were acceptable (.24 - .56) and inter-item correlations were mostly acceptable (.07 - .63). Univariable (B = 3.084, 95% CI [-.005, 6.173]) and multivariable (B = 1.867, 95% CI [-1.472, 5.205]) regression analyses did not show significant gender differences regarding mistreatment appraisal. Mediation analyses showed that self-esteem (a_1b_1 = -.030, p = .677) and stress (a_2b_2 = -.443, p = .186) did not mediate the effect of gender on mistreatment appraisal. The scale to assess mistreatment appraisal appears to be feasible and reliable. No significant association between gender and mistreatment appraisal was observed and self-esteem and stress were not found to be mediators. Future research is needed to evaluate the scale's criterion validity and to assess determinants and consequences of mistreatment during childbirth from various perspectives.

and analysis, decision to publish, or preparation of the manuscript.

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Introduction

Every day, about 800 women and 7,300 newborns die from causes related to pregnancy and childbirth [1,2]. Most of these deaths are preventable and occur in low-income countries, especially in Sub-Saharan Africa [3]. Ethiopia has one of the highest numbers of maternal and newborn deaths, with a maternal mortality ratio of 353 and a neonatal mortality rate of 2,800 per 100,000 live births [4,5]. Skilled birth attendants play an essential role in reducing maternal and newborn mortality [6]. However, only 28% of births in Ethiopia were attended by health professionals in 2016, in stark contrast to the 78% globally [7,8]. A factor that may account for the underuse of maternal healthcare services in low-income settings is care providers' mistreatment of women during childbirth, which creates fear and hesitancy in women when approaching health facilities for delivery care [9–11].

Mistreatment during childbirth is a human rights violation that can be defined as conditions and encounters experienced as humiliating or undignified [12,13]. Bohren et al. [14] created an evidence-based typology of mistreatment that describes its emergence at an interpersonal but also at a health system level and comprises seven domains: 1. physical abuse, such as slapping, 2. sexual abuse, such as rape, 3. verbal abuse, such as shouting, 4. stigma and discrimination, such as providing poor treatment due to HIV status, 5. failure to meet professional standards, such as neglect, 6. poor rapport between women and providers, such as dismissal of women's concerns, and 7. health system conditions and constraints, such as lack of privacy. Mistreatment is often justified as a means of punishment for patients' misbehavior [15]. It is also believed to increase women's cooperation during childbirth, which in turn is thought to benefit the well-being of the newborn, while long-term physiological and psychological damage to its victims is often disregarded by both care providers and society [11].

Mistreatment during childbirth has been frequently observed at Ethiopian obstetric care facilities. A study that looked at mistreatment during childbirth in Ethiopia indicated that 36% of women reported at least one form of mistreatment, with a high prevalence of neglect (19%), privacy violations (17%), physical abuse (9%) and verbal abuse (8%) [16]. Moreover, research has pointed towards settings in which Ethiopian patients were not allowed to bring birth companions and deliver in their preferred birthing position, next to being subjected to inadequate pain management and being exposed to healthcare interventions, such as episiotomies, without giving their consent [17].

Previous research on mistreatment during childbirth has mostly been qualitative, which limits the generalizability of study outcomes [14]. A research tool (e.g. a quantitative scale) is needed in order to assess to what extent Ethiopian care providers are prone to mistreat their patients during labor. Recently, Sheferaw et al. [18] created a quantitative scale to assess patients' perception of mistreatment during childbirth. However, to our knowledge there is no quantitative scale that assesses care providers' perspective of mistreatment during childbirth. Such a scale could generate generalizable results when appraising risk factors among care providers that are related to mistreatment during childbirth. This may provide sound insights for respectful maternity care (RMC) interventions, which can be of particular interest to the Ethiopian government that aims to promote RMC with efforts that encompass enhancing the curriculum of health science programs and offering training to health professionals with its Health Sector Transformation Plan [19].

For the development and implementation of effective RMC interventions, it is essential to gain a better understanding of the etiology of mistreatment during childbirth [14]. Mistreatment during childbirth is a complex issue that not solely arises at a societal level (e.g. due to gender inequality) and at an organizational level (e.g. due to a lack of resources), but also at an individual level (e.g. due to care providers' behavior towards women) [20]. Previous research

has outlined some individual level risk factors among care providers; however, Ethiopia-specific research on this topic is scarce and it has been mostly conducted among working midwives [16,17]. Such research has in fact shown that care providers' gender may constitute an important risk factor for mistreatment during childbirth in Ethiopia, with male gender being linked to greater competence and professionalism in the field of midwifery [17,21]. In a similar vein, research among Ethiopian healthcare providers has pointed towards more RMC provision among male midwives, which implies more patient abuse among female midwives, who form the majority (78%) of the Ethiopian midwifery workforce [16,22]. If female care providers are indeed more likely to mistreat women during childbirth, this constitutes an additional challenge to the use of maternal health services in certain ethnic groups, such as the Afar, who are reluctant to expose their reproductive health organs to male midwives due to cultural conventions [23].

Two factors that can possibly account for the above-mentioned gender differences are care providers' self-esteem and stress. That is, lower self-esteem and more stress among females have been linked to unprofessionalism and aggression among healthcare staff [24–26]. Self-esteem can be defined as the overall evaluation of one's worth as a person and stress can be defined as an emotional and physiological response to demands that exceed personal resources [27,28]. Healthcare staff in low-income settings often does not receive much acknowledgment and respect, which has been associated with low self-esteem [29]. Moreover, due to challenging working conditions that include frequent exposure to emotional needs of patients, as well as responsibility and task overload, stress levels in the healthcare branch are high [30,31]. A lack of basic resources in low-income settings further increases care providers' stress levels [11].

Altogether, these findings lead to the two aims of this study, which were a) to generate a quantitative research scale that assesses mistreatment appraisal from a provider perspective, the Mistreatment Appraisal (MISAP) Scale, and b) to assess gender differences in mistreatment appraisal and the possible mediating roles of stress and self-esteem on the basis of this new scale. We hypothesize more positive appraisal of mistreatment during childbirth among female study participants. More stress and less self-esteem among females are thought to play a mediating role herein. Social desirability bias is likely to affect the assessment of mistreatment appraisal (i.e. causing lower mistreatment appraisal outcome scores). We decided to sample final-year midwifery students, instead of working midwives, in order to minimize the impact of social desirability bias. Final-year midwifery students have prior working experience, due to previously completing a practical internship. However, due to limited accountability, we believe students to answer questions more truthfully.

Methods

Design, setting and population

This study was conducted in two phases, related to the two aims of the study. In the first phase, we developed the MISAP Scale with suitable content validity. Therefore the following steps were needed:

- The identification of relevant forms of mistreatment during childbirth, using the typology of mistreatment by Bohren et al. [14];
- The development of a continuous scale of the appraisal of these distinguished types of mistreatment from a care provider perspective on the basis of a) scientific literature, and b) a review of the items by seven experts from the Ethiopian Ministry of Health, the Ethiopian Midwives Association, the Ethiopian Society of Obstetricians and Gynecologists, Jhpiego Ethiopia, Leiden University Medical Center and University Medical Center Groningen. These experts were all public health practitioners with master's and/or PhD degrees in public

health. They had 10 to 20 years of experience in public health and clinical practice. Experts were asked to evaluate questions' relevance on a scale from 1 (*very irrelevant*) to 10 (*very relevant*), with relevance referring to 'the quality of being appropriate for the context'. Clarity was assessed on a scale from 1 (*very unclear*) to 10 (*very clear*), which clarity referring to 'the quality of being comprehensible'. Experts could also provide question-specific feedback by adding additional comments and suggestions. Relevance ratings were used to evaluate whether to retain or remove questions. The criterion for removing questions was a relevance rating of 5 or lower by at least two experts. Based on their comments, one item was excluded and all items were rephrased, which resulted in the 10-item MISAP Scale (S1 Appendix);

- The implementation of a pretest for which we sampled 11 final-year midwifery students from Menelik Health Science College (HSC) in November 2017, before the onset of the second phase. We concluded from this pretest that all questions were comprehensible.

In the second phase, final-year midwifery students from Gondar University, Bahir Dar University, Bahir Dar HSC, Hawassa HSC, Arsi University and Menelik HSC in Ethiopia were invited to participate in this study in November and December 2017. Local professional local data collectors were hired and interactions between foreign researchers and study participants were avoided in order to limit response bias. Data collectors provided instructions and ensured that students completed the questions individually, for which they were given as much time as needed. Sampling bias is very unlikely as students were approached during class and more than 99% of the approached students (392 of 393 students) agreed to participate. Two students were excluded from the analysis, due to not indicating a gender and completing an English version instead of an Ethiopian version of the questionnaire. The final study population consisted of 390 students (151 males, 239 females). The study protocol was reviewed and approved by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board (IRB00008218). All students provided informed verbal group consent before participating.

Sample size calculations were based on expert ratings of our Ethiopian colleagues and conducted for proportions of two independent samples. We assumed a cut-off value of 55 for the MISAP Scale (i.e. the midpoint of theoretical total mean outcome scores), with values $\geq$55 being categorized as positive appraisal of mistreatment. In order to assess a difference between males and females of at least 15% (50 vs 65%), an alpha level of .05 and a power of .80 yielded a sample size of 362 (137 males and 225 females). We accounted for a sex ratio of 1.64, which was based on national student enrollment data that was previously collected by Jhpiego Ethiopia.

Data collection

Students were invited to complete a paper-and-pen questionnaire, which included questions on background characteristics, self-esteem, stress and mistreatment appraisal. Previously translated Amharic versions of the Rosenberg Self-Esteem Scale and Perceived Stress Scale that showed acceptable degrees of internal consistency (α = .73 and α = .76, respectively) were used to assess self-esteem and stress [32,33]. Remaining questions were translated to Amharic and back-translated to English by two Ethiopian epidemiology master students from the University of Groningen, the Netherlands, before the implementation of the pretest. One student translated English questions to Amharic and the other student translated Amharic questions to English. Inconsistencies were subsequently discussed and adjusted.

Variables

The *outcome variable* was mistreatment appraisal (α = .75) and it was assessed with the newly-developed, continuous 10-item MISAP Scale. Students were asked to rate actions that depict

mistreatment on a scale ranging from 1 *(oppose strongly)* to 10 *(support strongly)*, yielding theoretical total mean outcome scores of 10 to 100, with higher scores depicting more positive mistreatment appraisal. We allowed 20% of the mistreatment appraisal items to be missing, which was the case in 6% ($N = 25$). When data were missing, weighted mean sum scores were calculated.

The *independent variable* was gender (male or female).

Covariates included institution (Gondar University, Bahir Dar University, Bahir Dar HSC, Hawassa HSC, Arsi University or Menelik HSC), ethnicity (Amhara, Oromo or other), place of origin (urban or rural), type of program (regular or extension, which is a program for individuals with prior working experience in the midwifery branch) and age (in years).

As *mediating variables*, self-esteem and stress were considered. Self-esteem ($\alpha = .61$) was assessed with the 10-item Rosenberg Self-Esteem Scale, which ranges from 1 *(strongly agree)* to 4 *(strongly disagree)* and theoretically yields scores of 10 to 40, with higher scores indicating more self-esteem [34]. Due to ambiguous wording, one item *(I wish I could have more respect for myself)* was removed, which increased the scale's internal consistency ($\alpha = .72$), yielding theoretical scores of 9 to 36. Stress ($\alpha = .71$) was measured with the 10-item Perceived Stress Scale, which ranges from 0 *(never)* to 4 *(very often)* and yields theoretical scores of 0 to 40, with higher scores depicting more stress [35]. We allowed 20% of the self-esteem and stress items to be missing, which was the case in 7% ($N = 27$) and 6% ($N = 25$), respectively. When data were missing, weighted mean sum scores were calculated.

In total, 1% of all values were missing (i.e. 35 values). To reduce the impact of missing data, we used multiple imputation to generate five datasets for our main analyses. Data imputation was conducted for place of origin (1 value), age (21 values), stress sum scores (7 values) and mistreatment appraisal sum scores (6 values). Imputed values were sampled from a predictive distribution based on the associations between all covariates, as well as all outcome and independent variables [36].

Statistical analyses

Baseline characteristics of the study population were reported with descriptive statistics. Independent sample t-tests and chi-square ($\chi 2$) tests were used to assess gender differences at baseline.

The scale's feasibility was determined by exploring missing values per item. Its reliability was assessed with the internal consistency coefficient, Cronbach's alpha. To test the scale's homogeneity, we calculated corrected item-total and inter-item correlations.

Univariable and multivariable linear regression analyses were applied to assess the association between gender and mistreatment appraisal, upon examining the assumptions of linearity [37]. Next mediation analyses were performed. Mediation analyses were conducted with the lavaan package version 0.6–3 in R statistical software version 3.5.1 for Windows. All other analyses were performed with SPSS statistical software version 25 for Windows. P-values $< .05$ were considered significant.

Results

Background characteristics

Table 1 displays background characteristics of the study population. Most students were enrolled at Gondar University (33%), identified as Orthodox (78%), indicated Amhara as their ethnicity (65%), had an urban origin (53%), attended a university (69%) and were enrolled in a regular study program (59%). Students were on average 24 years old and they had high self-esteem (*mean* 29.39, *SD* 4.27) and moderate stress levels (*mean* 15.22, *SD* 5.71). Significant

Table 1. Background characteristics and mediating variables by gender.

Variable	Total (*N* = 390)	Female (*N* = 239)	Male (*N* = 151)	
	Number (%)	*Number (%)*	*Number (%)*	*p-value*
Institution				< .001
Gondar University	130 (33)	83 (35)	47 (31)	
Bahir Dar University	38 (10)	9 (4)	29 (19)	
Bahir Dar HSC	39 (10)	14 (6)	25 (16)	
Hawassa HSC	42 (11)	29 (12)	13 (9)	
Arsi University	59 (15)	35 (14)	24 (16)	
Menelik HSC	82 (21)	69 (29)	13 (9)	
Religion				.239
Orthodox	303 (78)	178 (74)	125 (83)	
Protestant	39 (10)	29 (12)	10 (7)	
Islam	42 (11)	28 (12)	14 (9)	
Other	6 (1)	4 (2)	2 (1)	
Ethnicity				.775
Amhara	254 (65)	154 (64)	100 (66)	
Oromo	66 (17)	43 (18)	23 (15)	
Other	70 (18)	42 (18)	28 (19)	
Place of origin				< .001
Urban	208 (53)	156 (65)	52 (34)	
Rural	181 (47)	82 (35)	99 (66)	
Missing	1 (0)	1 (0)	0 (0)	
Type of education				.047
University	269 (69)	155 (65)	113 (75)	
HSC	121 (31)	83 (35)	38 (25)	
Type of program				.009
Regular	229 (59)	128 (54)	101 (67)	
Extension	161 (41)	111 (46)	50 (33)	
	mean (SD) Number (%)	*mean (SD) Number (%)*	*mean (SD) Number (%)*	*p-value*
Age	23.59 (2.55)	23.47 (2.66)	23.78 (2.36)	.267
Missing	21 (5)	13 (5)	8 (5)	
Self-esteem	29.39 (4.27)	29.54 (4.17)	29.15 (4.44)	.380
Stress	15.22 (5.71)	15.41 (5.60)	14.92 (5.89)	.404

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gender differences were detected for four variables: females were more often enrolled at Gondar University (35% versus 31%), Hawassa HSC (12% versus 9%) and Menelik HSC (29% versus 9%), they originated more frequently from urban areas (65% versus 34%), attended a HSC (35% versus 25%) and/or followed an extension program (46% versus 33%).

Psychometric assessment of the MISAP Scale

In total, 59 values (2%) of all items of the MISAP Scale were missing. Table 2 shows that the percentage of missing values per item ranged from 1% to 3%. The internal consistency of MISAP Scale was acceptable ($\alpha = .75$) and deleting any of the items would not have increased the scale's internal consistency considerably. Corrected item-total correlations were acceptable, ranging between .24 and .56 [38]. Inter-item correlations were mostly acceptable, ranging from .07 to .63 (S1 Table) [39]. Item 7 was most frequently favored. Yet, this item also showed

Table 2. Item characteristics of the MISAP Scale in a cohort of Ethiopian midwifery students.

	Item									
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Missing values *Number (%)*	**5 (1)**	**7 (2)**	**11 (3)**	**5 (1)**	**2 (1)**	**4 (1)**	**5 (1)**	**3 (1)**	**4 (1)**	**13 (3)**
Cronbach's alpha if item deleted	.74	.72	.72	.72	.72	.71	.76	.71	.74	.72
Corrected item-total correlation	.35	.43	.42	.44	.46	.56	.24	.54	.33	.47

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the lowest item-total, as well as inter-item correlations. This indicates that item 7 might measure a different construct than the other items. While all items of the MISAP Scale subject participants to circumstances that appear to justify mistreatment, item 7 might have been more readily appraised positively due to the hygiene rationale, which is frequently emphasized in the Ethiopian midwifery curriculum [40]. We did not remove item 7 from the analysis, as this

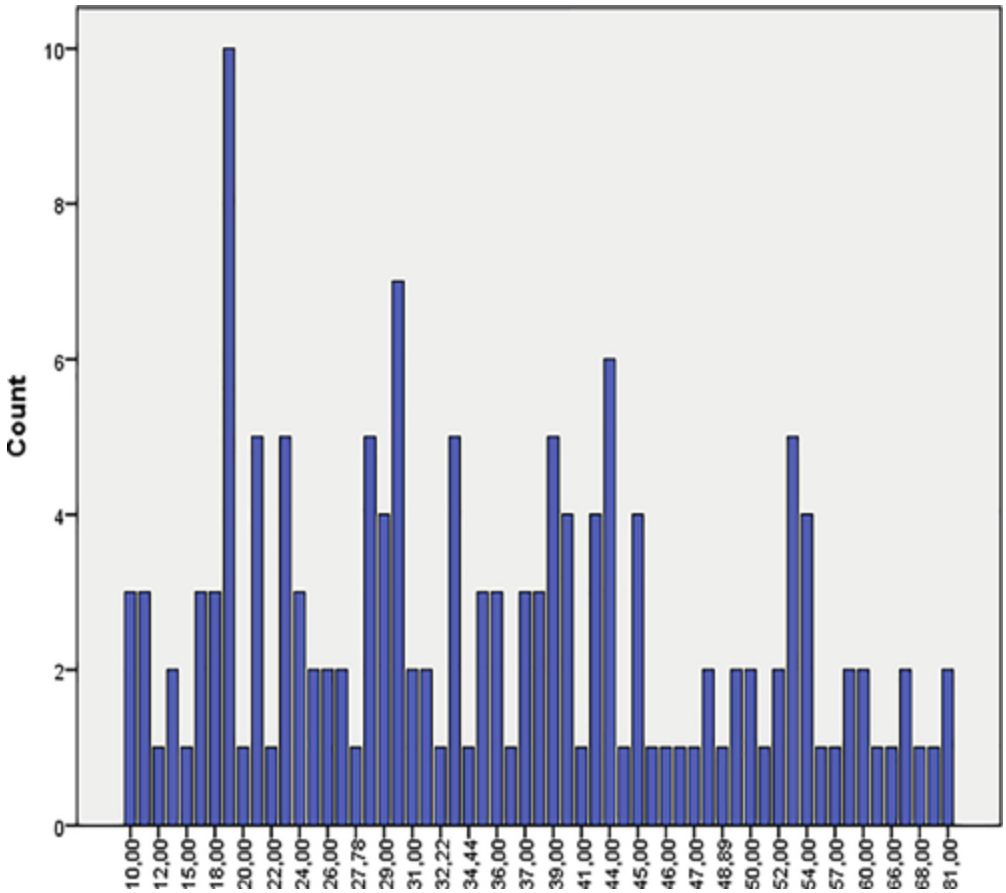

Fig 1. Outcome distribution of mistreatment appraisal for males.

https://doi.org/10.1371/journal.pone.0227958.g001

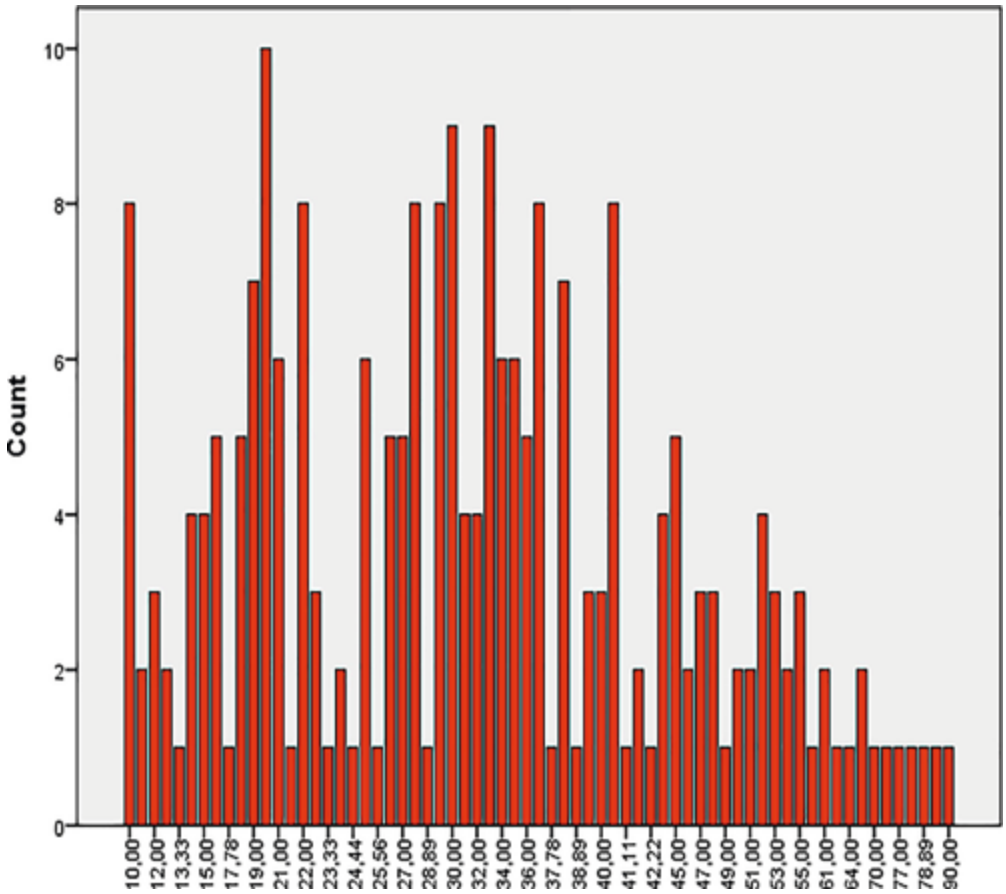

Fig 2. Outcome distribution of mistreatment appraisal for females.

https://doi.org/10.1371/journal.pone.0227958.g002

would not have improved the internal consistency measure remarkably (.75≈.76). In fact, removing item 7 would have limited the scale's scope, as all items of the MISAP Scale measure different forms of mistreatment.

The relationship between gender and positive mistreatment appraisal

Students generally opposed mistreatment behavior (*mean* 33.93; *SD* 15.08). Male students appraised mistreatment more positively (*mean* 35.78; *SD* 15.24) than their female counterparts (*mean* 32.74; *SD* 14.88; Figs 1 and 2). There was some variability among male and female students with regard to the different items of MISAP Scale (Fig 3). Item 7 was favored most frequently.

When applying univariable linear regression analysis, no significant difference between male and female midwifery students regarding mistreatment appraisal was observed ($B = 3.084$, 95% CI [-.005, 6.173]). Seven confounders (institution, ethnicity, place of origin,

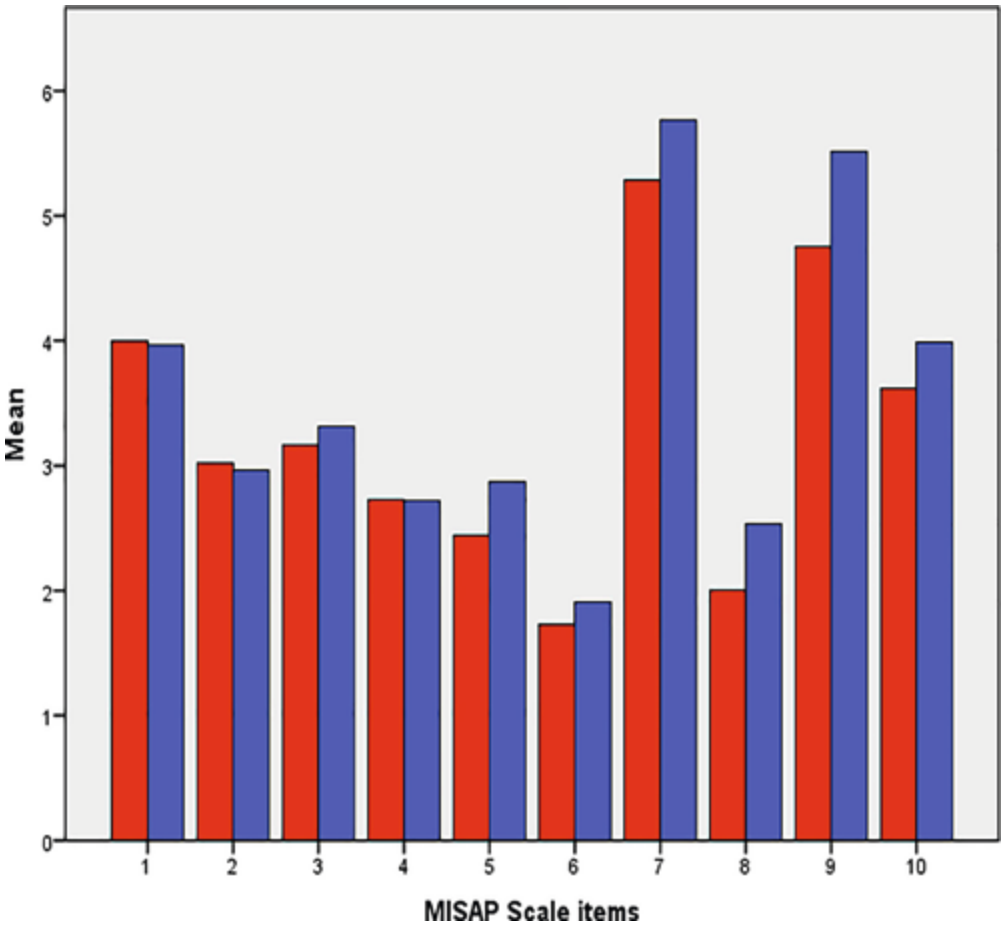

Fig 3. Mean scores for the different items of the MISAP Scale among males (blue) and females (red). Higher scores indicate more positive mistreatment appraisal, while lower scores indicate the opposite.

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type of program, age, self-esteem, stress) were identified and adjusted for in a multivariable linear regression analysis. The association between gender mistreatment appraisal remained insignificant in this model (B = 1.867, 95% CI [-1.472, 5.205]).

The indirect effect of gender on mistreatment appraisal via self-esteem and stress was insignificant, a_1b_1 = -.030, p = .677 and a_2b_2 = -.443, p = .186, respectively (Fig 4).

Discussion

Our study showed that we succeeded in developing a quantitative research scale, the MISAP Scale, that measures mistreatment appraisal from a provider perspective with acceptable psychometric properties, and that female Ethiopian midwifery students did not have more positive mistreatment appraisal scores than their male counterparts. Self-esteem and stress did not mediate the effect of gender on mistreatment appraisal.

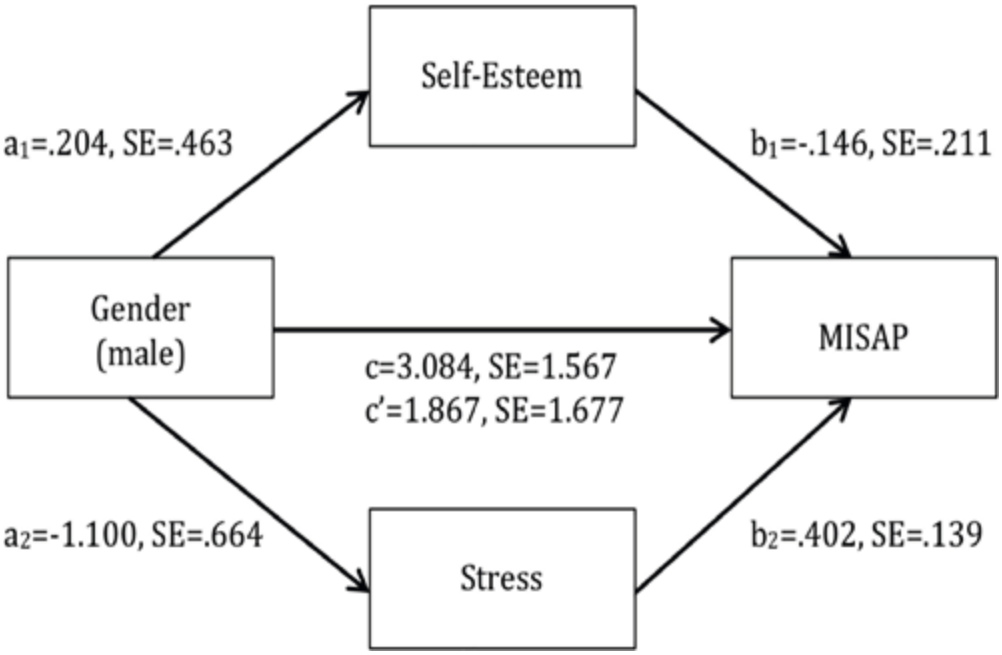

Fig 4. Unstandardized regression coefficients and standard errors for the relationship between gender and mistreatment appraisal as mediated by self-esteem and stress and adjusted for confounding of institution, ethnicity, place of origin, type of program and age. $^{*}p < .05$.

https://doi.org/10.1371/journal.pone.0227958.g004

The MISAP Scale showed acceptable psychometric properties: good feasibility characteristics, an acceptable internal consistency reliability, acceptable corrected item-total correlations and mostly acceptable inter-item correlations [38,39]. Content validity was ensured through employing relevant literature and conducting an expert review.

We did not observe a significant association between gender and mistreatment appraisal. This is not in line with previous research findings in the Ethiopian context that have linked male gender to more RMC provision, as well as competence and professionalism in the field of midwifery [17,21,41]. A factor that may account for this unexpected finding is that we may have assessed and operationalized mistreatment during childbirth in a way that is not consistent with previous studies: We utilized a quantitative research scale to assess individuals' mistreatment appraisal in circumstances that appear to justify mistreatment, while previous research observed maternity care provision in health facilities and used in-depth interview techniques [16,17]. In line with the notion that attitudes not necessarily equate to behavior, low mistreatment appraisal scores might not necessarily equate to RMC provision [42]. In this study both males and females opposed mistreatment, yet in reality females might follow this maxim less frequently [43]. Validation studies are needed to assess if the MISAP Scale measures the inclination of health providers to mistreat women during childbirth. A distinct feature of this study is that we captured the perspective of midwifery students, while previous research on gender differences in maternity care provision captured the perspective of healthcare professionals and patients. Accordingly, some patients in an Ethiopian sample indicated a preference for treatment by male midwives [17]. However, this does not necessarily have to

stem from an actual performance difference between male and female healthcare personnel. Patients might hold different expectations for male and female health professionals, which may bias their evaluations despite equal provider performance [44].

Self-esteem and stress were not found to mediate the effect of gender on mistreatment appraisal. This also does not conform to previous research that has pointed towards lower self-esteem and more stress among females, which in turn has been linked to unprofessionalism and aggression among healthcare staff [24–26]. There are various explanations that may account for this finding. First, gender initiatives in Ethiopia have received more and more support throughout the last years [45]. Gender initiatives often target students in particular, for example via girls' clubs and university associations. This might have led to a reduction of gender-bound stressors and an increase of self-esteem for young female individuals, which can account for similar mistreatment appraisal ratings among male and female study participants. Second, most midwifery students did not have children, while this will most likely change throughout early and middle adulthood. Women in developing countries often need to fulfill not only economic roles but also reproductive and community management tasks, without monetary compensation or social benefits [46]. While most female midwives are exposed to both demanding jobs and gender-bound social demands (e.g. being a good mother and wife, managing the household), this might not yet hold for most female midwifery students. Thus, fewer responsibilities and adequate fulfillment of social obligations among female midwifery students, as compared to female midwives, may imply higher self-esteem and reduced stress levels [47,48]. In turn, this offers an explanation for the finding that associations between gender and self-esteem, gender and stress, as well as gender and mistreatment appraisal were insignificant. Third, research that compared the concept of self-esteem in 53 nations indicated low internal consistency for the Rosenberg Self-Esteem Scale in Ethiopia ($\alpha = .64$), especially for one question (*I wish I could have more respect for myself*; $\alpha = .33$), which was also removed in our analysis [49]. As Ethiopians did not answer comparable to different questions, self-esteem in its global form might be a less tangible concept in the Ethiopian setting [50,51].

An important strength of this study is the data quality and its quantitative design, which allowed us to use standardized questionnaires to get an objective understanding of the issue at hand. According to first psychometric assessments, the MISAP Scale appears to be a feasible and reliable instrument, and its content validity was ensured through employing relevant literature and conducting an expert review. The study also has a number of limitations. The most important limitation is that even though first psychometric assessments of the MISAP Scale were positive, it possibly did not successfully differentiate between those who appraise mistreatment positively versus those who appraise mistreatment negatively. Moreover, it should be noted that the MISAP Scale was primarily developed using literature. In line with previous research, we decided to develop items by first conducting a literature review and then assessing the scale's content validity with the help of an expert panel [52]. Care should be applied when generalizing findings, as we sampled students from four of Ethiopia's 11 regions (Addis Ababa, Amhara Region, Oromia Region and Southern Nations, Nationalities, and Peoples' Region), which are very diverse in terms of ethnicity [53]. Thus, our sample might not be fully representative of the entire Ethiopian population. Moreover, due to the cross-sectional set-up of this study, no causal inferences can be drawn. Despite not revealing the exact purpose of this study and emphasizing anonymity, social desirability bias is likely to affect the assessment of mistreatment appraisal. We assume that sampling final-year midwifery students, as opposed to working midwives, allowed us to minimize social desirability bias due to limited accountability in this population.

There is no doubt that quality care provision, which encompasses RMC, is needed in order to improve maternal and neonatal health outcomes in Ethiopia and beyond [54]. Utilizing the

quantitative MISAP Scale can contribute towards the development of more effective RMC interventions in the future, as it offers more generalizable insights than previous qualitative studies [14]. The present study showed that 1) we were able to develop a feasible and reliable instrument, the MISAP Scale, measuring mistreatment appraisal during childbirth and 2) that positive mistreatment appraisal, measured with this quantitative scale, is opposed by most Ethiopian midwifery students, both males and females. Yet, there were still few students that frequently appraised mistreatment positively. As any form of mistreatment behavior can yield adverse health effects among mothers and their newborns, results of this study still underline the need of promoting RMC among Ethiopian midwifery students. Our findings do not offer support for the implementation of gender-specific RMC interventions in Ethiopia, they might however point towards the success of previous gender initiatives.

Supporting information

S1 Appendix. MISAP Scale.
(DOCX)

S2 Appendix. English questionnaire.
(DOCX)

S3 Appendix. Amharic questionnaire.
(PDF)

S4 Appendix. Original data.
(SAV)

S1 Table. Inter-item correlations of the MISAP Scale in a cohort of Ethiopian midwifery students.
(DOCX)

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Author Contributions

Conceptualization: Rena Bakker, Ephrem D. Sheferaw, Jelle Stekelenburg, Tegbar Yigzaw, Marlou L. A. de Kroon.

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Writing – original draft: Rena Bakker.

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5

CHAPTER 6

Risk Factors for Positive Appraisal of Mistreatment of Women

Risk Factors for Positive Appraisal of Mistreatment during Childbirth among Ethiopian Midwifery Students
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Article

Risk Factors for Positive Appraisal of Mistreatment during Childbirth among Ethiopian Midwifery Students

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Abstract: The maternal mortality ratio and neonatal mortality rate remain high in Ethiopia, where few births are attended by qualified healthcare staff. This is partly due to care providers' mistreatment of women during childbirth, which creates a culture of anxiety that decreases the use of healthcare services. This study employed a cross-sectional design to identify risk factors for positive appraisal of mistreatment during childbirth. We asked 391 Ethiopian final year midwifery students to complete a paper-and-pen questionnaire assessing background characteristics, prior observation of mistreatment during education, self-esteem, stress, and mistreatment appraisal. A multivariable linear regression analysis indicated age ($p = 0.005$), stress ($p = 0.019$), and previous observation of mistreatment during education ($p < 0.001$) to be significantly associated with mistreatment appraisal. Younger students, stressed students, and students that had observed more mistreatment during their education reported more positive mistreatment appraisal. No significant association was observed for origin ($p = 0.373$) and self-esteem ($p = 0.445$). Findings can be utilized to develop educational interventions that counteract mistreatment during childbirth in the Ethiopian context.

Keywords: disrespect and abuse; respectful maternity care; midwifery students; Ethiopia

1. Introduction

Mistreatment during childbirth is a human rights violation in which disrespectful care provision is inflicted upon childbearing women, while their wishes and needs are neglected [1,2]. It may encompass malpractices such as physical abuse, verbal abuse, non-consented care, non-confidential care, discrimination based on patient attributes, abandonment of care, and detention in facilities [3]. Mistreatment during childbirth is an issue across the globe, yet its occurrence is particularly prevalent in low-income settings [4]. Factors such as frustration among healthcare personnel and unequal patient–provider relations can help to explain why women are being mistreated during childbirth; however, intrinsically good motives among healthcare staff might play a role as well [5]. This can be well understood through the words of an Ethiopian midwife.

> They do that [abuse] for the sake of the mothers. When the labor is in the second stage, and the mother doesn't care for the baby, the midwives may slap the thigh of the mother only with the aim to save the baby [6] (p. 9).

Irrespective of possibly well-meant intentions, mistreatment during childbirth ultimately creates a culture of fear that reduces pregnant women's healthcare utilization [7]. As maternal healthcare utilization is a major predictor of mother and child well-being, mistreatment during childbirth eventually contributes toward maternal and neonatal morbidity and mortality [8]. It hence endangers patient safety, while increasing the risk of preventable adverse events [9].

In order to improve maternal and child well-being and reach the United Nations Sustainable Development Goal 3, which aims to reduce the global maternal mortality ratio to 70 per 100,000 live births and the neonatal mortality rate to 12 deaths per 1000 live births, a more patient-centered care approach is needed [2,10–12]. This is also emphasized by the Respectful Maternity Care (RMC) framework, which promotes women's autonomy and dignity in childbirth [13]. Next to mobilizing communities to demand RMC, along with integrating RMC into the curriculum for maternity healthcare providers and supporting these healthcare providers to act accordingly, RMC should ultimately be integrated into national legislation and healthcare policies [14].

For the development and implementation of effective RMC interventions, it is essential to gain a better understanding of the etiology of mistreatment during childbirth. Research has indicated mistreatment during childbirth to stem from societal level risk factors (e.g., cultural beliefs), organizational level risk factors (e.g., conditions at work), and individual level risk factors among healthcare staff (e.g., beliefs and personal attributes), which may then give rise to poor health service characteristics and inadequate interpersonal interactions between healthcare staff and patients [15]. While factual knowledge is an important pillar of good communication in the healthcare branch, proper acknowledgment of interpersonal and relational information is a critical skill among midwives and obstetricians, as childbirth is often associated with feelings of anxiety and uncertainty [9].

Previous literature on mistreatment during childbirth and individual level risk factors among care providers is limited, yet some characteristics have been outlined, such as young age, observation of mistreatment during education, low self-esteem, and high stress levels [6,15–18]. It is important to acknowledge that these findings stem from different countries and sample populations, where not all factors might play a role in each setting. Different norms and traditions in diverse settings, variations regarding education and midwifery training, as well as dissimilarities related to health facilities' condition and equipment are likely to affect care providers' competencies, attitudes, and interactions with patients [19–21]. In order to develop and promote effective RMC interventions in a particular setting, these factors underline the value of context-specific research on risk factors for mistreatment during childbirth.

Ethiopia constitutes the basis for our investigations, as mistreatment during childbirth is a frequently encountered problem in this country, where the maternal mortality ratio and the neonatal mortality rates are high [21]. An important step in advocating RMC in Ethiopia encompasses adjusting the curriculum of health science programs and promoting RMC among midwifery students [6,21,22]. Therefore, it is essential to understand which students are at risk for mistreating women during childbirth.

Previous research on individual level risk factors for mistreatment during childbirth in Ethiopia is scarce; research has been mostly conducted among care providers, while studies among midwifery students are extremely scarce, and findings have been inconsistent [6,23]. One study has for example pointed toward more RMC among male Ethiopian healthcare providers. However, in our earlier published study, gender did not predict positive appraisal of mistreatment during childbirth among Ethiopian midwifery students [24]. The lack and inconclusiveness of previous research led to the aim of the current study, which was to analyze and identify risk factors for mistreatment during childbirth among Ethiopian midwifery students.

2. Materials and Methods

This study employed a cross-sectional design. Local data collectors asked Ethiopian final-year midwifery students from six educational institutions (i.e., Gondar University, Bahir Dar University, Bahir Dar Health Science College (HSC), Hawassa HSC, Arsi University, and Menelik HSC) to participate in this study during class. Data were collected from November to December 2017 and the response rate was 100%. We excluded one student from the analysis due to their completing an English version and thus not an Ethiopian version of the questionnaire. The final study sample included 391 students. The study protocol was reviewed and approved by the Johns Hopkins Bloomberg School of Public Health Institutional Review Board (IRB00008218). All students gave informed consent before participating.

Students were asked to complete a paper-and-pen questionnaire that captured various background characteristics, observation of mistreatment during education, self-esteem, stress, and appraisal of mistreatment. Self-esteem and stress were assessed using previously translated Amharic versions of the Rosenberg Self-Esteem Scale and Perceived Stress Scale that showed acceptable degrees of internal consistency ($\alpha = 0.73$ and $\alpha = 0.76$, respectively) [25,26]. All other questions underwent a forward and backward translation process, carried out by Ethiopian epidemiology master students from the University of Groningen, the Netherlands.

The *outcome variable* was appraisal of mistreatment during childbirth ($\alpha = 0.75$), and it was assessed with the 10-item Mistreatment Appraisal (MISAP) Scale [24]. The items of the MISAP scale are based on the typology of mistreatment by Bohren et al. [4] and encompass the following mistreatment themes: physical abuse, verbal abuse, stigma and discrimination, failure to meet professional standards of care, poor rapport between women and providers, and health system conditions and constraints. Individuals were asked to rate actions that depict mistreatment during childbirth on a scale ranging from 1 (*oppose strongly*) to 10 (*support strongly*). Solely endpoints, and hence no in-between numbers of the scale, received a label. This gave rise to theoretical outcome scores of 10 to 100, with higher scores depicting more positive appraisal of mistreatment during childbirth. We allowed 20% of items to be missing, which was the case in 6% (N = 25). When data were missing, the weighted mean sum scores were calculated.

The *independent variables* were place of origin (urban, rural), age, observation of mistreatment during education, self-esteem, and stress. To assess observation of mistreatment during education ($\alpha = 0.70$), we used ten items of a questionnaire by Moyer et al. [17]. Students had to indicate on a scale, including: 1 (*never*), 2 (*rarely*), 3 (*sometimes*), and 4 (*most of the time*), whether they had observed disrespectful maternity care during their education thus far. Theoretical outcome scores ranged from 10 to 40. Higher scores depicted more observation of mistreatment during education. Self-esteem ($\alpha = 0.61$) was assessed with the 10-item Rosenberg Self-Esteem Scale [27]. This scale included the labels: 1 (*strongly agree*), 2 (*agree*), 3 (*disagree*), and 4 (*strongly disagree*), and gave rise to theoretical outcome scores of 10 to 40. Higher scores indicated more self-esteem. One item *(I wish I could have more respect for myself)* was removed due to its ambiguous wording, which improved the scale's internal consistency ($\alpha = 0.72$), yielding theoretical outcome scores of 9 to 36. Stress ($\alpha = 0.71$) was measured with the 10-item Perceived Stress Scale [28]. This scale included the labels: 0 *(never)*, 1 *(almost never)*, 2 *(sometimes)*, 3 *(fairly often)*, and 4 *(very often)* and yielded theoretical outcome scores of 0 to 40, with higher scores depicting more stress. We allowed 20% of observation of mistreatment, self-esteem, and stress items to be missing, which was the case in 19% (N = 74), 7% (N = 27), and 6% (N = 25), of the items respectively. When data were missing, the weighted mean sum scores were calculated.

Covariates were gender (male, female), institution (Gondar University, Bahir Dar University, Bahir Dar HSC, Hawassa HSC, Arsi University, or Menelik HSC), religion (Orthodox, Protestant, Islam, or other), and ethnicity (Amhara, Oromo, or other).

In total, 1% of all values were missing (i.e., 44 values). To reduce the impact of missing data, we used multiple imputation to generate five datasets for our main analyses. Data imputation was conducted for gender (1 value), place of origin (1 value), age (21 values), observation of mistreatment

during education sum scores (8 values), stress sum scores (7 values), and appraisal of mistreatment sum scores (6 values). Imputed values were sampled from a predictive distribution based on the associations between all covariates, independent, and outcome variables [29].

Background characteristics, independent variables, and the outcome variable were described by means, standard deviations (SD), ranges and/or counts, and percentages. After examining the assumptions of linearity, we conducted a correlational analysis of our cross-sectional data set using multiple linear regression analyses to assess the association between appraisal of mistreatment and place of origin, age, observation of mistreatment during education, self-esteem, and stress, while controlling for gender, institution, religion, and ethnicity [30]. Variables that yielded $p < 0.25$ when applying bivariable linear regression analysis were added to the multivariable regression analysis simultaneously [31]. Analyses were conducted with SPSS statistical software version 25 for Windows (SPSS Inc. Chicago, IL, USA). p-values < 0.05 were considered significant.

3. Results

Table 1 shows the background characteristics of the population. Most individuals were female students from Gondar University, with an orthodox, urban background from the Amhara region. The mean age was 23.58 years (SD 2.56, range 20.00–40.00). Observation of mistreatment scores were moderate (mean 19.71, SD 5.14, range 11.00–37.00). Students had a rather high self-esteem (mean 29.40, SD 4.27, range 13.00–36.00) and moderate stress levels (mean 15.24, SD 5.71, range 1.00–34.00), while appraisal of mistreatment scores were rather low (mean 33.92, SD 15.06, range 10.00–90.00).

Table 1. Background characteristics of the study population (N = 391).

Variable	N (%)
Gender	
Male	151 (39)
Female	239 (61)
Institution	
Gondar University	130 (33)
Bahir Dar University	38 (10)
Bahir Dar HSC	42 (11)
Hawassa HSC	59 (15)
Arsi University	40 (10)
Menelik HSC	82 (21)
Religion	
Orthodox	304 (78)
Protestant	39 (10)
Islam	42 (11)
Other	6 (1)
Place of origin	
Urban	209 (54)
Rural	181 (46)
Ethnicity	
Amhara	255 (65)
Oromo	66 (17)
Other	70 (18)

Table 2 shows that place of origin, age, observation of mistreatment during education, self-esteem, and stress were all significantly related to appraisal of mistreatment in a bivariable regression analysis. Table 2 also shows that age, observation of mistreatment during education and stress remain significantly related to appraisal of mistreatment in a multivariable regression analysis; while adjusting for gender, institution, religion and ethnicity, with more positive appraisal of mistreatment during childbirth among younger students, students that observed more mistreatment during education and stressed students.

Table 2. The relationships of possible risk factors and appraisal of mistreatment in bivariable regression and multivariable regression analyses.

Variable	Bivariable Linear Regression			Multivariable Linear Regression [1]		
	B	95% CI	*p*	*B*	95% CI	*p*
Place of origin (urban is reference category)	−4.202	[−7.246, −1.159]	0.007	−1.488	[−4.766, 1.790]	0.373
Age	−1.078	[−1.675, −0.481]	<0.001	−0.851	[−1.445, −0.256]	0.005
Observation of mistreatment	0.775	[0.492, 1.058]	<0.001	0.549	[0.264, 0.833]	<0.001
Self-esteem	−0.731	[−1.082, −0.380]	<0.001	−0.155	[−0.554, 0.244]	0.445
Stress	0.584	[0.320, 0.848]	<0.001	0.356	[0.060, 0.652]	0.019

[1] Adjusted for gender, institution, religion, and ethnicity.

4. Discussion

Our study examined individual level risk factors for mistreatment during childbirth among Ethiopian midwifery students, and it showed that there was a significant association between positive appraisal of mistreatment and younger age, observation of mistreatment during education, and stress. However, our study did not confirm that place of origin and self-esteem were associated with appraisal of mistreatment. These results are partly in line with previous research that has highlighted the importance of interpersonal interactions among healthcare staff and patients herein, and various individual level risk factors among care providers, such as young age, observation of mistreatment during education, low self-esteem, and high stress levels [6,9,15–18]. The significant inverse relationship between positive appraisal of mistreatment and age, is in line with previous studies that have pointed toward more patient-centeredness and better communication skills among older students [32–34]. Possibly, the less positive appraisal of mistreatment among older midwifery students can be attributed to factors such as life experience (e.g., having delivered themselves or witnessed their wives give birth), which may encompass giving older students a more critical attitude and assertive manner that might make them less prone to copy negative behavior from their instructors [32,33,35].

Our finding that observation of mistreatment during education was significantly related to positive appraisal of mistreatment, confirms findings of Rominski et al. [5], who proposed that observation of mistreatment during education might cause midwifery students to rationalize disciplinary measures against patients through victim-blaming. While students might understand the importance of respectful and patient-centered care, observation of mistreatment during education appears to put them at risk of internalizing such behaviors. In turn, the normalization of mistreatment during childbirth and the structural embeddedness of violence in the healthcare setting underlines the complexity of promoting behavioral change, as it requires fundamental individual level, organizational level, and societal level transformations [15,36,37].

The statistically significant relationship between stress and positive appraisal of mistreatment, confirms previous research findings that have identified stress as a root cause of aggression due to diminished cognitive processing and self-regulation [18,38]. Healthcare personnel across the globe are exposed to high job demands; however, poor regulatory frameworks, as well as unsafe and inadequate working conditions, are particularly prevalent in low-income settings, which are likely to induce more stress and disrespectful patient–provider interactions [39].

Despite more conservative norms and more appraisal of gender violence in rural Ethiopian areas, we did not observe an independent relationship between rural origin and a more positive appraisal of mistreatment among midwifery students [19,40]. The fact that midwifery students commonly no longer live in rural communities while undergoing professional training, might account for this insignificant finding. This result is also in line with earlier findings showing that patients' origin, rather than care providers' origin, affects their respective risk of being mistreated during childbirth [4]. That is, women from rural areas with a lower socioeconomic status have been reported to receive

worse treatment. Finally, rural origin might be highly associated with observation of mistreatment, which was a significant predictor in the multivariable analysis.

An explanation for the finding that self-esteem was not related to appraisal of mistreatment can be derived from the notion that self-esteem is a highly situation-dependent state, rather than a stable trait that persists across different situations [41]. A real-life setting might frequently induce low self-esteem upon students due to complex power dynamics (e.g., a physician and a midwifery student working together). However, as participation in this study cannot capture real-life power dynamics, it is likely that students' self-esteem was unaffected by such mechanisms. Another explanation for the insignificant association between self-esteem and appraisal of mistreatment, stems from the view that self-esteem is a highly individualistic concept that might be less applicable in the collectivistic Ethiopian setting [42,43]. Moreover, the variables, stress and self-esteem, may be highly correlated, which may account for the finding that self-esteem was not independently associated with the outcome variable.

Our study had a number of strengths and limitations. An important strength of this study was its design. While previous research mostly used qualitative methods, we utilized quantitative measures and sampled data from different locations, which increases the study's generalizability. Another strength was the data quality, which was ensured by employing local processional data collectors, who approached students during class. Limitations of this study encompass: sampling students from merely four regions, limiting the study's generalizability; the possibility that social desirability bias may have affected study outcomes, despite guaranteeing anonymity; and its cross-sectional set-up, which implies that no conclusions on causality can be drawn. We recommend that controlled trials or longitudinal studies be performed in the future to gain more insight into causal pathways.

Mistreatment during childbirth is a complex, multi-component problem that requires a thorough understanding of the reasons for its emergence and its perception by different stakeholders. Accordingly, interventions need to focus on various aspects, such as improving the quality of patient–provider interactions and creating accountability for mistreatment during childbirth at an organizational and national level, which implies that there is no "one fits all" solution [44]. Ultimately, mistreatment during childbirth is often linked to limited financial resources, yet associated structural shortcomings are difficult to overcome [3,39]. The present study can contribute toward this issue by providing insights into interventions that particularly affect midwifery education.

With regard to the finding that younger midwifery students were more likely to appraise mistreatment during childbirth positively, it might be beneficial to reconsider admission procedures for health-related studies in Ethiopia. The implementation of a minimum age, and the promotion of secondary entry degrees for studies such as nursing, midwifery, and medicine may contribute toward better patient–provider interactions. In fact, Ethiopia launched its New Medical Education Initiative (NMEI) in 2012, which is a secondary degree medical training program that seeks to diminish the shortage of medical doctors [45]. As NMEI students are typically older than regular students, it would be interesting for future research to assess whether these students are more prone to provide RMC.

The association between negative role modeling behavior of instructors and positive appraisal of mistreatment among students, underlines the importance of raising awareness about disrespectful care provision at higher education institutions. The current Ethiopian technical and vocational education and training model curriculum for midwifery students encompasses a 75 h module (i.e., 2% of the total degree program duration) that promotes RMC provisions [46]. However, once midwifery students do their clinical internships, they will most likely experience a mismatch between the behavior of their instructors and the principles of RMC that they had previously been taught. Negative consequences of this discrepancy could be leveraged by making students aware of the fact that the ideals of RMC are often not attained in practice, but that mistreatment during childbirth is nonetheless unacceptable under any circumstances, next to ensuring good supervision. One practical approach to achieve this goal could encompass the establishment of supervised feedback days, during which students can present and discuss real life situations of mistreatment during childbirth. Additionally, it appears crucial that the RMC framework is integrated more substantially into the Ethiopian midwifery education curriculum.

The observed association between stress and positive appraisal of mistreatment, highlights the importance of strengthening student support facilities, such as counseling services that facilitate effective stress management and coping strategies. As stress exposure is an ongoing issue in the healthcare branch, facilitating counseling for both midwifery students and working midwives is likely to be useful [18,39].

5. Conclusions

Promoting RMC among midwifery students comprises an important step in overcoming mistreatment during childbirth [22]. This study points toward a significant association between positive appraisal of mistreatment and younger age, observation of mistreatment during education, and stress among Ethiopian midwifery students. Findings of this study can contribute toward enhancing educational interventions that target these risk factors, and ultimately increase professionalism among Ethiopian midwifery students, who constitute an important proportion of Ethiopia's future healthcare workforce.

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6

CHAPTER 7

Institutional-Level Respectful Maternity Care

Status of institutional-level respectful maternity care: Results from the national Ethiopia EmONC assessment

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CLINICAL ARTICLE

Obstetrics

Status of institutional-level respectful maternity care: Results from the national Ethiopia EmONC assessment

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Abstract

Objective: To assess the availability of an institutional-level respectful maternity care (RMC) index, its components, and associated factors.

Methods: A cross-sectional study design was applied to a 2016 census of 3804 health facilities in Ethiopia. The availability of an institutional-level RMC index was computed as the availability of all nine items identified as important aspects of institutional-level RMC during childbirth. Logistic regression analysis was used to identify factors associated with availability of the index.

Results: Three components of the institutional-level RMC index were identified: "RMC policy," "RMC experience," and "facility for provision of RMC." Overall, 28% of facilities (hospitals, 29.9%; health centers, 27.8%) reported availability of the institutional-level RMC index. Facility location urbanization (urban region), percentage of maternal and newborn health workers trained in basic emergency obstetric and newborn care, and availability of maternity waiting homes in health facilities were positively associated with availability of the institutional-level RMC index.

Conclusion: Only one in three facilities reported availability of the institutional-level RMC index. The Ethiopian government should consider strengthening support mechanisms in different administrative regions (urban, pastoralist, and agrarian), implementing the provision training for health workers that incorporates RMC components, and increasing the availability of maternity waiting homes.

KEYWORDS
Ethiopia, Mistreatment, Respectful maternity care

1 | INTRODUCTION

Mistreatment of women in health facilities during labor and childbirth has been recognized as a global problem.[1,2] The causes of mistreatment during childbirth are complex, embedded within a sociocultural context and shaped by characteristics of health facilities and care providers.[3,4] The WHO categorizes mistreatment of women into seven domains: (a) physical abuse, (b) sexual abuse, (c) verbal abuse, (d) stigma and discrimination, (e) failure to meet professional standards of care, (f) poor rapport between women and providers, and (g) health system conditions and constraints.[1]

Several research groups, using various measurement criteria, found that 21%–79% of women experience mistreatment during childbirth in Ethiopia.[5] None of the studies conducted in Ethiopia focused on health system conditions as a component of mistreatment; however, the role of institutional characteristics deserves special attention because it affects a healthcare provider's behavior and attitude to providing respectful care.[6] For example, an unfavorable health facility environment is likely to increase stress levels among healthcare providers, resulting in mistreatment of women during childbirth.[7]

In 2016, the Ethiopian government launched its Health Sector Transformation Plan, which aims to improve maternal and newborn health outcomes by promoting compassionate and respectful care.[8] A key strategy to achieve this goal comprises health resource facilitation, such as the rollout of maternity waiting homes (MWHs), which provide accommodation for pregnant women in close proximity to the health facility.[8-10] MWHs are usually constructed with community participation and managed by the health facility. Another important approach encompasses the provision of countrywide emergency obstetric and newborn care (EmONC), which includes life-saving interventions for the main causes of maternal and neonatal morbidity and mortality.[11]

Understanding contributors to institutional-level respectful maternity care (RMC) during childbirth will help to maximize the effectiveness of RMC interventions. It may also positively influence the utilization of maternity services. To our knowledge, potential components of institutional-level RMC have not been systematically assessed before. Therefore, the primary aim of the present study was to describe an institutional-level RMC index. Secondary aims were to (a) identify components of the institutional-level RMC index during childbirth, (b) assess levels of the institutional-level RMC index and components in hospitals and health centers in Ethiopia; and (c) determine institutional-level factors associated with the reported institutional-level RMC prerequisites.

2 | MATERIALS AND METHODS

2.1 | Study design

The present study used a subset of the 2016 EmONC assessment data that focus on health facility level policies, norms, and practices that affect provision of RMC. The EmONC assessment utilized a cross-sectional census of all health facilities in Ethiopia that provided childbirth services prior to the assessment.[12,13] The study protocol was reviewed and approved by the Scientific and Ethical Review board of the Ethiopian Public Health Institute. Each study participant gave informed oral consent prior to participation.

2.2 | Study setting

The study included all private and public health facilities (hospitals, health centers, maternal and child health [MCH] specialty centers, MCH specialty clinics, and higher clinics) across all nine regions and two city administrations in Ethiopia. All health facilities that had a mandate to provide childbirth services according to national accreditation agency criteria confirmed that births had taken place in the 12 months preceding the assessment and were functional during the data collection period.

2.3 | Data collection

The data collection tools were adapted to the Ethiopian context from the 2008 EmONC assessment tool and the 2014 Averting Maternal Death and Disability tools. The analyzed data were extracted from modules one and two ("facility identification" and "infrastructure and human resources").[14] Tool adaptation took place in a workshop attended by local experts who ensured that the Ethiopian context was considered in the questionnaire. Three rounds of pilot testing were conducted to ensure a proper flow of questions, estimate the length of time required for interviews, and identify issues related to the understanding of terms and concepts in the electronic data entry program. Identified inconsistencies were corrected.

The data collectors had at least a bachelor's degree in a health-related field. All data collectors attended 10 days of training and worked in teams of three, with one group member serving as team leader. Field level data collection was conducted from approximately May 15 to December 15, 2016. Data were collected by interviewing health facility and maternity unit heads in a private area at the facility. The data collectors also observed the availability of facilities necessary for provision of RMC, such as curtains, waiting areas, and bathrooms.

2.4 | Data quality

To ensure accurate data quality, pre- and post-tests were administered to data collectors to assess their learning and understanding of assessment guidelines and standards for data collection. Team leaders reviewed all completed questionnaires to ensure completeness. Regional and national coordinators visited and communicated with data collection teams to provide support and help when difficulties arose at individual facilities. Data were analyzed using Stata version 14 (Stata Corp., College Station, TX, USA).

2.5 | Variables and data analysis

The "institutional-level RMC index" was defined as the health facility's availability of physical infrastructure, equipment, policies, and norms that together enable women to experience RMC during childbirth services. It includes a physical infrastructure that encourages privacy and confidentiality, availability of waiting area for companions, availability of bathrooms, and facility-related policies and norms to ensure a positive experience during labor and childbirth.

TABLE 1 Component matrix for the principal component analysis[a]

	Component		
RMC item	**1**	**2**	**3**
Allow companion during childbirth	0.794		
Allow women to have a female companion during labor	0.729		
Allow women to choose their preferred position during labor/childbirth	0.595		
Women have never slept on the floor		0.784	
Women have never given birth on the floor		0.7	
Women have never shared beds before or after childbirth		0.625	
Waiting area for companion's use			0.733
Functioning toilet for companion's use			0.715
Curtains/means of providing privacy			0.335

Abbreviation: RMC, respectful maternity care.

[a] Three components extracted.

In the first step, 11 items (questions) measured in a binary (yes/no) format were identified that highlight important aspects of institutional-level RMC during childbirth: "women can choose a companion of their choice," "women can choose birthing position," "women can walk around during labor," "availability of curtains for privacy," "availability of waiting areas for women and companions," "availability of functioning toilets for companions," "availability of food for women," "women have never shared beds before or after birth," "women have never slept on the floor," and "women have never given birth on the floor."

Two items ("woman can walk around during labor" and "availability of food for women") were excluded from the principal component analysis due to low factor loadings (<0.35), although one item was retained owing to technical relevance even though it did not fulfill statistical criteria. The nine remaining items that measured specific aspects of institutional RMC during childbirth were grouped into components (Table 1). Three components were extracted by using scree plot criteria,[15] which are used to identify the number of factors to retain in a principal component analysis (see File S1 for communalities, total variance explained, and rotated component matrix). These components were labeled "policy," "facility," and "experience" (Figure 1).

The component "policy" was calculated from three items ("women can choose a companion of their choice," women can choose a birthing position," and "women can walk around during labor") and labeled as available when all three items were reported as yes. The component "facility" was calculated from three items ("availability of curtains for privacy," "availability of waiting areas for women and companions," and "availability of functioning toilets for visitors and family use") and considered as available when all three conditions were observed or reported as yes. The component "experience" was calculated from three items ("women have never shared beds before or after birth," "women have never slept on the floor," and "women have never given birth on the floor") and considered to be available when all three items were reported as yes by the maternity unit lead. The variable institutional-level RMC index was calculated as a composite score of all nine items. The institutional-level RMC index was considered to be available only if all nine items were available.

In the second step, multivariate logistic regression was used to identify factors associated with the availability of the institutional-level RMC index during childbirth, which was the outcome variable. Covariates identified from other studies included managing authority, administrative region type, ratio of births to maternity beds, ratio of childbirth to maternity healthcare workers, proportion of MCH providers trained in BEmONC, and availability of MWHs in health facilities.[3,7]

The variable "ratio of births per year to maternity beds" indicated the level of crowding at the facility, whereas"the ratio of childbirth to maternity healthcare workers" was applied as a measure of the workload of providers. Continuous explanatory variables (number of childbirths to maternity beds, number of childbirths to maternity unit assigned health workers and proportion of MCH providers trained in BEmONC) were categorized into

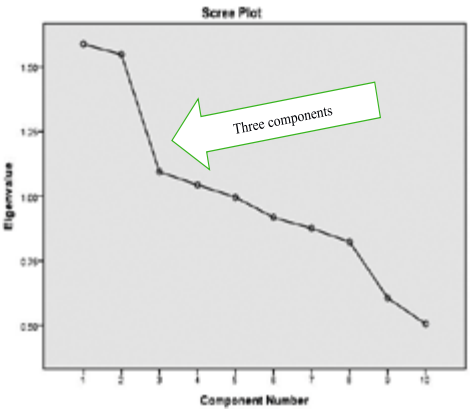

FIGURE 1 Scree plot used to determine number of items to retain in the principal component analysis

TABLE 2 Background characteristics of health facilities disaggregated by facility type[a]

Facility type	Hospitals (n = 316)	Health centers (n = 3488)	Total (n = 3804)
Managing authority			
Public	236 (74.7)	3426 (98.2)	3662 (96.3)
Private, for-profit	61 (19.3)	22 (0.6)	83 (2.2)
Private, not-for-profit	19 (6)	40 (1.1)	59 (1.6)
Region[b]			
Agrarian	235 (74.4)	3074 (88.1)	3309 (87)
Pastoralist	21 (6.6)	287 (8.2)	308 (8.1)
Urban	60 (19)	127 (3.6)	187 (4.9)
Facility location			
Urban	293 (92.7)	1204 (34.5	1497 (39.4
Rural	23 (7.3)	2284 (65.5	2307 (60.6
Annual births			
<52	47 (14.9)	244 (7.0)	291 (7.6)
52–182	38 (12.0)	557 (16.0)	595 (15.6)
183–365	22 (7.0)	899 (25.8)	921 (24.2)
366–499	22 (7.0)	536 (15.4)	558 (14.7)
500–999	63 (19.9)	1013 (29.0)	1076 (28.3)
≥1000	124 (39.2)	239 (6.9)	363 (9.5)
Births per maternity bed			
1st quartile (≤27)	136 (43.2)	810 (23.3)	946 (25.0)
2nd quartile (28–50)	85 (27.0)	863 (24.9)	948 (25.1)
3rd quartile (51–85)	74 (23.5)	871 (25.1)	945 (25.0)
4th quartile (≥86)	20 (6.3)	925 (26.7)	945 (25.0)
Births per MNH provider			
1st quartile (≤31)	124 (40.1)	811 (23.7)	935 (25.0)
2nd quartile (32–63)	80 (25.9)	852 (24.9)	932 (25.0)
3rd quartile (64–117)	72 (23.3)	861 (25.1)	933 (25.0)
4th quartile (≥118)	33 (10.7)	900 (26.3)	933 (25.0)
MNH providers trained in BEmONC			
1st quartile (≤14)	118 (38.2)	912 (26.6)	1030 (27.6)
2nd quartile (14–28)	51 (16.5)	864 (25.2)	915 (24.5)
3rd quartile (29–49)	57 (18.4)	931 (27.2)	988 (26.5)
4th quartile (≥50)	83 (26.9)	717 (20.9)	800 (21.4)
Maternity waiting home or room			
No	258 (81.6)	1545 (44.3)	1803 (47.4)
Yes, room in facility	39 (12.3)	1196 (34.3)	1235 (32.5)
Yes, freestanding	19 (6.0)	747 (21.4)	766 (20.1)

Abbreviations: BEmONC, basic emergency obstetric and newborn care; MNH, maternity and newborn health.

[a]Values are given as number (percentage).

[b]Agrarian regions: Tigray, Amhara, Oromia, and SNNP. Pastoralist regions: Afar, Somali, Benishangul-Gumuz, and Gambela. Urban regions: Addis Ababa, Harari, and Diredawa.

four quartiles to facilitate data interpretation. Frequencies were calculated for a range of facility factors. The data are presented as odds ratio (OR) or adjusted odds ratio (aOR), combined with 99% confidence intervals (CIs) and *P* values to compensate for multiple testing.

3 | RESULTS

Among 4385 private and public health facilities in Ethiopia, 11 were excluded from the assessment due to civil unrest in their catchment areas, 568 were excluded due to absence of service during the

TABLE 3 Prevalence of institutional-level RMC index components[a]

Component	Hospital/MCH specialty center (n = 316)	Health center/clinic (n = 3488)	Total (n = 3,804)	*P* value
RMC index				
No	220 (70.1)	2512 (72.2)	2732 (72.0)	0.428
Yes	94 (29.9)	969 (27.8)	1063 (28.0)	
Policy				
No	160 (50.6)	1592 (45.7)	1752 (46.1)	0.092
Yes	156 (49.4)	1892 (54.3)	2048 (53.9)	
Experience				
No	77 (24.4)	589 (16.9)	666 (17.5)	0.001
Yes	239 (75.6)	2897 (83.1)	3136 (82.5)	
Facility				
No	74 (23.5)	1397 (41.1)	1471 (39.6)	<0.001
Yes	241 (76.5)	1998 (58.9)	2239 (60.4)	

Abbreviation: RMC, respectful maternity care.

[a] Values are given as number (percentage).

12-month preceding the survey and 2 refused to participate in the assessment. Overall, 3804 facilities (336 health centers and 3488 hospitals) were included in the analysis.

The background characteristics of the health facilities are summarized in Table 2. Most hospitals (n = 236, 74.7%) were public institutions, some (n = 61, 19.3%) were private for-profit institutions, and a few (n = 19, 6.0%) were private not-for-profit institutions. Nearly all health centers (n = 3426, n = 98.2%) were public institutions. Most hospitals (n = 235, 74.4%) and health centers (*n* = 3074, 88.1%) were found in agrarian regions. Most hospitals (n = 293, 92.7%) were in urban areas, whereas most health centers (n = 2284, 65.5%) were in rural areas. The majority of hospitals had the lowest delivery volume (≤27 births per maternity bed annually) and were the least crowded (≤31 births per MNH provider).

Table 3 summarizes the institutional-level RMC index of the health facilities. Overall, 29.9% (n = 94) of hospitals and 27.8% (*n* = 969) of health centers fulfilled the institutional-level RMC index. As compared with hospitals, health centers reported higher rates of RMC-related policies (54.3% [*n* =1892] vs 49.4% [n = 156], *P* = 0.092) and facility-level RMC experience (83.1% [n =2897] vs 75.6% [n =239]; *P* = 0.001). In terms of availability of the facility component necessary for the provision of RMC, hospitals reported better performance than health centers (76.5% [n =241] vs 58.9% [n =1998]; *P* < 0.001).

After adjusting for the effects of managing authority, urban rural status, proportion of MCH providers trained in BEmONC, the ratios of number of childbirth per available beds and providers, and availability of MWHs in health facilities, the likelihood of health facilities fulfilling the institutional-level RMC index was higher for those located in urban regions than for those located in agrarian regions (aOR, 1.46; 99% CI, 0.91–2.34; *P* = 0.037), although the difference was not statistically significant (Table 4) .

Facilities in the higher (second, third, and fourth) quartiles of providers trained in BEmONC were more likely to fulfill the institutional-level RMC index: aOR, 1.75 (99% CI, 1.32–2.31; *P* < 0.001), 1.74 (99% CI, 1.32–2.29; *P* < 0.001), and 1.84 (99% CI, 1.36–2.48; *P* < 0.001), respectively. Lastly, facilities with freestanding MWHs were 41% more likely to fulfill the institutional-level RMC index as compared with those with no MWHs (aOR, 1.41; 99% CI, 1.08–1.84; *P* = 0.001).

4 | DISCUSSION

In the present study, facilities in urban regions, facilities with a higher proportion of MNH providers trained in BEmONC (quartiles 2–4), and facilities with freestanding MWHs were significantly associated with higher availability of the institutional-level RMC index. In line with previous research, the institutional-level RMC index was found to comprise three components: policy, facilities, and experience. The components policy and facilities were also included as health systems conditions and constraints in a 2015 systematic review of mistreatment during childbirth.[16]

The finding that facilities in urban regions performed better on availability of the institutional-level RMC index might be due to the better provision of resources in urban areas.[17] Alternatively, the availability of health administrative structure in urban areas might help facilities to get closer supervision and support. A study on service availability and readiness conducted in 2014 in Ethiopia showed that only 6%–14% of health facilities in agrarian regions received supervision in the 6 months preceding the survey, as compared with 24%–50% in urban regions.[17]

The finding that facilities with a higher proportion of MNH providers trained in BEmONC (quartiles 2–4) had higher availability of the institutional-level RMC index might be attributed to both the fact that RMC is included in the national BEmONC training package,[18] and the continued effort of the Ethiopian Ministry of Health (MOH) in implementation of the compassionate, respectful, and caring (CRC) agenda.[19] Since 2015, the Ethiopian MOH has integrated

TABLE 4 Association of facility characteristics with institutional-level RMC index.

	Univariate analysis		Multivariate analysis	
Characteristic	**OR (99% CI)**	***P* value**	**aOR (99% CI)**	***P* value**
Facility type				
Hospital	Ref.			
Health center	0.90 (0.65–1.26)	0.428	0.89 (0.6–1.32)	0.448
Managing authority				
Public	Ref.			
Private, for-profit	1.42 (0.78–2.59)	0.135	1.32 (0.65–2.7)	0.319
Private, not-for-profit	1.05 (0.50–2.21)	0.868	1.21 (0.56–2.64)	0.519
Region				
Agrarian	Ref.			
Pastoralist	0.79 (0.55–1.14)	0.099	0.97 (0.63–1.47)	0.835
Urban	1.49 (0.99–2.23)	0.012	1.46 (0.91–2.34)	0.037
Facility location	fi			
Urban	Ref.			
Rural	0.85 (0.7–1.03)	0.028	0.96 (0.77–1.18)	0.597
Births per MNH provider				
1st quartile (≤31)	Ref.			
2nd quartile (32–63)	1.01 (0.77–1.32)	0.947	0.94 (0.68–1.28)	0.588
3rd quartile (64–117	1.31 (1.01–1.71)	0.008	1.15 (0.82–1.62)	0.285
4th quartile (≥118)	1.14 (0.87–1.49)	0.199	0.95 (0.65–1.40)	0.748
Births per MNH bed				
1st quartile (≤27)	Ref.			
2nd quartile (28–50)	1.03 (0.79–1.35)	0.770	0.94 (0.68–1.28)	0.590
3rd quartile (51–85)	1.04 (0.79–1.35)	0.738	0.96 (0.68–1.36)	0.775
4th quartile (≥86)	1.19 (0.91–1.54)	0.094	1.13 (0.78–1.63)	0.398
MNH providers trained in BEmONC				
1st quartile (<14%)	Ref.			
2nd quartile (14–28%)	1.83 (1.39–2.40)	<0.001	1.75 (1.32–2.31)	<0.001
3rd quartile (29–49%)	1.78 (1.36–2.33)	<0.001	1.74 (1.32–2.29)	<0.001
4th quartile (≥50%)	1.89 (1.43–2.50)	<0.001	1.84 (1.36–2.48)	<0.001
Maternity waiting home or room				
No	Ref.			
Yes, room in facility	1.13 (0.91–1.40)	0.144	1.14 (0.90–1.44)	0.157
Yes, freestanding	1.35 (1.06–1.72)	0.001	1.41 (1.08–1.84)	0.001

Abbreviations: aOR, adjusted odds ratio; BEmONC, basic emergency obstetric and newborn care; CI, confidence interval; MNH, maternity and newborn health; OR, odds ratio; RMC, respectful maternity care.

concepts of CRC into existing training packages including BEmONC, subsequent to having developed and implemented CRC in job training.[8,19] A previous study in Ethiopia has shown that facilities that implement a quality improvement program, focusing on training and mentoring on BEmONC, are associated with improved performance in labor- and childbirth-related skills.[20]

The finding that facilities with freestanding MWHs were associated with availability of the institutional-level RMC index might be related to strong community links and management of facilities. Construction of MWHs involves the involvement of both health facility management and the local community; thus, the provision of a MWH is an important indicator of a health facility's management commitment to improving maternity care access to women from distant areas. Establishing good community ties, managing health facilities better, and investing in maternity healthcare workers all show a higher awareness of women's needs and more willingness to improve care in order to attain RMC. The Ethiopian MOH standardized the implementation of MWHs in 2015 and supported its expansion across the country to improve access to childbirth service for women in rural areas.[21] The finding

is consistent with a study that analyzed the 2016 EmONC module on MWHs and reported a reduction in perinatal death and obstetric complication in facilities with MWHs as compared with those without.[12] Similarly, a systematic review on the effect of MWH use in Ethiopia and other countries showed a reduction in maternal mortality and stillbirth rates.[22]

The present study has both strengths and limitations. An important strength is that it examined institutional-level factors affecting the availability of RMC by assessing all facilities in the country. Its limitations encompass the fact that the number of items included to measure the overall RMC condition were selected from a small set of questions, as opposed to a longer list covering all theoretic aspects of institutional-level RMC conditions. It should be acknowledged, however, that the limited items included to represent RMC were selected from published studies after conducting an expert review,[23] which will allow replication of the study and might be considered as a strength. Another limitation involves the data collection method because health facility managers and maternity unit heads were interviewed on policy-related questions: although the data collectors explained the purpose of the study, the responses might have been affected by desirability bias.

In conclusion, the present study found that the institutional-level RMC index in health facilities comprised three components: policy, facilities, and experience. Urban administrative region, proportion of healthcare providers trained in EmONC, and availability of MWHs were associated with availability of the institutional-level RMC index. Two in three health facilities did not have the institutional-level RMC index in place. In line with its effort to provide a compassionate, respectful, and caring service, the study suggests that the Ethiopian government needs to consider strengthening support mechanisms in different administrative regions (i.e., urban, pastoralist, and agrarian), implement the provision of healthcare training that incorporates components of RMC, and increase the availability of MWHs. We recommend that the government should develop and implement RMC policies at the health facility level. The government also needs to support health facilities with the necessary resources to ensure availability of the necessary infrastructure and supplies for the provision of RMC.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest.

AUTHOR CONTRIBUTIONS

EDS contributed to study conceptualization, data analysis, original draft preparation, and manuscript editing. RB contributed to study conceptualization, original draft preparation, and manuscript editing. YMK, TVA, and JS contributed to the conceptualization, writing, review and editing of the manuscript. TT contributed to study design, and manuscript review and editing. AG contributed to manuscript review and editing. All authors read and approved the final manuscript.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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CHAPTER 8

General Discussion and Conclusion

General Discussion and Conclusion

8.1 Main Findings and Discussions

8.1.1 Components of respectful maternity care

The papers in this thesis have identified components of respectful maternity care from the perspective of women who used institutional childbirth services (Chapter 2) and graduating midwifery students (Chapter 5), and from the institutional level (Chapter 7).

The research team and I developed two scales that contributed to understanding the level of mistreatment in health facilities and how providers perceive mistreatment of women so that the necessary remedial action can be taken to improve the quality of maternity care in Ethiopia and other countries.

Our previous understanding of respectful maternity care and its components was based on desk reviews of qualitative and quantitative studies[1]. In the papers, I was able to develop a quantitative scale using mixed methods and identify four components of respectful maternity care, which we labeled friendly care, abuse-free care, timely care, and discrimination-free care. Friendly care includes a kind approach, friendly treatment, respect, empathy and sympathy, communicating in a language women understand, and referring to women by name. In abuse-free care, providers respond to women's needs and never slap or shout at women. Components of timely care include women never kept waiting, service not delayed, and cultural rituals allowed in health facilities. Discrimination-free care includes not treating women badly and not insulting them due to their personal attributes.

The four components I identified were consistent with the seven components of mistreatment and the seven rights of childbearing women developed by the WRA, which was based on the desk review on disrespect and abuse in health facilities by Bowser and Hill[1-3].

The 15-item tool that we developed to measure respectful maternity care and assess components of respectful maternity care (Chapter 2) has an acceptable internal consistency and the low correlation among the four components provides evidence for construct validity of the scale [4, 5].

We also developed a scale that assessed providers' perspective of respectful maternity care (Chapter 5). The 10-item mistreatment appraisal among midwifery students has an acceptable level of internal consistency, inter-item correlations, and item-total correlations, which confirms that the ten items together measure a homogeneous construct of respectful maternity care. We ensured content related validity of the mistreatment acceptance scale by a literature review and expert review in the

development process [4]. The mistreatment appraisal scale helped to explore graduating midwifery students' attitudes towards mistreatment of women using an innovative approach. We assessed their attitudes for specific manifestation of mistreatment of women with the assumption that their attitude reflected their future intention to perform the stated behaviors. This was well explained in the theory of planned behavior [6].

We identified three components of institutional-level respectful maternity care, namely respectful maternity care policy (i.e., woman can choose a companion of her choice, woman can choose a birthing position, woman can walk around during labor), experience (i.e., availability of curtains for client privacy, availability of waiting areas for clients and companions, availability of functioning toilets for visitors and family use),and practice (i.e., clients had never shared beds before or after birth, clients had never slept on the floor, and clients had never given birth on the floor). The components of institutional-level respectful maternity care are included in the seven components of mistreatment of women and associated seven rights of childbearing women, evidence of content validity [4].

Most of the discussions on promotion of respectful maternity care and reducing mistreatment of women focus on health care providers and clients. My thesis emphasizes the role of institutional-level respectful maternity care as equally important and requires policy-makers to ensure that women receive the highest attainable level care they deserve. The WHO quality of care framework includes physical and human resources as important components of care. The framework correlates with institutional-level respectful maternity care on physical resources, which also further strengthens the concurrent validity of the scale used to identify the components of institutional-level respectful maternity care.

8.1.2 Prevalence of respectful maternity care and mistreatment of women

The thesis studies' results showed that the practice of WHO-recommended respectful maternity care practices was low (Chapter 3). On average, health care providers performed two out of the three (66%) respectful maternity care practices. The highest performed practice was encouraging women to take light food (83%) and the least performed practices were asking and allowing women to choose her preferred birthing position (29% and 38%) [7]. The observed prevalence of respectful maternity care practices were consistent with a previous study in Ethiopia that utilized similar methods and reported 28% women supported to assume preferred birthing positions, 40.6% women encouraged to take food and fluid [8]. The WHO standards on improving maternal and newborn care in health facilities states that women should be supported during childbirth to improve their experience of childbirth. Support

includes encouraging women to adopt birthing positions of their choice, free movement during the first stage of labor, and intake of food and drink to ensure adequate nutrition and hydration [9]. Quality of care standards are aspirational goals that need to be implemented by all health care providers to improve maternal and newborn care, but our study identified the standards were infrequently implemented. This finding is consistent with a systematic review of barriers of institutional childbirth that found that asking women to adopt to unfamiliar birthing positions and lack of supportive and comforting care in health facilities were some of the barriers for seeking institutional childbirth services [10].

In the study sites, prevalence of mistreatment was high based on observation of provider–women interaction (chapter 3) and interviews with women who used institutional childbirth services in selected facilities (chapter 4). More than one in three women experienced mistreatment based on observation during labor and childbirth (chapter 3). Whereas three in four women reported experience of mistreatment during interviews in health facilities (chapter 4) [11]. The finding on prevalence of mistreatment reported by observation is consistent with a study in four countries that used observation for data collection and reported 41.6% [12] but higher than other studies, such as 21.1% Amhara and Southern Nations, Nationalities, and Peoples' regions in Ethiopia [13]; 22% in Northern Ethiopia [14]; and 20% in Nairobi, Kenya [15]. But the prevalence reported in the provider–women interaction was lower than a systematic review and meta-analysis of seven studies in Ethiopia that reported 49.4% pooled prevalence [16], 75.1% in northwest Ethiopia [17], 74.8% in west Ethiopia [18], and 98.1% in southern Ethiopia [19]. The most frequently reported types of mistreatment were failure to meet professional standards of care and poor rapport between women and providers. Failure to meet professional standards of care includes not requesting consent for procedures, non-confidential care, and abandoning women during labor and childbirth. Poor rapport between women and providers include not explaining procedures, not responding to women’s question, and not allowing women to give birth in their preferred position. This finding is consistent with a systematic review of studies of mistreatment of women in health facilities in Ethiopia that reported high levels of non-consented care, non-dignified care, and non-confidential care [20]. The prevalence of mistreatment reported by interviews of women was consistent with the studies that reported 78% in Addis Ababa, 75.1% in northwest Ethiopia [17], and 74.8% in west Ethiopia [18].

The wide variation in the prevalence of mistreatment reported in the two studies could be due to the different data collection methods used, i.e., observation in Chapter 3 versus interview in Chapter 4. In

structured observation of women-provider interaction, providers may not show their usual behavior due to the presence of external observer—the Hawthorne effect. Hence, the prevalence of mistreatment reported by structured observation would tend to under estimate the issue. On the other hand, interviews of women could be affected by the location and time of the interview. Women had a tendency not to report negative experiences when they were interviewed in a health facility due to fear of reprisal from health workers [21]. Moreover, in situation where mistreatment was normalized, women tend to not report mistreatment [1, 22].

One in three health facilities in Ethiopia provided institutional-level respectful maternity care that included availability of policies and infrastructure that promote provision of respectful care. More than half of the facilities reported the existence of an institutional-level policy that promote provision of respectful maternity care, three in five facilitates reported the existence of necessary facilities to provide respectful maternity care, and four in five facilities reported experiences of respectful maternity care [23]. The WHO quality of maternity care framework that was used for the design and analysis of this thesis includes availability of essential physical resources as a component of quality care as health provider alone cannot ensure provision of quality care. Our finding that most facilities did not have the necessary infrastructure and policies to provide respectful care should trigger an emphasis on institutional and policy-level efforts. The Ministry of Health in Ethiopia has initiated an agenda of developing compassionate and caring health workers, which focuses on health care providers communication skills, managing workplace stress, and creating a strong link with service users. The agenda could be expanded to encompass institutional-level aspects such as policies on birth companion, privacy of maternity unit building setup and redress mechanisms for women who experience mistreatment during labor and childbirth to address the problem of mistreatment.

Disrespectful treatment during childbirth is a violation of human rights of women and newborns that need immediate remedial action [24]. The level of disrespectful treatment reported in our studies and by other researchers indicate the problem is widespread and an indication of a health system in crisis. Understanding the magnitude of mistreatment of women in health facilities is an important starting point to resolve the problem. Health program managers and health workers often do not accept the existence of the problem or consider it as a rare incident by few “rotten apples”. When health providers discussed mistreatment, they usually gave pretext for committing it that included high workload, unfavorable working conditions, and low literacy levels of clients. However, providing compassionate, respectful care should be the primary responsibility of every health care professional and the health

care system. At the same time, women also need to acknowledge situations where their rights could not be fully realized due to structural problems beyond the control of the health care providers. A good example could be the practice of allowing clients' birth companions of choice in health care facilities with no partitions in labor rooms and multiple women using the same room. The health workers cannot satisfy the needs of all women to have their husband with them it would compromise the privacy of the other women. But, they can still allow female birth companions. In situations where it is not possible to provide respectful care for reasons beyond the control of health care providers, the management of health facilities should intervene and improve the quality of service delivery by allocating the necessary budget to improve amenities like privacy screens and assigning appropriate numbers of staff to reduce high burden due to high patient load.

8.1.3 Factors associated with respectful maternity care and mistreatment of women

In Chapter 3 we explored factors affecting provision of respectful maternity care in health facilities. Our analysis indicated that midwives were associated with provision of higher total scores on respectful maternity care practices compared to nurses, health officers, and doctors. The higher performance of midwives is expected due to their curricula that focuses on maternity care and inclusion of recommended respectful maternity care practices [25]. In addition to the curricula and preservice education preparation, midwives are routinely working with women and targeted for in-service training and other capacity building efforts on maternity care that should improve their communication skills and responsiveness to women's needs. It is important for health facility management to understand the relationship women have, and their level of satisfaction, with different cadres (midwives, nurses, health officers, and doctors) and to share lessons among health care providers and create a conducive environment for women. Unless all health workers who have a direct interaction with women have a positive attitude towards creating a positive experience of care for women and families, the perception about the health facility will not change.

Male providers were also identified as performing higher numbers of respectful maternity care practices compared to female counterparts. However, the association was further investigated in Chapter 4 using midwifery graduating students, the study showed no association between gender and acceptance of mistreatment. It is important to point out the difference in the type of participants (practitioner health workers vs. graduating students). The association between gender and performance of health workers is mixed. A study on core competency of graduating nursing and midwifery students in Ethiopia showed male students outperforming female students, but a similar study that focused on nutrition competency

suggested no relationship between gender and performance of graduating students [26]. Further investigation is needed to understand the role of gender of providers and reported levels of mistreatment. A systematic review on barriers to quality midwifery care described a triple burden (social, economic, and professional) faced by female midwives resulted in morale distress and burnout, that could have caused abusive behaviors [27]. Generally, women expect higher level of compassion and respectful care from female providers due to their belief that women can understand their labor pain as they may have experienced it or expect to go through the same process some time in their life. Our finding was not consistent with this expectation. Sometimes female providers could be tougher on women as a sign of encouraging women, which could have been interpreted as mistreatment by women and external observers. It is important to train providers to be supportive of their clients, listen to their needs, and explain every step and what to expect next.

Another factor associated with the provision of respectful maternity care was implementation of a quality improvement approach. Facilities that implemented a standards-based management and recognition (SBM-R) quality improvement approach were associated with higher levels on respectful maternity care. SBM-R implementation included setting performance standards, assessing the performance of the pre-set standards, providing training on emergency obstetric and newborn care, supporting facilities to acquire essential equipment and supplies, and providing onsite mentorship. Inclusion of respectful maternity care in quality improvement programs is an effective strategy to sustainable change in the practice of health care providers[28]. The reason for higher performance of facilities that implemented SBM-R could be the inclusion of key aspects of respectful maternity care in the standards and verification criteria, which helped facilities work on respectful maternity care as a critical aspect of care.

Presence of birth companions was associated with higher total score on respectful maternity care performance. The role of companions was explained in different qualitative assessments. Presence of birth companions ensures that women receive a continuous physical and emotional support from a loved one and reduces the burden on providers, who usually have high workloads. The WHO standard for improving quality of maternal and newborn care in health facilities recommends allowing birth companion for physical and emotional support for women during labor and childbirth [9]. The 2018 WHO recommendation for intrapartum care for positive childbirth experience also includes a companion of the woman’s choice throughout labor and childbirth [29]. Allowing birth companions is recognized as beneficial for ensuring emotional and physical support but is not practiced in most facilities in Ethiopia.

Different reasons were mentioned for not practicing it. Some health facility managers had concerns about the privacy of the other women who share birthing rooms. However, this should not be a reason for not allowing all women to have a birth companion. Female birth companions could be prioritized in areas where privacy of women could be violated, in addition, most health centers in rural area may have only one laboring women at a time. To ensure privacy of women, partitioning the room with curtains should also be considered. Facilities need to allow all beneficial practices that could improve the experience of women and families. In situations, where fulfilling the right of one has an implication for the other women, an amendment could be made to the regulations keeping the benefit of women at the center of the decision. Promotion of respectful maternity care interventions need to stress provision of person-centered care that fulfills the preferences, needs, and values of each women, irrespective of their age, parity, marital status, ethnicity, language, economic status, and other individual or social status. Health facility managers need to institutionalize a mechanism for gathering feedback from their clients to make their care responsive to the needs of the community. Health care providers also need continuous support from the management of their institutions to continually exchange feedback and improve their service.

Chapter 6 explores a mistreatment appraisal of graduating midwifery students. Younger students, stressed students, and those with exposure to mistreatment during their education were associated with a more positive appraisal of mistreatment [30].

Young age was identified as risk factor in previous studies that also identified high levels of stress, low self-esteem, and observation of mistreatment during education [31-33]. Similarly, previous studies also identified more patient-centeredness and better communication skills among older students [34-37]. Previous experience of older students may have caused them to develop a more critical attitude that resulted in them not modeling their instructors' bad behavior [34, 35, 37]. Our findings warrant an individualized monitoring plan for each student during practical attachment. Midwifery and other health program instructors and clinical preceptors need to monitor individual student's attitudes and behavior. Training institution leaders should also ensure that instructors and preceptors are demonstrating recommended communication and behavioral skills when dealing with women and their families. To ensure development of an appropriate attitude and skill of students, the ratio of clinical instructors and preceptors to students need to be improved. A 2013 study of graduating midwifery students revealed that only 36% students reported that their practicum sites had sufficient number of preceptors and 28% reported availability of clinical teachers and preceptors during training[38].

Chapter 7 assessed factors associated with institutional-level respectful maternity care. Facilities in urban regions, with higher proportion of providers trained in basic emergency obstetric and newborn care (BEmONC) (quartiles 2–4), and with free-standing maternity waiting homes were more likely to provide better respectful maternity care at the institutional-level. Health facilities located in urban regions (Addis Ababa, Harari, and Diredawa) reported availability of better institutional-level respectful maternity care readiness. The reason may be attributed to the availability of resources in urban areas and closer supervision from higher level administrative units[39].

The finding that relates facilities with higher proportion of maternity care providers trained in BEmONC with better performance in institutional-level respectful maternity care can be attributed to the inclusion of respectful maternity care components in the training package [40]. Since 2015, the Ethiopian Ministry of Health has been working on integrating compassionate respectful and caring concepts into existing training packages including BEmONC [41, 42]. This is also in agreement with Chapter 3 findings that facilities that implemented a quality improvement approach, which included providing BEmONC training as part of a comprehensive package of interventions, were associated with better performance in respectful maternity care [7]. This finding suggests that integrating components of respectful maternity care topics in relevant capacity building efforts related to maternal and newborn care services is an effective approach to institutionalizing the service and improving experience of women during labor and childbirth in health facilities. Providing a standalone training package focused on respectful care alone could be very expensive and not a sustainable approach.

Facilities that had free-standing maternity waiting homes (MWHs) were also associated with better performance on availability of institutional-level respectful maternity care [23]. This could be attributed to the strong community engagement and leadership in those facilities. Construction of an MWH requires strong health facility management that mobilizes the community in the catchment area; hence, availability of free-standing MWHs indicate the management's commitment to improving maternity care access to women from distant areas. Similarly, another study on the performance of MWHs of the 2016 Ethiopia BEmONC assessment reported that facilities with MWHs were associated with a reduction in perinatal death and obstetric complication [43].

Availability of MWHs could play an important role in filling the gap that women miss during institutional childbirth, i.e. cultural rituals and comfort of continuous support that women enjoy in home births.

8.2 Policy Implications

Mistreatment of women in health facilities is a critical barrier to the achievement of Ethiopia's Sustainable Development Goals' health-related targets, particularly the reduction of maternal mortality. Globally accepted human right standards and principles acknowledge that mistreatment of women during childbirth is a violation of fundamental human right[44, 45]. The results of this thesis indicate that policy-makers need to strengthen the efforts to promote respectful maternity care using targeted and context specific interventions.

The studies showed that the problem of mistreatment of women was multidimensional and that the solution also needs multi-pronged approaches. Interventions to improve provider–women communication can be the starting point, but the problem of mistreatment goes beyond communication.

Some interventions should focus on preservice training institutions as many of the health care providers experience mistreatment of women during their clinical practice, which they may model latter in their professional practice[38]. Other types of interventions require system-level efforts that require policy-level support.

The Ministry of Health's compassionate respectful and caring agenda could be a sustainable solution for promoting respectful maternity care in health facilities in the long-term, but mistreatment of women in health facilities is a critical problem at this moment and needs additional focused approaches. The short- and medium-term policy-level support could be focused in the following areas:

1. Preservice education: this is an important sector where future providers are shaped. To develop competent, compassionate, and respectful health care providers, health care programs need continuous review and monitoring on adherence to the curricula during course delivery. The Student practicums will also need to be properly planned to equip students with the necessary skills to provide women-centered care. Management of higher education institutions need to strengthen monitoring and adherence to curricula to improve attitudes and skills of graduating students. Improving teaching and assessment skill of instructors and preceptors on behavioral skills, communication skills, and values should also be considered through continuous capacity building efforts.
2. Facility-level policy: the availability and implementation of facility-level policy on respectful maternity care needs to be strengthen. Policy-makers need to focus on heath facility-level

policies on prevention of mistreatment and promotion of respectful maternity care and mechanisms for monitoring its implementation. Developing a conducive policy at the national level may not be sufficient unless the policies are articulated and implemented at the health facility level. In health facilities, a mechanism to monitor clients' feedback on the provision of care is critical if facility management makes a committed effort to review the feedback and complaints by community members and works with facility staff to improve the observed problems. When women have complaints, appropriate redress mechanisms should be available otherwise it will create frustration and avoidance of health care facilities by women. Strengthening support groups for women of similar gestational age at community level could help women share their experiences and could serve as a collective voice for women when they face mistreatment.

3. National and regional level: systematic problems related to workload and stress need systematic support that should be planned by facilities with support from national and regional health officials. Improving infrastructure (building with appropriate partitioning for privacy, bathrooms for women, and delivery beds for alternative birthing positions) need priority consideration.

4. Community engagement: to improve the quality of care, health facility management needs to address the preferences of clients and their family, establish and/or strengthen their linkage with the community through existing patient groups, community representatives, and periodic review meeting. The use of discussion platforms initiated in rural health centers in Ethiopia should be strengthened and institutionalized.

5. Civil societies: groups that focus on the rights of women can play a leading role in raising the awareness level of women on their rights and advocate for accountability of health care providers who commit violation of women's rights. Experiences in Kenya and Latin America show that active engagement of civil societies can create high levels of awareness of the problem and pave the way towards the solution.

8.3 Conclusions and Recommendations

This thesis fills gaps in the understanding of respectful maternity care from women's perspective and sheds light on institutional-level respectful maternity care, which has not been explored in-depth in previous studies. The thesis also provides insight on the prevalence of mistreatment and respectful maternity care in Ethiopia and identified different drivers of mistreatment that need to be considered for the promotion of respectful maternity care in health facilities and in preservice education institutions. Mistreatment of women in health facilities is a violation of human rights that will hinder women from using available services [2]. The thesis found that the prevalence of mistreatment was unacceptably high. The level of mistreatment observed calls for urgent action by all stakeholders as it endangers the fundamental right of women to have the highest attainable level of health care the country could provide. If Ethiopia is to reduce its unacceptable high rates of maternal and newborn mortality, it needs to increase the rate of institutional births. This will not happen until women no longer fear being mistreated during maternity care.

The papers also identified important socio-demographic and health facility related drivers of mistreatment. Respectful maternity care integration should focus on preservice education centers, health facilities, professional societies, and national and regional level health managers.

Interventions targeting preservice education institutions need to focus on developing health care providers who understand the rights of childbearing women and the principles of respectful maternity care. Interventions should also improve the education system drivers of mistreatment. For example, a midwifery student who observed that women were yelled at for different reasons by practitioners during a practical attachment in a hospital is more likely to repeat the same behavior when assigned as a practitioner. Hence, the teaching environment should serve as an ideal environment for cultivating positive attitudes and behavior of future health care providers. If not, it could become a breeding ground for negative behaviors such as mistreating women. In addition to academic performance, preservice education institutions should also consider including recruitment criteria that help to filter students who are motivated to serve women. For example, voluntary work in the community—like caring for the elderly or orphans or working in rehabilitation clinics for drug addicts—could be added as criteria for accepting students in health sciences programs.

Interventions targeting health facilities focus on improving interactions women and their families have with the health workers. Facility-level interventions should strengthen accountability mechanism for all

health workers who have direct contact with women and birth companions. Engagement of health facility leadership will facilitate the availability and observance of institutional-level respectful maternity care policies and availability of supplies and resources necessary to ensure provision of respectful maternity care.

Engagement of professional societies and communities will ensure sustainability of initiatives to promote respectful maternity care. Issues related to patient rights and professional ethics will be better addressed by professional societies as it is one of the focus areas they are established for.

I am proposing the following key recommendations for consideration by relevant stakeholders to promote respectful maternity care in Ethiopia:

1. Integrate respectful maternity care into relevant quality improvement interventions with adequate emphasis on the role of the health care system in ensuring a positive experience of care and providing the necessary supplies and infrastructure in relevant in-service training packages. Respectful maternity care focused training and other capacity building efforts are important starting points, but they need to be integrated with existing technical training focused on maternal care services to tackle the problem in a sustainable manner.
2. Strengthen supervision and routine monitoring of maternity care service provision in health facilities to ensure that women are receiving the highest attainable quality of care. Monitoring activities should also cover broader aspects that cause health care providers to be abusive. For example, understanding providers' workloads and stress levels will help supervisors develop and implement appropriate mechanisms to help health workers to cope.
3. Ensure availability of appropriate infrastructure (design of buildings to ensure privacy) and availability and implementation of institutional-level respectful maternity care policies and strengthen accountability and redress mechanisms in health facilities. For new facilities or expansion of existing facilities, design standards need to consider the privacy requirement of every woman and their families. For existing facilities that do not fulfill visual privacy, health facility management needs to ensure minor renovations to maternity units to ensure privacy of every woman and their families.
4. Strengthen preservice education training curricula to include recommended respectful maternity care components and ensure students are graduated with the necessary clinical and behavioral skills. It is also important to closely monitor the implementation of curricula by

assessing graduating students' attitude and practices towards providing compassionate respectful maternity care services. Inclusion of behavior skills for the provision of respectful care should be incorporated into assessment of students in preservice education.

5. Engage relevant stakeholders, including professional societies, to improve adherence to the professional code of ethics for health workers. At health facility level, engage community representatives to understand the community's view on service quality and the institution's responsiveness to meet women's needs. Similarly, professional societies could also play an important role in providing continuous professional development programs on patient rights, communication skills and professional code of ethics of health care providers.

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8

Summary

Summary

Ethiopia's success story of the expansion of access to primary health care in the past two decades beats the rate of utilization of services, particularly childbirth assisted by skilled providers. Low use of childbirth services was partly caused by high levels of mistreatment of women in health facilities. This thesis explores the concept of respectful maternity care from the prospective of women and health care providers, the prevalence of respectful maternity care, and identified associated factors.

Chapter 1 describes Ethiopia's health care delivery structure and examines progress in key health outcome indicators registered in the past two decades. The history of respectful maternity care movements and the current terminologies used to explain the actions are explored. The chapter explains the conceptual framework guiding the analysis of this thesis and the key research questions.

Chapter 2 explores the definition of respectful maternity care for women who use childbirth services in public health facilities in Ethiopia. The study used an inductive approach that included in-depth interviews of women and an expert review to develop a quantitative scale for assessing women's perception of respectful maternity care provided in health facilities. A 15-item respectful maternity care scale was validated on a sample of 509 postpartum women; the scale proved to have good psychometric properties. It also explored four components of respectful maternity care: friendly care, abuse-free care, discrimination-free care, and timely care, which overlapped with the seven dimensions of disrespect and abuse of women developed by a desk review.

Chapter 3 assesses the prevalence of respectful maternity care and mistreatment of women observed during structured provider-women interaction observations during childbirth. The study identified that women on average received 5.9 (66%) of the 9 recommended respectful maternity care practices during childbirth. At least one form of mistreatment was observed in 36% of provider-women interactions. Factors associated with observed respectful maternity care included male gender of provider, midwives compared to other cadres, implementation of quality improvement approach at the facility, and the presence of birth companion. None of the hypothesized factors were associated with observed mistreatment of women.

Using a facility-based, cross-sectional study in the four most populous regions of Ethiopia, Chapter 4 examined the prevalence of self-reported mistreatment of women in health facilities and factors associated with the reported levels of mistreatment. Three out of four women reported any mistreatment, physical and verbal abuse were reported by seven (2%) and 31 (8%) women respectively, failure to meet professional standards of care was reported by 111 (29%), and poor rapport between women and providers were reported by 274 (72%) women. Women with four or more previous births, Muslim women, and women interviewed in facilities with less than 17 births in a month per maternal and neonatal staff were more likely to report mistreatment.

Chapter 5 explains an innovative approach that utilized literature review and expert review to develop and validate a scale for assessing appraisal of mistreatment among graduating midwifery students. The study explored the role of gender in mistreatment appraisal and the possible mediating roles of stress and self-esteem among graduating midwifery students. The finding revealed that there was no difference between males and females in appraisal of mistreatment; moreover, the relationship between gender and appraisal of mistreatment was not mediated by stress and self-esteem.

Chapter 6 assesses factors that affect a positive appraisal of mistreatment of women among graduating midwifery students. Factors that were significantly associated with positive appraisal of mistreatment were age of students, stress, and previous observation of mistreatment during education. Younger students, stressed students, and students who had observed more mistreatment during their education reported more positive mistreatment appraisal. The findings showed that interventions that target mistreatment of women need to prioritize preservice education institutions to address health care providers' attitude and respectful maternity care skills before joining the health workforce.

Chapter 7 used a cross-sectional census of 3,804 health facilities in Ethiopia to explore prevalence of institutional-level respectful maternity care index components and examine factors associated with the reported institutional-level respectful maternity care index. The study identified an outcome variable:

institutional-level respectful maternity care that consisted of respectful maternity care policy, respectful maternity care experience, and facilities for provision of respectful maternity care. Overall, 28% of facilities (hospitals 29.9%; health centers 27.8%) reported availability of the components of the institutional-level respectful maternity care index. Factors associated with availability of index components were facility locations in urban regions, percentage of maternal and newborn health workers trained in basic emergency obstetric and newborn care, and availability of maternity waiting homes in health facilities.

Chapter 8 discusses the six study findings, explores policy implications, and provides conclusions and recommendations for policy makers in Ethiopia and other low- and middle-income countries. Policy implications are assessed with the current Ministry of Health's agenda for compassionate, respectful, and caring health care providers and stress the need to provide targeted support at various levels, including health facilities; national-, regional-, and district-level health offices; preservice education institutions; and at community level and with civil society organizations. This thesis recommends that stakeholders integrate respectful maternity care in quality improvement interventions in health facilities, strengthen supervision and mentorship focused on respectful maternity care in health care facilities, strengthen infrastructure necessary for provision of respectful maternity care, strengthen the availability and implementation of curricula that promote respectful maternity care in preservice education institutions, and improve engagement of pregnant women and civil society.

Samenvatting

Samenvatting

Het Ethiopische succesverhaal van de uitbreiding van toegang tot basisgezondheidszorg in de voorbije twee decennia overstijgt het gebruikt van diensten, vooral geboortes geassisteerd door opgeleide zorgverleners. Het lage gebruik van geboortediensten werd vooral veroorzaakt door het hoge niveau van mishandeling van vrouwen in zorgfaciliteiten. Deze thesis verkent het concept van respectvolle kraamzorg uit het perspectief van vrouwen en zorgverleners, de prevalentie van respectvolle kraamzorg, en geïdentificeerde geassocieerde factoren. Hoofdstuk 1 beschrijft de Ethiopische structuur voor het aanbieden van gezondheidszorg en onderzoekt de vooruitgang van belangrijke uitkomstindicatoren die in de voorbije twee decennia geregistreerd werden. De geschiedenis van respectvolle kraamzorg en de huidige terminologie gebruikt om de actie uit te leggen, worden verkend. Het hoofdstuk legt het conceptuele kader uit dat de analyse van deze thesis en de belangrijke onderzoeksvragen stuurt. Hoofdstuk 2 verkent de definitie van respectvolle kraamzorg voor vrouwen die geboortediensten gebruiken in openbare zorgfaciliteiten in Ethiopië. De studie gebruikte een inductieve aanpak die bestond uit diepgaande gesprekken met vrouwen en een expertbeoordeling voor het ontwikkelen van een kwantitatieve schaal voor het evalueren van de perceptie van vrouwen over respectvolle kraamzorg aangeboden in zorgfaciliteiten. Een respectvolle kraamzorgschaal van 15 items werd gevalideerd met een sample van 509 postpartum vrouwen; de schaal toonde aan dat het goede psychometrische eigenschappen heeft. Het verkende ook vier componenten van respectvolle kraamzorg: vriendelijke zorg, misbruikvrije zorg, discriminatievrije zorg en tijdige zorg, die overlapten met de zeven dimensies van respectloosheid en misbruik van vrouwen ontwikkeld na evaluatie. Hoofdstuk 3 evalueert de prevalentie van respectvolle kraamzorg en mishandeling van vrouwen geobserveerd tijdens gestructureerde observaties van interacties tussen zorgverleners en vrouwen tijdens de geboorte. De studie identificeerde dat vrouwen gemiddeld 5,9 (66%) van de 9 aanbevolen respectvolle kraamzorgpraktijken ontvingen tijdens de geboorte. Minstens één vorm van mishandeling werd geobserveerd in 36% van interacties tussen zorgverleners en vrouwen. Factoren geassocieerd met geobserveerde respectvolle kraamzorg waren onder andere het mannelijk geslacht van zorgverleners, kraamvrouwen vergeleken met andere kaders, implementatie van kwaliteitsvolle verbeteringsaanpak in de faciliteit, en de aanwezigheid van een geboortepartner. Geen van de veronderstelde factoren werden geassocieerd met de geobserveerde mishandeling van vrouwen. Met een op faciliteiten gebaseerde transversale studie in de vier dichtstbevolkte regio's van Ethiopië onderzocht Hoofdstuk 4 de prevalentie van zelf-gerapporteerde mishandeling van vrouwen in gezondheidsfaciliteiten en factoren geassocieerde met de gerapporteerde niveaus van mishandeling. Drie op vier vrouwen rapporteerden een mishandeling, fysiek en verbaal misbruik werden gerapporteerd door zeven (2%) en 31 (8%) vrouwen respectievelijk, falen om te voldoen aan professionele zorgstandaarden werd gerapporteerd door 111 (29%), en slechte overeenkomst tussen vrouwen en zorgverleners werd gerapporteerd door 274 (72%) vrouwen. Vrouwen met vier of meer voorafgaande geboortes, Moslimvrouwen, en vrouwen geïnterviewd in faciliteiten met minder dan 17 geboortes per maand per kraamzorg- en neonataal personeel waren meer waarschijnlijk om mishandeling te rapporteren. Hoofdstuk 5 verduidelijkt een innovatieve aanpak die gebruikt maakte van literatuurevaluatie en expertbeoordelingen om een schaal te ontwikkelen en valideren voor het beoordelen van de toetsing van mishandeling onder afstuderende vroedkundestudenten. De studie verkende de rol van geslacht bij de mishandelingsbeoordeling en de mogelijke tussenkomende rollen die stress en zelfbeeld spelen onder afstuderen vroedkundestudenten. De bevindingen brachten aan het licht dat er geen verschil was tussen mannen en vrouwen in de beoordeling van mishandeling; daarbovenop werd de relatie tussen geslacht en beoordeling van mishandeling niet gemedieerd door stress en zelfbeeld. Order #78755-1913447 Page 3 of 3 Hoofdstuk 6 evalueert factoren die een positieve

beoordeling van mishandeling van vrouwen onder afstuderende vroedkundestudenten beïnvloeden. Factoren met een significante associatie met positieve beoordeling van mishandeling waren de leeftijd van studenten, stress, en vorige observatie van mishandeling tijdens opleiding. Jongeren studenten, gestresseerde studenten, en studenten die meer mishandeling gezien hadden tijdens hun opleiding rapporteerden meer positieve mishandelingsbeoordelingen. De bevindingen toonden aan dat interventies die focussen op de mishandeling van vrouwen de preservice opleidingsinstituten moeten prioriteren om de attitude van zorgverleners en respectvolle kraamzorgvaardigheden aan te pakken voordat er toegetreden wordt tot de gezondheidszorgsector. Hoofdstuk 7 gebruikte een transversale census van 3,804 gezondheidsfaciliteiten in Ethiopië om de prevalentie te verkennen van institutionele indexcomponenten van respectvolle kraamzorg en om factoren te onderzoeken die geassocieerd zijn met de rapporteerde institutionele respectvolle kraamzorgindex. De studie identificeerde een uitkomstvariabele: institutionele respectvolle kraamzorg die bestond uit een respectvol kraamzorgbeleid, respectvolle kraamzorgervaring, en faciliteit ter voorziening van respectvolle kraamzorg. In het algemeen rapporteerden 28% van faciliteiten (hospitalen 29,9%; zorgcentra 27,8%) beschikbaarheid van de componenten van de institutionele respectvolle kraamzorgindex. Factoren geassocieerd met beschikbaarheid van indexcomponenten waren faciliteitenlocaties in stedelijke regio's, percentage van gezondheidswerkers voor moeders en borelingen die kennis hebben van de basis van verloskundige en kraamspoedzorg, en beschikbaarheid van kraamwachtkamers in gezondheidsfaciliteiten. Hoofdstuk 8 bespreekt de zes studiebevindingen, verkent beleidsimplicaties, en biedt conclusies en aanbevelingen voor beleidsmakers in Ethiopië en andere landen met lage en gemiddelde inkomens. Beleidsimplicaties worden geëvalueerd met de huidige agenda van het Ministerie van Gezondheid voor meelevende, respectvolle, en zorgdragend gezondheidszorgverleners en benadrukken de noodzaak om doelgerichte steun te voorzien op allerlei niveaus, inclusief gezondheidsfaciliteiten; nationale, regionale en lokale gezondheidskantoren; preservice opleidingsinstituten; en op gemeenschapsniveau en met burgerlijke maatschappijorganisaties. Deze thesis beveelt aan dat belanghebbenden respectvolle kraamzorg integreren in kwaliteitsverbeterende interventies in gezondheidsfaciliteiten, het overzicht en mentorschap versterken met het oog op respectvolle kraamzorg in gezondheidsfaciliteiten, de infrastructuur die noodzakelijk is voor de voorziening van respectvolle kraamzorg versterken, de beschikbaarheid en implementatie verhogen van curricula die respectvolle kraamzorg in preservice opleidingsinstituten promoten , en engagement van zwangere vrouwen en burgerlijke maatschappij verbeteren

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I am deeply grateful to the leadership of Jhpiego for allowing me to be enrolled in such a collaborative initiative and providing me the opportunity to improve my capacity in research through manuscript writing workshops and participation of scientific conferences. I would like to extend my appreciation to all my former Jhpiego colleagues in general and Dr. Eva Bazent, Dr. Firew Ayalew, Dr. Tegbar Yigzaw, Dr. Sharon Kibwana, Dr. Tadele Bogale and Hannah Gibson for their mentorship and support throughout the PhD journey. I am grateful for the support and collaboration of Rena Bakker on sections of the thesis related to preservice education. A special thanks to Elizabeth Thompson for her support in editing the draft thesis.

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Since October 2019, Mr. Ephrem provided a key role in the development and roll-out of electronic information system for the national hepatitis elimination program in Rwanda seconded by Clinton Health Access initiative (CHAI). Prior to joining CHAI, Mr. Ephrem coordinated Monitoring Evaluation and Research (MER) activities for Jhpiego Ethiopia country programs that consisted of the USAID-funded strengthening Human Resources for Health (HRH), Maternal and child survival program (MCSP) and Maternal and Child Health Integrated program (MCHIP) programs and Voluntary Medical Male Circumcision (VMMC) Programs. Designed and led the implementation of the performance monitoring plans, including selection of key maternal and newborn health and HIV/AIDS indicators. Collected and analyzed M&E data, designed data management and evaluation tools and systems. Successfully integrated program learning activates in programing. Provided guidance to ensure that reports are tracked in Jhpiego results information system (JRISE) and updated timely. Provided technical support to Regional Health Bureaus management teams for data collection and analysis, and data for decision-making, specifically for monitoring maternal and newborn health (MNH) outcomes following implementation of a quality assurance initiative at hospitals. Designed and implemented program learning activities for all projects and ensured evidence generated are utilized to improve quality of implementation.

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Callaghan-Koru AJ, Seifu A, Tholandi M, de Graft-Johnson J, **Daniel E**, Rawlins B, Worku B, Baqui AH: Newborn care practices at home and in health facilities in 4 regions of Ethiopia. BMC Pediatrics 2013 13:198. doi:10.1186/1471-2431-13-198

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Towards dementia risk reduction among individuals with a parental family history of dementia
(dr N Smidt, prof SEJA de Rooij)

Dams AC
Achilles tendon rupture; current clinical practice, imaging and outcome
(prof RL Diercks, prof J Zwerver, dr I van den Akker-Scheek, dr I Reininga)

Buitenhuis AH
It takes two: the role of a non-smoking partner in a quit attempt; a look at dyadic planning and daily interactions
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The Safe Motherhood Series

The Safe Motherhood Series

The Dutch Working Party 'International Safe Motherhood and Reproductive Health' aims to contribute to improvement of the reproductive health status of women around the globe, in particular by collaborating with local health workers (http://www.safemotherhood.nl). The Working Party is part of both the Dutch Society of Obstetrics and Gynaecology (NVOG) and the Dutch Society for International Health and Tropical Medicine (NVTG). The activities that are undertaken under the umbrella of the Working Party can be grouped into four pillars: education, patient care, research and advocacy.

Research activities are undertaken by (medical) students, Medical Doctors International Health and Tropical Medicine and many others. Some research activities develop into PhD-trajectories. PhD- candidates all over the world, Dutch and non-Dutch, work on finding locally acceptable and achievable ways to improve the quality of maternal health services, supervised by different members of the Working Party. Professor Jos van Roosmalen initiated the Safe Motherhood Series, which started in 1995.

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