Clinical Epidemiology and Global Health 12 (2021) 100830

Contents lists available at ScienceDirect

Clinical Epidemiology and Global Health

journal homepage: www.elsevier.com/locate/cegh

Original article

Adherence to respectful maternity care guidelines during COVID-19 pandemic and associated factors among healthcare providers working at hospitals in northwest Ethiopia: A multicenter, observational study

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ARTICLE INFO

Keywords:
COVID-19
Healthcare provider
Observational study
RMC

ABSTRACT

Background: Respectful maternity care is one of the facilitators of women's access to maternity healthcare services. However, it has been evidenced that maternal healthcare services are compromised during the pandemic of coronavirus disease 19 (COVID-19). Moreover, there was a dearth of evidence on healthcare provider's adherence to respectful maternity care guidelines through direct observation. Hence, this study intended to assess healthcare provider's adherence to respectful maternity care guidelines during COVID-19 in northwest Ethiopia.
Methods: A multicenter observational cross-sectional study was conducted at hospitals in northwest Ethiopia from November 15th/2020 to March 10th/2021. A simple random sampling technique was employed to select 406 healthcare providers. Data were collected through face-to-face interviews and direct observation using a structured questionnaire and standardized checklist respectively. The data were entered into Epi Info 7.1.2 and exported to SPSS version 25 for analysis. A binary logistic regression model was fitted. Both bivariable and multivariable logistic regression analyses were undertaken. The level of significance was claimed based on the adjusted odds ratio (AOR) with a 95% confidence interval (CI) at a p-value of $\leq$0.05.
Results: The proportion of healthcare providers adhering to respectful maternity care guidelines during COVID-19 was 63.8% (95% CI: 59.1, 68.4). Job satisfaction (AOR = 1.82; 95% CI: 1.04, 3.18), professional work experience of 3–5 years (AOR = 2.84; 95% CI: 1.74, 4.6) and $\geq$6 years (AOR = 2.21; 95% CI: 1.11, 4.38), and having education parallel to work (AOR = 0.33; 95% CI: 0.21, 0.51) have an independent statistical significant association with adherence to respectful maternity care guidelines.
Conclusion: In this study, six out of ten healthcare providers had good adherence to respectful maternity care guidelines. Ensuring health worker's job satisfaction and providing education opportunities by the government would improve healthcare provider's adherence to respectful maternity care standards.

1. Introduction

Respectful maternity care (RMC) is defined as a cordial and honorable treatment or service provision for women at a health facility.[1] It is also an approach towards women that is individual-centered and based on the value of human rights. It primarily relies on the principle of providing obstetrical care with great kindness, dignified, confidential, non-discriminatory, women-centered, and non-criminal way throughout the continuum of care.[2] Ensuring universal access to safe, acceptable, quality sexual and reproductive health care especially maternal health care can reduce and prevent the global burden of maternal mortality.[3] RMC promotes and reflects the protection of human rights like voluntary maternal healthcare programs that respect, protect, and fulfill human rights.[4]

Currently, disrespect and abuse (D&A) of service-seeking women is becoming an urgent problem that needs the concern of all stakeholders

Abbreviations: AOR, Adjusted Odds Ratio; CRC, Companionate and Respectful Care; CI, Confidence Interval; COR, Crude Odds Ratio; D&A, Disrespect and Abuse; IESO, Integrated Emergency Surgeon Officer; MM, Maternal Mortality; MMR, Maternal Mortality Ratio; RMC, Respectful Maternity Care.

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https://doi.org/10.1016/j.cegh.2021.100830
Received 13 May 2021; Received in revised form 23 June 2021; Accepted 5 July 2021
Available online 12 July 2021

including health care research, quality and education, human rights, and civil rights advocacy worldwide.[5] In addition, coronavirus disease 19 (COVID-19) is sweeping the world, and the burden on healthcare facilities is growing.[6,7] The negative impact of the pandemic led to fear, confusion, and frustration among health workers limiting their ability to provide RMC according to evidence-based guidelines. Unfortunately, exacerbation of abuse and mistreatment of women already widespread in the context of childbirth, including lack of information, denial or suspension of care, neglect, abandonment, and abuse around the world.[8,9]

Thus, overcoming preventable causes of maternal and neonatal mortality is one of the key indicators of sustainable development goals (SDG).[10] Despite remarkable efforts, maternal and neonatal mortalities remain unacceptably high globally. Existing evidence illustrates that about 810 women every day, and 295, 000 women every year die from pregnancy and childbirth-related complications.[11] Similarly, about 2.5 million neonates die from preventable causes, which accounts for 47% of the under-five mortality.[12] Of these, more than two-thirds of the maternal and neonatal mortalities are taken place in sub-Saharan Africa (SSA), including Ethiopia.[12,13] One of the globally endorsed strategies of combating these huge burdens is the provision of respectful maternity care (RMC). In connection to this, World Health Organization (WHO) prepared a document focusing on prevention and elimination of disrespect and abuse (D&A) during institution-based delivery in 2014.[14] WHO further recommends that all healthcare providers should practice RMC on a sustainable basis for positive pregnancy outcomes.[15]

Every woman has the right to get health services equally, respectfully, and with full dignity. Besides, avoidance of ill-treatment and disrespectful care during childbirth is simple but determinant for better maternal health outcomes and the good adherence of women to maternal and neonatal health services given during the postnatal period.[16] However, a lot of women were treated disrespectfully at the time of childbirth and other obstetric care.[14] One in three women is subjected to abuse and violence during labor and delivery.[17] A systematic review on D&A care during childbirth in Ethiopia revealed that one in two women experienced D&A.[5] Thus, stakeholders are advised to apply further efforts on this concern so as to alleviate the problem permanently.[5] In the meantime, the problem gets worse during the pandemic of coronavirus disease 19 (COVID-19).[18] While poor quality services and violations are expected during pandemics such as COVID-19, health professionals should provide maternal and neonatal health services with equality and dignity as it is a key pillar in reducing mortality and morbidity.[19] According to a recent finding, the institutional delivery rate decreases by half during the pandemic of COVID-19.[18] One of the barriers to the non-utilization of maternal health services during the COVID-19 pandemic was the stigma they experienced from the healthcare providers.[20] Evidence indicated that increments have been also seen in the institutional stillbirth and neonatal mortality rate and decreased quality of care given after the emergence of COVID-19.[18,21]

Maternal care during childbirth helps to forge deep friendships and a positive view of other maternal and child health services. So far, the implementation of RMC is weak in developing countries, including Ethiopia.[22] However, it is implausible to improve the uptake of facility delivery as long as the existing discourteous and disgraceful maternity care service provision remains unresolved.[23] In 2019, 50% of Ethiopian women gave birth at home without getting a skilled birth attendant.[24] Evidence has shown that most women in developing countries prefer home delivery to health facility delivery. The reason behind not giving birth at a health facility was the perceived poor quality of services and history of undesirable care from healthcare providers.[25,26] Provision of training for providers (both in-service and pre-service), making the environment conducive, and developing strong health policies are believed to promote RMC.[27]

In Ethiopia, several studies have been conducted regarding D&A care during facility-based childbirth. These studies concluded that delivery at private hospitals, having antenatal care (ANC), delivery by male healthcare providers,[28] delivery attended by a midwife,[29] and day-time delivery[30] were factors that increase the likelihood of RMC. But, most of the previous studies collected the data from the mothers. It should be noted, however, that both the service provider and the perpetrators are health professionals, so it would be better to gather the information directly from the health professionals. This could then help to find a better figure about the extent of the burden of the problem and obtain basic evidence for any intervention aimed at improving the provider's adherence to RMC guidelines. Furthermore, the shortage of evidence on respectful maternity care in the context of COVID-19 triggers numerous changes to the provision of maternity care. Therefore, this study aimed at assessing the healthcare provider's adherence to RMC guidelines during the pandemic of COVID-19 and associated factors in Northwest Ethiopia.

2. Methods and materials

2.1. Study design, period, and settings

A multicenter institution-based observational cross-sectional study was conducted from November 15th, 2020 to March 10th, 2021. It was conducted at hospitals of northwest Ethiopia, Amhara regional state. Specifically, the study was conducted in the Gondar province which comprises four zones namely South Gondar, Central Gondar, West Gondar, and North Gondar zone. In the province, there are a total of 22 hospitals which include 2 referral hospitals, 1 general hospital, and 19 primary hospitals. These hospitals are serving more than 10 million population in the zones of Gondar province and surrounding zones such as North Wollo and Waghimra zone.

2.2. Study population

All healthcare providers working at the maternity wards in the selected hospitals were the study population. These include medical doctors, midwives, and integrated emergency surgeon officers (IESO). Healthcare providers who were available at the workplace during the data collection period were included. Non-permanent employees (i.e., health care providers who have a professional experience of fewer than six months were excluded).

2.3. Sample size determination and sampling procedure

A single population proportion formula was utilized to calculate the sample size (N) by taking the following assumptions into consideration: proportion of provider's adherence to RMC guidelines - 50% (p = 0.5), level of significance - 5% (α = 0.05), Z α/2–1.96, margin of error - 5% (d = 0.05); and non - response rate −10%. Accordingly, $N = \frac{(Z\alpha/2)^2 * p(1-p)}{d^2} =$ $N = \frac{(1.96)^{2*}0.5(1-0.5)}{(0.05)2} = 384$. After adding a 10% for non-response rate, we obtained a total sample size of 422. Data were collected from 15 hospitals (i.e., 2 tertiary hospitals, 1 general hospital, and 12 primary hospitals). During the study period, 544 healthcare providers were present in the selected hospitals. The selected hospitals were the University of Gondar comprehensive specialized hospital (n = 93), Debre Tabor specialized hospital (n = 70), Debark General hospital (n = 33), Ambagiorgis primary hospital (n = 16), Dembia primary hospital (n = 20), Metema primary hospital (n = 30), Tach Giant primary hospital (n = 24), Nefas Mewucha primary hospital (n = 20), Gohala primary hospital) (n = 16), Ebinat primary hospital (n = 10), Andabet primary hospital (n = 14), Delgi primary hospital (n = 10), Ayikel primary hospital (n = 16), Mekaneyesus primary hospital (n = 17), and Addis Zemen primary hospital (n = 17). The seven primary hospitals were excluded due to their very low delivery size. The lists of healthcare providers were obtained from each hospital and the sampling frame was designed by numbering the list of healthcare providers. Then, the total

sample size was distributed to each selected hospital proportionally. Finally, the participants were selected randomly.

2.4. Variables of the study

The outcome variable for this study was the healthcare provider's adherence to RMC guidelines. Whereas, the explanatory variables are socio-demographic factors such as age, sex, educational level, marital status, having smartphones and/or computer and exposure to media, and workplace and professional-related variables including the year of experience, professional category, relation to the nearby boss, intention to stay in the profession, job satisfaction, facility type, working time, training on basic emergency obstetric and newborn care (BEmONC), presence of regular follow-up by the manager, workload in the delivery room, presence of birth assistant, working part-time in private institutions, education while working, training on compassionate respectful care (CRC), and location of the health facility.

2.5. Measurements and operational definitions

Respectful maternity care: A total of 30 items were prepared to assess RMC which are classified into seven categories including physical abuse, non-consented care, non-confidential care, non-dignity care, discriminatory care, neglected care, and detention in health facilities. Each item has a "Yes "or "No" response giving a score of 0–30 (i.e., a score of 1 was given for "No" and 0 for "Yes" response). Similarly, healthcare provider's adherence to RMC standards was dichotomized as good adherence (which was coded as "1") and poor adherence (which was coded as "0''). Accordingly, a score of above the mean was considered as good adherence to RMC guidelines based on the summative score designed to assess healthcare provider's adherence to RMC guidelines.[28]

Job satisfaction: A total of 9 questions were prepared to assess the satisfaction level of healthcare providers. Thus, healthcare providers who were able to answer above the mean score were considered as satisfied whereas healthcare providers who scored below the mean were considered as not satisfied.[31]

2.6. Data collection tools, methods, and procedures

The data collection tool was developed by reviewing the literature.[30,32,33] The data were collected through face-to-face interviews and direct observation using a structured questionnaire and checklists respectively. The questionnaire was assessed by a group of researchers to evaluate and enhance the items in the question. The questionnaire contains socio-demographic characteristics, professional and work-related factors, and questions assessing the healthcare provider's adherence to RMC standards. To decrease the Hawthorne effect, the data was collected over four months to allow health workers to settle to the normal work pattern. In addition, the healthcare providers were observed initially using the checklist and interviewed later on using the standardized questionnaire. Fifteen diploma and 5 BSc midwives were selected for data collection and supervision respectively.

2.7. Data quality control

Before the actual data collection, a pretest was done on 20 healthcare providers outside of the study area. The data collectors and supervisors were trained about the interview technique and overall data collection process for 3 days. During data collection, the questionnaire was checked for completeness by the supervisors.

2.8. Data processing and analysis

Data were checked, coded, and entered into EPI INFO version 7.1.2, and analyzed using SPSS version 25. Descriptive statistics were used to present participants' characteristics, workplace and profession-related characteristics, and healthcare provider's compliance with RMC guidelines. The binary logistic regression model was fitted. Both bivariable and multivariable logistic regression analyses were carried out. Variables having a p-value of less than 0.2 at the bivariable logistic regression analysis were entered into the multivariable logistic regression analysis for controlling confounders. In the final model, the level of significance was declared based on AOR with its 95% CI at a p-value of $\leq$0.05.

3. Results

3.1. Socio-demographic characteristics

A total of 406 healthcare providers were observed in this study. Sixteen healthcare providers were excluded from the final analysis due to their incomplete data making a response rate of 96.2%. The mean age of the study participants was 28.4 years (SD $\pm$ 4.7) and slightly more than two-thirds of the study participants were male. Of these, 59.8% of the healthcare providers were degree in midwifery holders and 51.7% of the participants had a professional work experience of 3–5 years (Table 1).

3.2. Workplace and profession-related characteristics

Of the total healthcare providers, 52.7% were from primary hospitals and more than three-fourths of them had a good relationship with their nearby manager. About 29.3% and 31% of the participants have received training on CRC and BEmONC respectively. One hundred fifty-one (37.2%) of the study participants were learning education while they are working their job **(Table 2).**

3.3. Healthcare provider's adherence to RMC standards

The overall proportion of healthcare providers adhering to RMC standards during childbirth was 63.8% (95% CI: 59.1, 68.4). From the category of RMC standards, 88.7% of providers have not committed discrimination based on women's specific status. On the other hand, 269 (66.3%) and 262 (64.5%) of healthcare providers did not tell the women what is going to be done and did not obtain consent for any procedure during labor and delivery respectively **(Table 3).**

Table 1
Socio-demographic characteristics of study participants in hospitals of northwest Ethiopia, 2020/2021 (n = 406).

Characteristics	Category	Frequency	Percentage (%)
Age (in year)	≤25	85	20.9
	26–30	247	60.8
	≥31	74	18.2
Sex	Male	272	67
	Female	134	33
Current marital status	Single	164	40.4
	Married	242	59.6
Work experience	≤2	140	34.5
	3–5	210	51.7
	≥6	56	13.8
Media exposure	Yes	207	51
	No	199	49
Educational level	Midwifery diploma	119	29.3
	Midwifery degree	243	59.8
	Midwifery master's degree	25	6.2
	Others*	19	4.7
Average monthly income	<5000 ETB	140	34.4
	5001- 10000 ETB	239	58.9
	>10001 ETB	27	6.7

Note: *General practitioners, Residents, and IESO.

Table 2
Workplace and profession related characteristics of study participants in hospitals of northwest Ethiopia, 2020/2021 (n = 406).

Characteristics	Category	Frequency	Percentage (%)
Facility type	Primary hospital	214	52.7
	General hospital	32	7.9
	Tertiary hospital	160	39.4
Facility location	Urban	223	54.9
	Semi-urban	183	45.1
Relation with the nearby manager	Good	314	77.3
	Poor	92	22.7
Job satisfaction	Satisfied	324	79.8
	Dissatisfied	82	20.2
Received CRC training	Yes	119	29.3
	No	287	70.7
When did you take the CRC training (n = 119)	Within 2 year	71	59.6
	Before 2 years	48	40.4
Working time	Day	295	72.7
	Night	111	27.3
Birth assistant present	Yes	318	78.3
	No	88	21.7
Received BEmONC training	Yes	126	31
	No	280	69
Intention to stay in the profession	Yes	290	71.4
	No	116	28.6
Interest to work in the delivery room	Yes	340	83.7
	No	66	16.3
Workload in the ward	Yes	179	44.1
	No	227	55.9
Working part-time at private health facility	Yes	51	12.6
	No	355	87.4
Education while working	Yes	151	37.2
	No	255	62.8

3.4. Factors associated with healthcare provider's adherence to RMC guidelines

Both bivariable and multivariable logistic regression analyses have been undergone. According to the result of multivariable logistic regression analysis, job satisfaction (AOR = 1.82; 95% CI: 1.04, 3.18), professional experience of 3–5 year (AOR = 2.84; 95% CI: 1.74, 4.61) and ≥6 years (AOR = 2.21; 95% CI: 1.11, 4.38), and attending education while working their job (AOR = 0.33; 95% CI: 0.21, 0.51) were significantly associated with adherence to RMC protocol (Table 4).

4. Discussion

In resource-limited countries, most of the maternal mortality (MM) is subjected to pregnancy, childbirth, and other related complications. It is mostly due to a lack of access to maternal healthcare services and D&A during childbirth.[17,34] Ethiopia is one of the SSA countries with the highest maternal mortality, 412 per 100, 000 live births in 2016.[35] One key strategy to increase women's access to health services and to cut back this outrageously high MM is implementing RMC in all aspects of maternity care.[14] Hence, this study was planned to assess healthcare provider's adherence to RMC guidelines and associated factors during childbirth in public hospitals of northwest Ethiopia through direct observation during the pandemic of COVID-19.

In this study, the proportion of healthcare workers adhering to the RMC guideline was 63.8%. In other words, about 36.2% of healthcare providers are committed to D&A care. Our finding is in line with a study conducted in the Bale zone, southeast Ethiopia in which 62.5% of women got RMC.[36] This finding is, however, higher as compared to other studies conducted elsewhere in Ethiopia including Bahir Dar town_57%,[37] West Shewa zone_35.8%,[30] Wellega zone_21.9%,[38] eastern Ethiopia_38.4%,[28] and northwest Ethiopia_56.3%.[39] The result of this

Table 3
Respectful maternity care standards and categories observed from healthcare providers working at hospitals in northwest Ethiopia, 2020/2021 (n = 406).

Category	Experience obstetric violence	Yes	No
Physical abuse	The care provider use physical forces (slapping, pinching, beating/hitting) against the women while she was in a labor pain	91 (22.4%)	315 (77.6%)
	The birth attendant (s) threaten the women with beating to let her obey their order	108 (26.6%)	298 (73.4%)
	The healthcare provider (s) suture the women's perineum without using local anesthesia	91 (22.4)	315 (77.6%)
	The provider leg tied down the women on a delivery bed when she was in delivery	87 (21.4%)	319 (78.6%)
	The provider did not allow women to assume her position of choice during labor and delivery	154 (37.9%)	252 (62.1%)
	The provider did not allow her to ambulate during the course of the labor without reason	129 (31.8%)	277 (68.2%)
	The birth attendants push the women abdomen down to deliver the baby (used fundal pressure)	103 (25.4%)	303 (74.5%)
	The provider denied food or fluids in labor unless medically necessitated	140 (34.5%)	266 (65.5%)
Non-consented care	The provider did not introduce himself/herself to her and her companion	170 (41.9%)	236 (51.8%)
	The providers did not share the findings of her initial assessment with her and or her families?	140 (34.5%)	266 (65.5%)
	The providers discouraged the women when she ask questions	113 (27.8%)	293 (72.2%)
	The care providers did not explain to the women what is being done and what to expect throughout the labor and birth process	269 (66.3%)	137 (33.7%)
	The provider did not obtain her consent or permission prior to any procedure	262 (64.5%)	144 (35.5%)
	The care providers coerce the women to undergo cesarean section (C/S)	152 (37.4%)	254 (62.6%)
Non-confidential care	The provider did not use drapes or other visual barriers for protecting privacy	123 (30.3%)	283 (69.7%)
	The providers allowed entering other people to the room who could observe her while she is naked on the bed?	108 (26.6%)	298 (73.4%)
	Providers discussed the women's private health information in a way that others could hear	113 (27.8%)	293 (72.2%)
Non–dignity care	Provider did not speak to the women politely throughout the course of the labor	82 (20.2%)	324 (79.8%)
	Provider intimidate/humiliate the women at least one time	118 (29.1%)	288 (70.1%)
	Providers made negative comments during labor	89 (21.9%)	317 (78.1%)
	Providers shouted at or scolded her during labor pain	109 (26.8%)	297 (73.2%)
	Providers did not allow her companion to enter the delivery room	142 (35%)	264 (65%)
discrimination care	Healthcare providers discriminated by race, ethnicity, economic status or poor educational status, rural area	48 (11.8%)	358 (88.2%)
	Healthcare providers discriminated against because of being a teenager or advanced age	46 (11.3%)	360 (88.7%)

(*continued on next page*)

Table 3 (*continued*)

Category	Experience obstetric violence	Yes	No
	Healthcare providers discriminated because of being HIV-positive	88 (21.7%)	318 (78.3%)
Neglect care	The provider left her alone or unattended the labor	103 (25.4%)	303 (74.6%)
	The women give birth in the health institution by herself because the care providers were not around her	102 (25.1%)	304 (74.9%)
	The provider did not come quickly when she called him/her	131 (32.3%)	275 (67.7%)
Detention in Health facilities	The healthcare provider postponed discharging the women until hospital bills were paid	142 (35%)	264 (65%)
	The healthcare provider detained the women in a health facility against her will	151 (37.2%)	255 (62.8%)

Table 4
Factors associated with adherence to RMC guideline during COVID-19 pandemic among healthcare providers working at hospitals in northwest Ethiopia, 2020/2021 (n = 406).

Variables	Category	Compliance with RMC		COR (95% CI)	AOR (95% CI)
		Good	Poor		
Marital status	Married	164	78	1.53 (1.01, 2.30)	1.21(0.73, 1.98)
	Unmarried	95	69	1	1
Media exposure	Exposed	144	63	1.67 (1.11, 2.51)	1.03 (0.64, 1.66)
	Unexposed	115	84		
Working time	Day	177	118	0.53 (0.32, 0.86)	0.80 (0.45, 1.41)
	Night	82	29	1	1
Job satisfaction	Satisfied	211	103	2.48 (1.52, 4.06)	1.82 (1.04, 3.8)*
	Unsatisfied	38	44	1	1
Received training on BEmONC	Yes	93	33	1.93 (1.22, 3.07)	0.68 (0.25, 1.83)
	No	166	114	1	1
Experience in year	≤2	67	73	1	1
	3–5	155	55	3.07 (1.95, 4.82)	2.83 (1.74, 4.6)**
	≥6	37	19	2.12 (1.11, 4.04)	2.21 (1.10, 4.38)*
Education while working	Yes	73	80	0.32 (0.21, 0.50)	0.33 (0.21, 0.51)**
	No	186	67	1	1
Interest to work in the delivery room	Yes	231	109	2.97 (1.68, 1.93)	1.72 (0.93, 3.18)
	No	28	38	1	1

Notes: *P ≤ 0.05, **P ≤ 0.001; Abbreviations: AOR, adjusted odds ratio; COR, crude odds ratio; CI, confidence interval; 1, the reference category.

study is also higher as compared to another local study conducted in Wollo, Ethiopia during the pandemic of COVID-19 in which only 52.9% of women had received RMC during childbirth.[40] The discrepancy might be related to variations in the study population and study design. The current study collected the data from healthcare providers through direct observation using a checklist whereas all the aforementioned studies were collected the data from laboring women using exit interviews. The data collected from the women is self-reported and may dishonestly increase or decrease the proportion of RMC. Since labor is a very painful and stressful event, the women may not tell the factual information. It can be also justified as, even though there was no significant association between provider's adherence to RMC guidelines and CRC training in the present study, other studies revealed that CRC training significantly increases provider's adherence to RMC guidelines.[41] In this study, nearly a third of healthcare providers received CRC training.

On the other hand, the result of this study is lower compared with studies conducted in Kenya_80%,[42] Nepal_84.7%,[43] and Pakistan_76.8%.[44] It is also lower as compared to another study conducted in Ethiopia such as in northern Ethiopia_78%.[45] This could be explained by differences in the study population, study setting, study design, and time of data collection. All the aforesaid studies were conducted among laboring and postpartum women, and all the data were collected from them. However, the current study assessed the extent of RMC through direct observation of laboring women as well as the healthcare providers at the time of childbirth. And the study from northern Ethiopia includes all women who gave birth 1 year preceding the survey. In this case, the chance of recall bias will be high, leading to inaccurate result. Moreover, the present study was collected after the emergence of COVID-19 in which maternal and neonatal health services are expected to be compromised. Evidence supports that COVID-19 creates various troublesome to healthcare workers such as the risk of infection and death, social isolation, and financial impacts.[46]

This study indicated that job satisfaction was significantly associated with healthcare provider's adherence to RMC guidelines. Healthcare providers who are satisfied by their job were 1.82 times more likely to provide RMC as compared to those who are not satisfied by their job. A satisfied and highly motivated health professional is the pillar for better performance and patient satisfaction in the healthcare system. Besides, job satisfaction is crucial for optimal health service provision and to achieve health institutions' goals thereby ensuring qualified and equitable service for all clients.[47] This implies that an individual who has a negative attitude towards his or her profession will not be supposed to have good care for women as well as the working staff. Empirical evidence indicated that some of the reasons for job dissatisfaction are low salary, unsecured working environment, longer working time, lack of job description, and poor feedback from managers.[31,48] This calls upon governmental and other non-governmental organizations to give a great emphasis on the quality and quantity of health professionals employed at the maternity and newborn units in the long run to achieve the global goals. Available evidence support that to decrease maternal mortality and morbidity adequate number of professionals with proficient obstetric skill is a prerequisite.[49] From this evidence, we can deduce that providing evenhanded payments, a clear job description, secure insurances, and value-added feedback is essential to have satisfied healthcare providers. Concerning this, higher-level managers would better give prodigious attention in doing the aforementioned things to decrease provider's dissatisfaction and turnover intention thereby increasing adherence to RMC guidelines.

This study also revealed that the odds of good compliance with RMC guidelines among healthcare providers who had work experience of 3–5 years and ≥6 years were nearly three and two times higher as compared to those who had experience of ≤2 years respectively. It is expected that individuals having many years of experience will have good knowledge, attitude, and practice towards maternal health services including RMC either through training or learned from one own experience as a result of aging. Evidence also shows that providers who had many years of experience are satisfied with their job.[31] This might be ascribed to providers having lots of working experiences will have increased salary since income is an enabling factor for satisfaction. This in turn provokes providers to genuinely adhere to maternal healthcare guidelines though out the maternal continuum of care.

Lastly, in the current study, attending education while working is

observed to affect the extent of adherence to RMC guidelines. Accordingly, healthcare providers attending their education parallel to their professional work were 67% less likely to comply with RMC guidelines compared with the reference group. This could be justified as healthcare providers may be engaged in education either vertical to their profession or changing other fields of study so as to increase their status and upturn their income level. As a result, they would get busy and dissatisfied with their job thereby failing to completely adhere to the RMC standards. Most health workers prefer this way secondary to lack of educational opportunities that will help healthcare worker to scale up their educational status.

4.1. Limitations of the study

The cross-sectional nature of the study design may not possible to infer the cause and effect relationship between healthcare provider's adherence to RMC and the associated factors. However, the findings of this study will provide valuable information regarding healthcare provider's adherence to RMC standards during the pandemic of COVID-19.

5. Conclusion

In this study, nearly two-thirds of healthcare providers had good adherence to RMC guidelines during COVID-19. Job satisfaction and experience of healthcare providers were factors positively associated with healthcare provider's adherence to RMC guidelines whereas education while working was found to affect healthcare provider's adherence to RMC guidelines negatively. Most of the barriers to adherence to RMC protocols were modifiable and related to healthcare providers' dissatisfaction and lack of incentives such as the poor opportunity of upgrading education. Therefore, strengthening healthcare providers' job satisfaction and establishing an education upgrading opportunity would enhance adherence to RMC guidelines. In addition, the federal and regional health bureau would better pay more emphasis to the continuous professional development to ensure upgrade education opportunity and professional satisfaction thereby adhering to RMC standards.

Ethics approval and consent to participate

The study was conducted under the Ethiopian Health Research Ethics Guideline and the declaration of Helsinki. Ethical clearance was obtained from the Institutional Ethical Review Board (IRB) of the University of Gondar (**Reference number: V/P/RCS/05/413/2020**). A formal letter of administrative approval was gained from each selected hospital. Written informed consent was taken from each of the study participants after a clear explanation of the aim of the study.

Consent to publish

Not applicable.

Availability of data and materials

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

Funding

The research was not supported by any grant

Authors' contributions

AAK and MSM were involved in the conception and design of the study, participated in data collection, analyzed the data, drafted the manuscript, and approved the final version of the manuscript. BTT, KYW, AET, and GAE approved the proposal with some revisions, participated in data analysis, and revised subsequent drafts of the manuscript, and approved the last version of the manuscript. All authors have read and approved the manuscript.

Declaration of competing interest

The authors declare that they have no competing interests.

Acknowledgments

We are very grateful to the University of Gondar for approval of the ethical clearance. Our gratitude also goes to the School of Midwifery, health facilities, data collectors, and study participants.

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