

# Quality of postnatal care service provided in Gandhi Memorial Hospital

## Gandhi Memorial Hastanesi'nde gerçekleşen doğum sonrası bakım hizmetinin kalitesi

Elham MURAD<sup>1</sup> , Salih MOLLAHALİLOĞLU<sup>2</sup> 



doi.org/10.35232/estudamhds.1498386

### Abstract

Half of maternal mortality and two-thirds of neonatal mortality occur during the postnatal period. Effective, high-quality intervention during the postpartum period will significantly reduce the number of maternal and neonatal deaths. This study aims to assess the quality of the postnatal care service provided at Gandhi Memorial Hospital Addis Ababa. A cross-sectional study was conducted from May-June 2022 in Gandhi Memorial Hospital, mothers attending postnatal care were interviewed. Data Analysis was done using Statistical Package for the Social Sciences (SPSS) version 24. Results were presented using frequencies and percentages, as well as bivariate and multivariate analysis was conducted and those variables with a p-value < 0.05 were considered to be statistically significant the satisfaction level of mothers was used as the measure of the quality of care provided. The respondent's ages were in the range of 16-42 years, with a mean of 27.3 ± 4.59, and a median of 27, the majority between 20 years and 34 years old. Nearly all mothers who delivered by spontaneous vaginal delivery (SVD) stayed less than 24 hours in the hospital after their delivery. Being married, delivered by SVD, being informed on the procedure to be done, obtaining recommended nursing care, and, being counseled were obtained to be significant factors for maternal satisfaction with the overall quality of postnatal care provided in Gandhi Memorial Referral Hospital. Nearly half of the mothers before discharge were satisfied with the overall quality of postnatal care provided. Shortages of material resources were observed, and most of the nursing care needed to be provided for the mothers was neglected or missed.

**Keywords:** Quality, postnatal care, mother, neonate, Ethiopia

### Özet

Maternal mortalitenin yarısı ve yenidoğan mortalitesinin üçte ikisi doğum sonrası dönemde meydana gelir. Postpartum dönemde etkili, yüksek kaliteli müdahale, anne ve yenidoğan ölümlerinin sayısını önemli ölçüde azaltacaktır. Bu çalışma, Gandhi Memorial Hastanesi Addis Ababa'da sunulan doğum sonrası bakım hizmetinin kalitesini değerlendirmeyi amaçlamaktadır. Gandhi Memorial Hastanesi'nde Mayıs-Haziran 2022'den itibaren kesitsel bir çalışma yapılmış olup, doğum sonrası bakıma katılan annelerle görüşülmüştür. Veri analizi, Sosyal Bilimler için İstatistik Paketi (SPSS) 24 Versiyonu kullanılarak yapıldı. Sonuçlar frekanslar ve yüzdeler kullanılarak sunulmuş ayrıca iki değişkenli ve çok değişkenli analiz yapılmıştır. p değeri < 0,05 istatistiksel olarak anlamlı kabul edilmiş olup verilen bakımın kalitesinin ölçüsü olarak annelerin memnuniyet seviyesi kullanılmıştır. Vaka yaşları, 16-42 yıl aralığında olup ortalaması 27.3 ± 4.59 ve medyanı 27, çoğunluk 20 yaş ve 34 yaş arası oluşmaktadır. Spontan vajinal doğum (SVD) ile doğum yapan neredeyse tüm anneler, doğumdan sonra hastanede 24 saatten az kaldı. Evli olmak, SVD ile doğum yapmak, yapılacak prosedür hakkında bilgilendirilmek ve önerilen hemşirelik bakımı görmek, Gandhi Memorial Tavsiye Hastanesi'nde sağlanan doğum sonrası bakımın genel kalitesi ile anne memnuniyeti için önemli faktörler olarak saptandı. Annelerin neredeyse yarısı taburcu olmadan önce sağlanan doğum sonrası bakımın genel kalitesinden memnun olmuştur. Maddi kaynak sıkıntısı gözlenmiş olup annelere sağlanması gereken hemşirelik bakımının çoğu ihmal edilmiş veya göz ardı edilmiştir.

**Anahtar Kelimeler:** Kalite, doğum sonrası bakım, anne, yenidoğan, Etiyopya

*ESTUDAM Public Health Journal.*  
2025;10(1):50-61.

1- MSC student of "Health Policy and Global Health" Master Programme at Ankara Yıldırım Beyazıt University Public Health Institute, Türkiye.  
2-Ankara Yıldırım Beyazıt University, Faculty of Medicine, Department of Public Health Ankara, Türkiye.

**Sorumlu Yazar / Corresponding Author:**  
Elham MURAD  
e-posta / e-mail:  
elhammurad90@gmail.com

**Geliş Tarihi / Received:**  
09.06.2024  
**Kabul Tarihi / Accepted:**  
04.12.2024

## Introduction

According to the World Health Organization (WHO), a postnatal period lasts from an hour, after the delivery of the placenta until 6 weeks of delivery. Postnatal care (PNC) comprises services given to mothers and neonates right after delivery and up to 42 days of postpartum, to ensure optimum health for the mother and her infant (1).

The highest number of maternal and neonatal deaths come about in the first 28 days after delivery, with 50% of maternal and 66% of neonatal deaths occurring during the first 24 hours and the first week after birth respectively (2). In sub-Saharan Africa, which ranks first in terms of maternal and child mortality, annually, 4.7 million mothers, neonates, and children pass away (3). Of these, more than 65% of deaths occur during the postnatal period (4).

A newborn baby's first 48 hours are a delicate time in their development and a time when many neonatal deaths occur, particularly in Ethiopia where postpartum care services are underutilized, newborn problems are seldom identified, and the use of adequate care and treatment is very low. Only 34% of Ethiopian women obtained a postnatal checkup within the first two days (5).

Postnatal care has been made available in Ethiopia along with different maternal and reproductive health programs, but its uptake in comparison to other maternity care is still very low. For instance, the most recent Ethiopian Demographic Survey (EDHS) shows that (antenatal care) ANC is used more than twice as often as PNC. ANC has a 74% coverage rate, compared to 34% for PNC (5). Even though fewer women and newborns receive appropriate postnatal care, the fundamental aspects of the care are severely underutilized. For instance, only 26.4% of cords were examined, 25.8% of temperatures were taken, 21.1% were

counseled on danger signs, and 37.6% and 34.4% of breastfeeding observations were made, respectively. This comes up with the result of less coverage with poor quality of care. Since neonatal death has a direct relation with postnatal service quality provided, in 2016 neonatal mortality was 29 per 1000 livebirths while in 2019 increased to 33 per 1000 livebirths which is 1.3 fold, despite the increment of postnatal coverage by double, which highly points toward poor quality service (6).

In Mother-Friendly recommendations every mothers have the fundamental rights to receive quality health care. Healthcare practitioners are obliged to deliver up-to-date, evidence-based care, while health management teams need to undergo regular assessment to check if the care adheres to the updated guidelines to ensure qualified care (7).

Qualified postnatal care can be provided only in situations where evidence-based nursing care along with all basic required infrastructures are fulfilled (8), which can be measured by patient outcome status and satisfaction. Different studies have shown that the majority of maternal and neonatal mortality could be reduced if women and neonates receive appropriate quality-based care (1).

Neonatal death has increased, and maternal mortality doesn't show any significant change even though the coverage of postnatal care services doubled, assessing the quality of postnatal care provided will be undoubtedly helpful in reducing maternal and neonatal death. This study will explore the quality of postnatal care provided in Gandhi Memorial Hospital, as it is one of the maternal and child referral hospitals in Addis Ababa, intending to help the hospital management teams also health care providers to identify major gaps in the care provided and also assist policymakers to develop strategies

### ORCID:

Elham MURAD:

0000-0002-7213-8899,

Salih MOLLAHALILOĞLU:

0000-0001-7384-4106

### Nasil Atf Yaparım /

#### How to Cite:

Murad E, Mollahaliloğlu

S. Quality of postnatal

care service provided in

Gandhi Memorial Hospital.

ESTUDAM Public Health

Journal.2025;10(1):50-61.

for potential planning and improvement of postnatal care delivery system to fulfill the basic hospital infrastructures and increase patient-centered care.

## Methodology

### Study Design

A quantitative cross-sectional survey approach was used to understand the standard of postnatal care offered at Gandhi Memorial Hospital. Postnatal mothers attending the hospital during the study period were targeted.

### Study area and time

The study was conducted from May to June 2022 in Addis Ababa, the capital city of Ethiopia. In this study Gandhi Memorial Hospital was targeted which is one of the government referral and teaching hospitals administered by Addis Ababa Health Bureau, it is also one of the maternal and child referral hospitals in Addis Ababa located in Kirkose sub-city woreda (7).

### Sample size determination and sampling technique

Single population formula was used to determine the sample size of the study. To achieve adequate precision, the sampling error of the study was taken as 5 % and 95 % confidence intervals, using this formula  $N = [z_{(\alpha/2)}^2 p (1-p)]/d^2$  Whereby n = sample size,  $z_{(\alpha/2)} = 1.96$ , p = proportion of women attending postnatal care in Addis Ababa 74% of woman access PNC based on Mini EDHS 2019, d = degree of accuracy (0.05) taken at 95% confidence limit. Therefore, a minimum of 296 participants was required to conduct the study.

The study participants were primarily classified into those who delivered by caesarian section(CS) and SVD. In which the target population was 40% from CS and 60% from SVD based on the delivery status of the hospital in the previous three months before the data collection period, then each group was selected by a simple random sampling method by writing the bed numbers available in the room in the piece of paper from 1 up to 26 for the first room and from 1 up to 12 in the second room, a piece of papers were folded equally and mixed well, then 13 out of 26 folded papers and 6 out of 12 folded papers were randomly selected by data collectors and those mothers with selected bed number and fulfilling the inclusion criteria was included in

the study until the targeted population number is reached.

### Data gathering tool

For data collection, a structured questionnaire was used adopted from the study conducted in Tanzania (9). The questionnaire was prepared in English and then translated to the local language Amharic by professionals again was translated back into English to check the quality and clarity of the questionnaire. Before the data collection pilot study was conducted in Zewditu Memorial Hospital which is one of the government hospitals in Addis Ababa. The reliability of the questionnaire was assessed using Cronbach's alpha ( $\alpha=0.812$ ).

### Data analysis

Data Analysis was done using Statistical Package for the Social Sciences (SPSS) version 24. Different tests were used such as frequencies and percentages for categorical variables as well as cleaning data, bivariate analysis was done, whereas variables with p-values less than or equal to 0.20 as recommended by Hosmer&Lemshow (10) were considered to be candidates for multivariate analysis. Similarly, multivariate analysis was also conducted and those variables with a p-value <0.05 were considered to be statistically significant.

Satisfaction of mothers as a (dependent variable), used as the measure of the quality of postnatal care provided, the overall satisfaction was calculated from five satisfaction questions. Those who answered "satisfied" were attracted to 1 point and those who answered "not satisfied" were attracted to 0 points the demarcation threshold formula (total highest score-total lowest score)/2 + Total lowest score) (11)was used to calculate the overall satisfaction.

### Ethical consideration

The ethical approval was obtained from the ethic board of Ankara Yildirim Beyazit University with approval number 2022-705, Addis Ababa Health Bureau, and Gandhi Memorial Hospital. Additionally, oral consent was obtained from participants.

## Results

### Descriptive Statistics

A 100% of response rate was obtained by interviewing 296 mothers who were attending postnatal care in Gandhi Memorial Hospital before

they were discharged.

The respondents' ages were in the range of (16-42 years), with a mean of  $27.3 \pm 4.59$ , and a median of 27, with the majority (86%) between 20 years and 34 years old. The respondents with the extreme ages of less than 20 years and above 35 years were (5.7%) and (9.5%) respectively. Related to their marital status almost all of the respondents were married (95.5%). Concerning their occupational status, slightly above half of the respondents were housewives 51%. In terms of their average monthly

income more than half of the respondents, 61.8% have a monthly income of less than 100\$ which is <5000 ETB (Ethiopian birr) translated to less than 1\$ per day which is considered extreme poverty, and only 2.4% of respondents receives greater than 200\$ or  $\geq 10,000$  ETB. Concerning the educational status of the postnatal mothers, almost all of them were literate except 4.1%, 22.3% were at primary school level, and 38.5% were at the level of diploma or above.

**Table 1:** Socio-demographic characteristics of mothers

Variable	Category	Frequency	Percentage (%)
Age	<20	17	5.7
	20-34	251	84.8
	35-49	28	9.5
Marital status	Married	284	95.9
	Divorced	12	4.1
Occupation	Housewife	151	51.0
	Government- employment	45	15.2
	Private-employed	48	16.2
	Self-employed	52	17.6
The household average income per month	$\leq 100$ \$	183	61.8
	100-200\$	106	35.8
	$\geq 200$ \$	7	2.4
Educational level	No schooling	12	4.1
	Primary school	66	22.3
	Secondary school	104	35.1
	Diploma and above	114	38.5

Note: 1USD\$=50ETB (Ethiopian Birr) May 2022

Almost all of the mothers 91.6% who were delivered by SVD stayed less than 24 hours in the health facility before being discharged and only 8.4% of mothers fulfilled the WHO recommendation of staying in the health facility after a safe delivery which is the minimum of 24 hours. And for those who were delivered by CS 100% of them have stayed in the hospital more than one day before being discharged.

Regarding the number of children, 42.9% of mothers were primiparous. Multiparous women were interviewed regarding their previous place of delivery, except 4.5% of mothers the rest have delivered in the health facility. 85.2% of multiparous mothers had previous PNC visits; among the mothers who had previous visits only 1 mother or 0.7% had 4 visits as recommended by WHO.

**Table 2:** Mothers experience regarding PNC

Variable	Category	Frequency	Percentage(%)	
How long did you stay at the facility before being discharged to go home?	SVD	<24hr	163	91.6
		>=24hr	15	8.4
	CS>=24hr	118	100.0	
How many children you have including this baby?	1	127	42.9	
	2-3	143	48.3	
	4-5	26	8.8	
Where is your previous delivery place?	Health facility	170	95.5	
	Elsewhere	8	4.5	
Do you have a PNC visit in the previous last child?	Yes	144	85.2	
	No	25	14.8	
If yes how many visits you had?	1	14	9.7	
	2	98	68.1	
	3	31	21.5	
	4	1	0.7	

The quality of care provided was measured by whether the mother was satisfied or not, mothers were asked some questions in Table 3, and mothers were highly satisfied (83.8%) with the family planning counseling provided to them and least satisfied (28%) with the physical examination

done on them, less than half (42.2%) of mothers were happy with the manners and attitudes of the healthcare workers, about two-thirds of mothers were satisfied by the cleanness of the facility, and almost half (48.6%) of mothers were satisfied with the information provided on exclusive breastfeeding.

**Table 3:** Satisfaction of mothers with the service rendered

Variable	Category	Frequency	Percentage(%)
Attitude & behavior of care providers	Not satisfied	171	57.8
	Satisfied	125	42.2
Information about family planning and postnatal follow-up visits	Not Satisfied	48	16.2
	Satisfied	248	83.8
Physical examination done	Not Satisfied	213	72
	Satisfied	83	28
Cleanliness of the facilities	Not satisfied	101	34.1
	Satisfied	195	65.9
Information on exclusive breast-feeding	Not Satisfied	152	51.4
	Satisfied	144	48.6



As satisfaction is the measure of the quality of postnatal care provided, the overall satisfaction was calculated from five satisfaction questions mothers asked. Those who answered three questions and above were grouped under satisfied and less than three questions under not satisfied. According to the data, moderate percentage 53% of moms were happy with the care they received, whereas 47% of mothers were not.

Mother's experience regarding PNC as an independent variable and satisfaction of mothers as a dependent variable was considered to perform bivariate analysis to determine the relationship at a 20% level of significance. Mode of delivery (Crude Odds Ratio (COR);95%CI;p:2.503;1.553-4.033;<0.001),

explaining the procedure done on the mother and neonate (COR;95%CI;p:4.261;1.984-9.149;<0.001) and maintenance of privacy (COR;95%CI;p :3.649;1.706-7.803;0.001) was found to be statistically significant whereas having previous PNC visit in the previous child didn't.

Based on the result of a simple binary logistic analysis regarding socio-demographic characteristics of mothers, marital status and occupation of mothers were found to be significantly associated with postnatal care satisfaction of mothers at a 20% level of significance.

As a result of multivariate analysis, married mothers were 4 times more likely to be satisfied than divorced mothers (Adjusted Odds Ratio (AOR);95%CI;p:4.196;0.852-2.271;0.036).

**Table 4:** Socio-demographic characteristics about satisfaction with PNC services provided, multiple binary logistic regression

Variable	Category	AOR*	95%CI	p-value
Marital status	Married	4.196	0.852-2.271	<b>0.036</b>
	Divorced(ref)	-	-	-
Occupation	Government-employment	0.504	0.046-5.508	0.575
	Housewife	0.117	0.010-1.411	0.091
	Private-employed	0.040	0.001-1.095	0.057
	Self-employed(Ref)	-	-	-

\*Adjusted Odds Ratio

Concerning the significant relationship between the mother's experience regarding PNC and satisfaction. The mode of delivery and explanation of the procedure performed were statistically significant, at p-values of 0.008, and 0.028 respectively.

Mothers who were delivered by SVD were 1.129 more likely to be satisfied with the care

provided than mothers who were delivered by CS (AOR;95%CI;p:1.129;0.256-2.969;0.008). Mothers who were told about the significance of the procedure performed on them and their neonate were 2.768 more likely to be satisfied than the mothers who were not explained (AOR;95%CI;p:2.768;0.126-2.943;0.004).

**Table 5:** Mothers' experience regarding PNC with their satisfaction, multiple binary logistic regressions

Variable	Category	AOR*	95%CI	p-value
Mode of delivery	SVD	1.129	0.256-2.969	<b>0.008</b>
	CS(ref)	-	-	-
Were you explained the various examination procedures done on you and your baby and their significance	Agree	2.768	0.126-2.943	<b>0.004</b>
	Disagree(ref)	-	-	-

Was privacy maintained during the various procedures performed on you and the baby?	Agree	1.825	1.472-1.827	0.228
	Disagree(ref)	-	-	-

\*Adjusted Odds Ratio

Regarding the nursing care provided, mothers whose temperatures were measured were 2.187 times more likely to be satisfied than the mothers whose temperatures were not measured (AOR;95%CI;p:2.187;3.457-4.942;<0.001). Respondents whose respiratory rate was monitored were 1.472 times more likely to be satisfied than respondents whose respiratory rate was not monitored (AOR=1.472CI=0.511-2.041p=0.009).

Mothers who were checked for excessive bleeding were 2.120 times more likely to be satisfied than mothers who were not checked for excessive bleeding (AOR;95%CI;p:2.120;0.136-4.060;<0.001). Mothers who were assisted in the positioning of their baby during and after feeding were 2.8 times more likely to be satisfied with the care provided than those who were not assisted (AOR;95%CI;p:2.832;4.881-8.670;0.001)

**Table 6:** Nursing care provided for the mother in relation with satisfaction, multiple binary logistic regressions

Variable	Category	AOR*	95%CI	p-value
Was your temperature measured regularly?	Yes	2.187	3.457-4.942	<0.001
	No(ref)	-	-	-
Was your respiratory rate monitored regularly?	Yes	1.472	0.511-2.041	0.009
	No(ref)	-	-	-
Checked for excessive bleeding within 1 hour of delivery	Yes	2.120	0.136-4.060	<0.001
	No(ref)	-	-	-
Were your breast examined?	Yes	0.535	0.106-2.704	0.449
	No(ref)	-	-	-
Were you assisted to position your baby during and after feeding	Yes	2.832	4.881-8.670	0.001
	No(ref)	-	-	-

\*Adjusted Odds Ratio

### Resources Required for the Provision of Qualified PNC

The provision of competent postnatal care is greatly influenced by the postnatal ward's availability of resources. Due to this availability of basic postnatal equipment, drugs and logistics were checked.

Regarding basic postnatal equipment baby weighting scale, examination bed, blood pressure machine, and postnatal care room were available, but the adult weighing scale and surgical gloves were not available.

Regarding drugs, only oxytocin and family planning

commodities were available the rest medications like Ferrous sulfate, cotrimoxazole tablets, paracetamol tablets, IV fluids, and antihypertensive drugs were not available.

Among the logistics PNC guidelines, the PNC register and hospital telephone were available, since the hospital is one of the regional referral hospitals in Addis Ababa, unfortunately, the hospital ambulance is not available, list on maternal and newborn care also case audit for maternal death is not available also supportive supervision list it is not available.

**Table 7:** Checklist of resources required for postnatal clients

Items	Available	Not available
<b>EQUIPMENT</b>		
Adult Weighing Scale		✓
Baby Weighing scale	✓	
Examination bed	✓	
Blood Pressure Machine	✓	
PNC room	✓	
Thermometer	✓	
Surgical glove		✓
<b>DRUGS</b>		
Oxytocin injection	✓	
Ferrous sulfate		✓
Cotrimoxazole tab		✓
Tab paracetamol		✓
I.V fluids		✓
Anti-hypertensive drugs		✓
Family planning commodities	✓	
<b>LOGISTICS</b>		
PNC guideline	✓	
PNC register	✓	
Telephone/mobile phone	✓	
Ambulance		✓

## Discussion

Satisfaction is a subjective feeling where individuals announce whether their needs are fulfilled or not. And it is a sign or determinant of the perceived level of care (12). In this study, 53% of moms expressed satisfaction with the postpartum care they received which is incongruent with the study conducted in Kenyatta Hospital where 49% of mothers were satisfied (13), in contrast to other studies conducted in Nigeria and Nepal showed that majority of the mothers were satisfied with the postnatal care provided (13, 14).

Married women will experience a better postnatal period due to social, psychological, and economic

support than single or divorced women (15). In this study majority of mothers were married which is in correspondence with the study conducted in Kenya and Greece(12; 16), the study reveals married women are 4 times more likely to be satisfied with the postnatal care provided than unmarried women. According to this study, 60% of mothers were delivered by SVD, and the mode of delivery was statistically significant with the perceived satisfaction of mothers, the finding was dissimilar with the study conducted in Zambia and Kenyatta National Hospital which reported no significant relationship between mode of delivery and satisfaction of mother (12, 17), the study is in correspondence with Kenyan



study and also aligns with other studies conducted on the postnatal comfort (3, 6), where mothers who delivered via SVD were 1.12 times more likely to be satisfied with the care provided. This may be due to mothers who deliver by CS experiencing more pain and having higher expectations of care and attention from healthcare providers.

Early discharge of a mother and her neonate from the hospital is one of the indicators of substandard quality of care since most of the postnatal components will be missed and will increase the readmission rate. This study reveals all of the mothers who were delivered by SVD stayed less than 24 hours in the hospital before they were discharged, the investigation carried out in the district of Mebya supports this conclusion. Council in which the majority of respondents were discharged before 24 hours of stay after delivery (1), also study done by Cargill, et al 2008 reported even postnatal hospital stay in developed countries has decreased overtime (9). This is mainly due to restricted hospital infrastructures like postnatal room beds and the number of health care providers. Every health care provider has an ethical and professional obligation to inform mothers about the procedure they are going to provide, it is stated as informed consent if the provider explains in a manner the mothers can understand and agree on the procedure to be provided (16). Moreover, WHO affirms patients have a full right to know about any procedure to be provided to them (7, 17) in this study only nearly a quarter (26.7%) of mothers were informed of the procedure received which is in line with the study conducted in Kenya in which mothers were minimally satisfied with informed consent (18), and this study reveals mothers who are with informed consent are 2.76 times more likely to be satisfied with the care provided than uninformed mothers which is in line with study conducted in Malawi on the quality of care on care for mothers and new babies, where maternal perceived quality was significantly related with explanation made by health personnel to the patients (19). This could be due to mothers when they are informed they feel they are recognized and valued by health care providers which boosts their satisfaction from the procedure performed.

Providing standard care for the mother will help in averting most maternal mortality. In the study, about 82.8% of mothers' blood pressure was measured which is in correspondence with the study conducted in Kenya where almost all of the postnatal mother's blood pressure was measured (18), and also the study conducted in Swaziland on the quality of immediate postnatal care, nearly 80% of respondents blood pressure were measured (20) Another study conducted in Kenya confirms that healthcare professionals were keen in the measuring of maternal blood pressure (21), this is due to health care providers being aware on the risk of pre-eclampsia and eclampsia which is common in the first 2 days after birth (22). Only nearly a quarter of the participants' temperature was measured, which is in correspondence with research on the effectiveness of postpartum care among teenage mothers where 19% of the respondent's temperature was measured, and it is in reverse with the Kenyan study were more than three fourth of the respondent's temperature was measured (18). This could be due to the health care provider's workload or insufficient information regarding the importance of temperature measuring. Though, it is the main indicator for the presence of infection and puerperal sepsis which accounts for 10% of maternal mortality (23). Tachycardia and bradycardia are indicators of hemorrhage and commonly mothers are exposed to PPH (postpartum hemorrhage) during this period luckily majority of mothers 82.8% pulse were measured which is contrary to the Swaziland study (20), the study reveals that mothers whose temperature and pulse measured were more likely to be satisfied with the care provided, this could be, mothers feel less anxiety as their health is under conscious consideration of health care providers. Excessive bleeding was checked in 90% of mothers, which is contrary to the Kenyan study whereas only less than a quarter of mother's lochia flow was examined (18), this is due to PPH being the prominent cause of maternal mortality and health care providers had enough knowledge regarding it.

Examining the breasts of the mother will highly avert the stress of the mother, chiefly for primiparous mothers (24), as breastfeeding is their

first experience, in this study more than half of the mother's breasts were examined which is contrary to Kenyan study and findings of Ng'ang'a (2013) were only 40% of mother's breast were examined (20, 23). Healthcare providers are recommended to assist mothers to initiate breast feeding to the new born in the first 30 minutes of postpartum period (7) also they need to empower mothers regarding the importance of breastfeeding and how to manage minor breast problems before they are discharged (17). However, in this study only less than a quarter of mothers were counseled regarding breast care, and the study conducted in Kenya most of the mothers were not satisfied in the information shared on breast care, this study reveals mothers those who are counseled on breast care and minor breast management are 3.4 times more likely to be satisfied with the care provided than those who are not counseled. More than half of mothers were assisted in the positioning of babies during and after feeding which is in contrast with the study conducted in Lilongwe District of Malawi where only nearly 35% of mothers were assisted (25). The study reveals mothers who were assisted were 2.8 times more likely to be satisfied with the postnatal care provided than those who were not assisted. This could be due to half of the participants having their first baby, positioning and the way how to feed is a new experience and challenging, and being assisted will highly satisfy them.

Regarding the cleanliness of the hospital, more than half (65.9%) of the study participants were satisfied which is contrary to the study conducted in Kenyatta National Hospital in which the majority of mothers were not satisfied with the cleanliness of the hospital, also a study conducted in 13 districts of Nepal most of the mothers were not satisfied with the cleanness of the ward (12, 14).

Concerning the drugs required in the postnatal room oxytocin and family planning commodities were available where iron, paracetamol, anti-hypertensive drugs were not available which is the same with the study conducted in semi-rural and urban areas of Malawi where vitamin A and iron was not available (25). However, the study conducted in Tanzania reported all recommended drugs were available (9) almost all of postnatal equipment

were available which corresponding with the study conducted in Mybeya district (9) and in contrast with study conducted in northern Ethiopia and Malawi where there is no specific Postnatal room in the facilities (28, 15).

In this study supervision was not done frequently or with recommended regular interval which is in line with the study conducted in Malawi (27). Supervision is the key for the motivation of health care providers to stick to guidelines also in the improvement of their skills (28). The study conducted in Australia reveals supervision of midwives helped in the improvement of quality care provided in relation of adhering to the procedures also has role in active support among staffs and motivation (29).

## Conclusion

Overall this study found that being married, delivered by SVD, being informed on the procedure to be done, obtaining recommended nursing care, and, being counseled were significant factors for maternal satisfaction with the overall quality of postnatal care provided in Gandhi memorial referral hospital. Nearly half of the mothers were satisfied with the overall quality of postnatal care provided. Shortages of material infrastructures were observed almost all types of equipment for the provision of postnatal care were available, however, all mothers who delivered by SVD stayed in the postnatal ward for less than 24 hours due to the restriction in postnatal rooms and beds, which is an indicator of poor quality of postnatal care provided. Moreover, most medications and logistics for the provision of postnatal care were missed.

## Recommendations

- Health care providers need to go through current guidelines on maternal and newborn care for the best care provision

- Digitalization of the supervision and the hospital system, then based on the noticed gaps, different platforms need to be arranged in order to update the skill and knowledge of healthcare providers and correspondingly for the best health care providers' incentives provision.

- The hospital stay of postnatal mothers was less than the recommendation of WHO due to

restrictions on postnatal rooms and beds. This leads to the missing of most of the postnatal packages that need to be provided. Accordingly, additional rooms need to be constructed for quality provision of postnatal care.

-Addis Ababa Ministry of Health should equip the hospital based on WHO recommendations for postnatal care.

-Emergency link platforms need to be formed between early discharged mothers and the hospital since the first few days are very critical for the existence of the mother and baby.

-Qualitative research needs to be conducted for further understanding of factors that affects maternal satisfaction with the postnatal care provided.

### Limitations of the study

The study is conducted in the maternal and child referral hospital of Addis Ababa, hence it cannot be representative of all maternal and child health referral hospitals in Ethiopia also other facilities. Additionally, the study only considers mothers with live births and mothers whose neonates are not admitted to the neonatal intensive care unit.

### Acknowledgment

I would like to acknowledge all participants at the same time the Addis Ababa Health Bureau staff and the Gandhi Hospital management teams for allowing us to conduct this study

### Conflict interest

No conflict of interest.

### References

1. WHO. WHO technical consultation on postpartum and postnatal care. World Heal Organ [Internet]. 2010;1–56. Available from: [https://apps.who.int/iris/bitstream/handle/10665/70432/WHO\\_MPS\\_10.03\\_eng.pdf?sequence=1&isAllowed=y](https://apps.who.int/iris/bitstream/handle/10665/70432/WHO_MPS_10.03_eng.pdf?sequence=1&isAllowed=y)
2. WHO. Postnatal Care for Mothers and Newborns Highlights from the World Health Organization 2013 Guidelines. Postnatal Care Guidel [Internet]. 2015;(April):1–8. Available from: [http://www.who.int/maternal\\_child\\_adolescent%5CnWHO](http://www.who.int/maternal_child_adolescent%5CnWHO)
3. Chhetri S, Shah R, Rajbanshi L. Factors Associated with Utilization of Complete Postnatal Care Service in Baglung Municipality, Nepal. *Int J Reprod Med.* 2020;1– 8.
4. Chungu C, Makasa M, Chola M, Jacobs CN. Place of Delivery Associated With Postnatal Care Utilization Among Childbearing Women in Zambia. *Front Public Heal.* 2018;6:6.
5. Demographic M, Survey H. Ethiopia. 2019.
6. Central Statistical Agency Addis Ababa EI. Demographic health survey Ethiopia. 2016.
7. The Mother-Friendly Childbirth Initiative. The First Consensus Initiative of the Coalition for Improving Maternity Services (CIMS). 1996;12(4):41–4.
8. Bohren MA, Hunter EC, Munthe-Kaas HM, Souza JP, Vogel JP, Gülmezoglu AM. Facilitators and barriers to facility-based delivery in low- and middle-income countries: A qualitative evidence synthesis. *Reprod Health.* 2014;11(1):1–17.
9. David LT. Assessment of the quality of Postnatal care services : A case study of Mbeya District Council. *Matern Heal [Internet].* 2015;1(1):65. Available from: [http://scholar.mzumbe.ac.tz/bitstream/handle/11192/1027/Msc-HM%26ETheopiter David LOTTO 2015.pdf?sequence=1](http://scholar.mzumbe.ac.tz/bitstream/handle/11192/1027/Msc-HM%26ETheopiter%20David%20LOTTO%202015.pdf?sequence=1)
10. Hosmer D, Lemeshow S. Applied Logistic Regression. Hoboken. Vol. 354, Applied Logistic Regression. 2000.
11. Akhtari-Zavare M, Abdullah MY, Abdullah MY, Syed Hassan ST, Syed Hassan ST, Binti Said S, et al. Patient satisfaction: evaluating nursing care for patients hospitalized with cancer in Tehran teaching hospitals, Iran. *Glob J Health Sci.* 2010;2(1):117-26.
12. Ammo MA, Abu-Shaheen AK, Kobrosly S, Al-Tannir MA. Determinants of Patient Satisfaction at Tertiary Care Centers in Lebanon. *Open J Nurs.* 2014;04(13):939–46.
13. Kamau M. Assessment of Mothers' Satisfaction With Immediate Post Natal Care at Kenyatta National Hospital Maternity Unit. 2019;(September). Available from: <http://erepository.uonbi.ac.ke/handle/11295/108432>
14. Rose EI, Janet AA. Evaluation of the quality of postnatal care and mothers satisfaction at the university college hospital Ibadan, Nigeria. *Int J Nurs Midwifery.* 2018;10(9):99–108.
15. Zulu M. Mothers' Satisfaction with immediate postnatal care provided at Ndola Central Hospital, Zambia. *Int J Nurs Stud.* 2017;3.

16. Fakhr-Movahedi A, Rahnavard Z, Salsali M, Negarandeh R. Exploring Nurse's Communicative Role in Nurse-Patient Relations: A Qualitative Study. *J caring Sci.* 2016;5(4):267–76.
17. Pregnancy, childbirth, postpartum and newborn care WHO 3rd edition 2015.
18. Nyagah A. Quality of Postnatal Care Among Mothers Within 24–48 Hours of Delivery in Postnatal Wards at Machakos County Referral Hospital, Kenya. 2020.
19. Kambala C, Lohmann J, Mazalale J, Brenner S, De Allegri M, Muula AS, et al. How do Malawian women rate the quality of maternal and newborn care? Experiences and perceptions of women in the central and southern regions. *BMC Pregnancy Childbirth.* 2015;15(1):1–19.
20. R Dlamini B, S Ziyane I, P Gule W. The Quality of Immediate Postnatal Care in Health Facilities in Swaziland: Experience of Postnatal Mothers. *J AIDS Clin Res.* 2017;8(3):1-6.
21. Nganga R. Quality of Postpartum Care among Teenage Mothers at Kenyatta National Hospital. *Int J Res Heal Sci Nurs.* 2012;12(6):234–49.
22. Hauspurg A, Jeyabalan A. Postpartum preeclampsia or eclampsia: defining its place and management among the hypertensive disorders of pregnancy. *Am J Obstet Gynecol.* 2022;226(2S):1211–21.
23. Amdemichael R, Tafa MS, Fekadu H. Maternal Satisfaction with the Delivery Services in Assela Hospital, Arsi Zone, Oromia Region. 2014;4(12):1-8.
24. McLellan J, Laidlaw A. Perceptions of postnatal care: factors associated with primiparous mothers: DkIT MultiSearch. *BMC Pregnancy Childbirth* [Internet]. 2013;13(227):22–9. Available from: <http://eds.b.ebscohost.com/eds/pdfviewer/pdfviewer?vid=5&sid=c1b8a156-a005-4e78-83d3-18aee12431bb%40sessionmgr102&thePreGuestLoginUrl=/eds/detail/detail>
25. Pindani M, Phiri C, Chikazinga W, Chilinda I, Botha J, Chorwe-Sungani G. Assessing the quality of postnatal care offered to mothers and babies by Midwife in Lilongwe District. *South African Fam Pract.* 2020;62(1):1–6.
26. Bayray A. Assessment of Quality of Postnatal Care Services Offered to Mothers in Hospitals, of Tigray Ethiopia 2016 Determinants of fertility in Ethiopia: a national survey View project. 2017;(July). Available from: [www.stmjournals.com](http://www.stmjournals.com)
27. Chimtembo LK, Maluwa A, Chimwaza A, Chirwa E, Pindani M. Assessment of quality of postnatal care services offered to mothers in Dedza district, Malawi. *Open J Nurs.* 2013;3(4):343–50.
28. Kongnyuy EJ, Hofman J, Mlava G, Mhango C, Broek N. Availability, utilisation and quality of basic and comprehensive emergency obstetric care services in Malawi. *Matern Child Health J.* 2009;13(5):687–94.
29. Brunero S. Ajan\_25-3\_Brunero-1. *Aust J Adv Nurs.* 2008;25(3):86–94.