

# The Factors Associated with Utilization of Postnatal Care Service in Sheka Zone, South-West Ethiopian Peoples Region

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**Abstract:** Within the first month of life, most deaths of mothers and infants occur. Within the first 24 hours, about half of all maternal deaths occur. In the Sheka zone, southwest of the Ethiopian Peoples area, the study sought to investigate the parameters associated with postnatal care service consumption. From January 2021 to March 2022, a cross-sectional study based in the community was carried out. 1779 individuals in all were enrolled in the study. Variables having a bivariate logistic regression p-value of less than 0.25 were included in the multivariate logistic regression model as statistically significant variables. A P-value of less than 0.05 was used to indicate statistical significance. In the first six weeks after giving birth, this survey found that 54.9% of women used at least one postnatal care service. The vast majority of women who had four or more antenatal visits in the first six weeks accessed postpartum care services (68.48 %). Women who had four or more prenatal visits were 1.834 times more likely to receive postpartum care in the first six weeks than those who had fewer visits (AOR=1.834, 95% CI=1.413-2.380). Compared to women who give birth at home, those who give birth in medical facilities are more likely to receive postpartum care (AOR=1.473, 95% CI=1.163-1.867). Compared to other age groups, women between the ages of 20 and 24 were more likely to receive postpartum care (AOR=3.570, 95% CI=2.419-5.268). Women who attended Elementary school (AOR=2.356, 95% CI=1.717-3.233) and Secondary and above School (AOR=1.690, 95% CI=1.174-2.431) were more likely to receive Postnatal Care services than uneducated women. Women who had a job were more likely to receive Postnatal care than hadn't job women (OR=5.857, 95% CI=14.013-8.549). Married women were more likely to receive Postnatal care services than Never married women (AOR=1.572, 95% CI=1.149-2.149). Women who gave birth to twins were more likely to receive Postnatal Care than women who gave birth to a child (AOR=0.360, 95% CI=0.250-0.519). This study showed that postnatal care services were underutilized in the Sheka Zone, Southwest Ethiopian People Regions. The utilization of postnatal care services will therefore rise if routine antenatal care is encouraged to be followed by institutional delivery along with integrated health education about postnatal care both during pregnancy and delivery. The research area's government and stakeholders should arrange skill development for using postnatal care.

**Keywords:** Postnatal Care, Utilization of Postnatal Care, Binary Logistic Regression, SPSS

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## 1. Introduction

The first six weeks after delivery and the restoration of the reproductive organs to their pre-pregnancy form are referred to as postnatal care (PNC). Immediately following the baby's delivery and lasting up to six weeks is the postnatal phase (42 days) [1]. Following World Health Organization (WHO) guidelines for post-natal care greatly reduces mother and

newborn infant mortality during this high-risk period, especially in the first 24 hours and the first seven days after delivery [2]. The days and weeks immediately following a woman's delivery are critical for her and her newborn child since this is when their risk of developing long-term health issues increases. A range of physiological, social, and psychological changes must be adjusted during this period following delivery [3]. Lack of postnatal care leads to considerable maternal and baby morbidity and mortality [4–6].

The utilization of postpartum care services overall has remained low in poor countries [7]. For instance, there is a significant disparity in the percentage of antenatal care utilization (62 percent) and postnatal care service utilization within the first two days of birth, according to the Ethiopian Demography and Health Survey (EDHS) 2016 Ethiopia [8]. Another study conducted in Ethiopia found that 31.7 percent of women received postnatal care (PNC) within six weeks of giving birth and that antenatal care (ANC) is statistically linked to postnatal care (PNC) [9]. Several studies carried out around the nation discovered that a number of variables, many of which are unknown, discourage women from accessing postnatal care (PNC) services at medical institutions after giving birth [1, 10–12]. Postnatal care (PNC) is influenced by a number of factors, including socioeconomic status, maternal education, culture, beliefs, and faiths; income; level of care; accessibility; past postpartum care experiences; the health care system; and women's involvement in decision-making [13–17].

Despite the fact that there exist postpartum care facilities at every level, moms and their infants cannot obtain life-saving assistance. This shows both the gap in knowledge surrounding service consumption and the need for additional research into the determinants of postnatal care service utilization. The majority of moms did not use PNC services within the first 24 hours and first six weeks after giving birth, according to data from the Sheka Zone Health Office unless they or their newborns became ill. Therefore, the purpose of this study was to determine the variables that were related to postnatal care (PNC) usage in the southwest Ethiopian Peoples region.

## 2. Methodology

### 2.1. Description of the Study Area

Sheka Zone is located in South-west Ethiopian Peoples Regions. Around 700 kilometers southwest of Addis Ababa. Sheka is bordered on the south by Bench Sheko, on the west by the Gambela Region, on the north by the Oromia Region, and on the east by Keffa. Sheka's administrative capital is Tepi. Sheka Zone is made up of 67 Kebeles. This Zone has a total population of 199,314, with 101,059 men and 98,255 women, according to the CSA's 2007 Census, With 22,140 women under the age of Fertility, cities account for 34,227 people or 17.17% of the population [18].

### 2.2. Study Setting and Participants

A Community-based cross-sectional study design that included all women of Fertility age. A total of 1779 individuals were determined using a single population proportion by considering a 95% confidence interval, 5% marginal error, prevalence (51.%) [19], and design effect of 1.5 and 10% of non-response rate.

A Multi-stage Cluster sampling technique was used to select the study participant. The Zone is clustered into Three Woredas which consist of 67 Kebeles. Out of these three

woredas, 18 Kebeles were selected using simple random sampling then proportion to size to Kebeles was employed to share the sample size. Then picking households from each Kebeles by using a systematic method, the final households with women of fertility age were selected. Finally, eligible women of fertility age were interviewed from each selected household. When two or more women of Fertility age were encountered in one household, only one woman used to be considered in the study at random to avoid intra-class correlation.

### 2.3. Measurements

Using a prepared and pretested questionnaire, face-to-face interviews were used to gather the quantitative data. A review of the literature led to the adoption of the questionnaire. The Amharic, Shekagna, and Benchagna translations of the questionnaire were made after it had first been created in English, and then the English version was reviewed for consistency. The fourteen health workers that took part in the data collection under the supervision of researchers were nine nurses and five health extension specialists who were fluent in Amharic, Shekagna, and Benchagna.

On study guides, role plays (demonstrations), informed consent, how to approach participants, ethical procedures, general information on maternal health care services, and the study's goal, the investigators taught the data collectors and supervisors for two days in a row. The 14 health workers who collected the data included nine nurses and five health extension workers, and two diploma nurse supervisors were tasked with keeping an eye on daily activity, consistency, and completeness of the questionnaire as well as offering the necessary assistance during the data collection process.

The questionnaire was pre-tested on 54 participants in the nearby Selam Kebele who shared characteristics with the study participants prior to the actual data collection in order to ensure that the questions were clear and logically ordered and skipped over. The pretested sample was not used in the study, and the questions were modified in accordance with the results of the final data collection. The length of the entire interview and the number of data collectors were estimated based on the pretest.

### 2.4. Inclusion Criteria

Included all women who were of reproductive age, had given birth at least once in the five years before the survey and had spent at least six months living in the Sheka zone.

### 2.5. Exclude Criteria

Women who had only recently moved to the study region or those who couldn't communicate were not included in the study.

### 2.6. Dependent Variable

The outcome variable was postnatal care (PNC) utilized in the first six weeks of the women's birth within five years before the surveys.

$$PNC = \begin{cases} 1 = \text{if a Women Recieved PNC atleast one Times at the First Six Weeks} \\ 0 = \text{if a Women no Recieved PNC at the First Six Weeks} \end{cases}$$

## 2.7. Independent Variable

From a Previous Literature Review, the predictors of Postnatal Care Service utilization were Attending Antenatal care, place of delivery, age, high fertility risk, number of birth, educational level, work status, wealth index, Residence, and Marital Status [20–22].

## 2.8. Operational Definition

Postnatal care (PNC) - is care provided to a woman and her newborn infant by skilled health professionals (physicians, health officers, midwives, and nurses) in health facilities or at their home during the first six weeks after delivery. The postpartum period is defined as the time between an infant's birth and the first six weeks (42 days) of life.

Utilization of postnatal care - a mother and her newborn infant receive postnatal care from trained health professionals (physicians, health officers, midwives, or nurses) at least once during the first six weeks following delivery, either in a health facility or at home.

## 2.9. Statistical Analysis and Processing

The statistical program SPSS version 26 was used to examine the data. The background characteristics of the sample were summarized using descriptive statistics, such as frequencies and percentages. Binary logistic regression was used to determine whether the dependent and independent variables are related. All variables with a p-value of less than 0.25 in the bivariate analysis were chosen for the multivariable logistic regression to account for potential confounders. Factors with a p-value of less than 0.05 were considered significant predictors.

# 3. Results

## 3.1. Socio-Demographic Characteristics of Postnatal Care

A total of 1779 women aged 15 to 49 years old were

questioned, all of whom had at least one child in the five years before the survey with a mean of 0.55 and a Standard Deviation of 0.498. The majority of women were following PNC in the first six weeks (54.9%) (Figure 1).

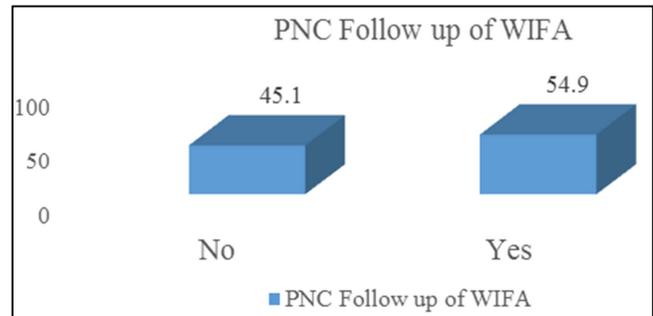


Figure 1. The prevalence of PNC Follows up of WIFA.

From the current study out of 1779 women of fertility age (WIFA), 917 (51.5%) of women attended ANC and greater than four while a woman who attended ANC less than four 862 (48.5%). majority of women Delivered their children at health institutions 58 (53.9%). the majority of women were between 20 and 24 age 591 (33.2%) while a small number of women aged between 35 and 49 207 (11.6%). from this result majority of women were elementary educated 842 (47.3%) while a small number of women were secondary and above 292 (16.4%), as well as uneducated women, 645 (36.3%). A majority of women were medium wealth index household 883 (49.6%). the women of poor wealth index households were 660 (37.1%) while the women of rich wealth index households were 236 (13.3%). A majority of women's residences were rural 918 (51.6%) while urban were 861 (48.4%). From these results majority of women has a high fertility risk of 927 (52.1%) while a woman who has no fertility risk was 852 (47.9%). A Majority of Women had worked 941 (52.9%) while women who hadn't worked 838 (47.1%) (Table 1).

Table 1. Socio-demographic characteristics of Postnatal Care Service sheka Zone.

Variables	Categories	Frequency	PNC Follow up	
			No	Yes
ANC	< 4 attended ANC	860 (48.5%)	514 (59.63%)	348 (40.37%)
	4+ Attended ANC	917 (51.5%)	289 (31.52%)	628 (68.48%)
Place Of Delivery	At Home	821 (46.1%)	446 (54.32%)	375 (45.68%)
	At Health Institution	958 (53.9%)	357 (37.27%)	601 (62.73%)
Education Status of women	No education	645 (36.3%)	440 (68.22%)	205 (31.78%)
	Elementary	842 (47.3%)	231 (27.43%)	611 (72.57%)
	High school and above	292 (16.4%)	132 (45.21%)	160 (54.79%)
Age of the Mother	15-19	400 (22.5%)	315 (78.75%)	85 (21.25%)
	20-24	591 (33.2%)	124 (20.98%)	467 (79.02%)
	25-29	306 (17.2%)	143 (46.73%)	163 (53.27%)
	30-34	275 (15.5%)	128 (46.55%)	147 (53.45%)
	35-49	207 (11.6%)	93 (44.93%)	114 (55.07%)

Variables	Categories	Frequency	PNC Follow up	
			No	Yes
Wealth Index of HH	Poor	660 (37.1%)	436 (66.10%)	224 (33.90%)
	Medium	883 (49.6%)	257 (29.11%)	626 (70.89%)
	Rich	236 (13.3%)	110 (46.61%)	126 (53.39%)
Residence of Respondents	Rural	861 (48.4%)	555 (64.46%)	306 (35.54%)
	Urban	918 (51.6%)	248 (27.02%)	670 (72.98%)
Fertility Risk	No-Risk	852 (47.9%)	536 (62.91%)	316 (37.09%)
	High Risk	927 (52.1%)	267 (28.80%)	660 (71.20%)
Children Ever Born	1	689 (38.7%)	441 (68.00%)	248 (32.00%)
	2-4	885 (49.8%)	261 (29.49%)	624 (70.51%)
	>4	205 (11.5%)	101 (49.27%)	104 (50.73%)
Work Status	Jobless	838 (47.1%)	595 (71.00%)	243 (29.00%)
	Working	941 (52.9%)	208 (22.10%)	733 (77.89%)
Marital Status	Never Married	708 (39.8%)	484 (68.36%)	224 (31.64%)
	Married/Living Together	941 (50.4%)	240 (26.76%)	657 (73.24%)
	Divorced/Separated	174 (9.8%)	79 (45.40%)	95 (54.60%)
Number of Birth	1	842 (47.3%)	519 (61.64%)	323 (38.36%)
	2	937 (52.7%)	284 (30.31%)	653 (69.69%)

Table 1 Summarizes the explanatory factors and the percentage of women who got postpartum care. From the current study out of 1779 women of fertility age (WIFA), 68.48% of women who attended antenatal care four and greater than four Received Postnatal Care at the first Six weeks while women who attended less than four antenatal care received Postnatal Care (PNC) at the first week were 40.37%. A woman who delivered their infants at a Health institution (62.73%) received Postnatal Care (PNC) in the first six weeks than the women who delivered their children at home (45.68%). The uneducated women (31.78%) less Received Postnatal Care (PNC) than the women who are Elementary (72.57%) and Secondary and above. As the age of women increased, the number of Received postnatal care (PNC) in the first six increased. Women aged between 20 and 24 (79.02%) Received postnatal care (PNC) in the first week more than any aged Category of women. A woman whose household was a medium wealth index (70.89%) Received postnatal care (PNC) in the first six weeks more than a woman with a poor wealth index (33.91%) as the education level of a woman increased Received Postnatal Care (PNC) at the first six is also increased. The proportion of women who received Postnatal Care (PNC) in the first six was high in urban residence women (72.98%) than in rural residence women (35.54%). The proportion of women who received PNC in the first six was high in the women having children between 2 and 4 (50.1%) and women having a child (32.00%). A woman who had a job (77.98%) Received PNC in the first six weeks than a woman who hadn't a job (29.00%). A woman who was married or living together (73.24%) Received PNC in the first six weeks than never-married women (31.24%) and divorced or separated women (54.60%). The proportion of women who received PNC at the first six weeks was high in the women who birth two children in the five years before the survey (69.96%) than in women having birth to one child in the five years before the survey (38.36%).

### 3.2. Factors Associated with the Utilization of Postnatal Cares Service for Women in Fertility Age

A woman who attended antenatal care for four and greater than four was 1.834 times more likely to follow Postnatal care (PNC) in the first six weeks than women who attended antenatal care (ANC) for less than four (AOR=1.834, 95% CI=1.413-2.380). Women who delivered their children at a health institution were 1.473 times more likely to follow up on Postnatal Care (PNC) in the first six weeks than women who delivered their children at home (AOR=1.473, 95% CI=1.163-1.867). Women aged between 20 and 24 were 3.570 times more likely to follow up on PNC in the first six weeks than women aged between 15 and 19 (AOR=3.570, 95% CI=2.419-5.268) as well as women aged between 25 and 29 were 1.766 times more likely to follow up on PNC in the first six weeks than women aged between 15 and 19. Women aged between 30 and 34 were 1.893 times more likely to follow up on PNC in the first six weeks than women aged between 15 and 19. Women who were in elementary school were 2.356 times more likely to follow up Postnatal Care (PNC) at the first six weeks than uneducated women (AOR=2.356, 95% CI=1.717-3.233) and women who were secondary and above were 1.690 times more likely to follow up Postnatal Care (PNC) at the first week than uneducated women (AOR=1.690, 95% CI=1.174-2.431). Women who had high fertility risk were 1.327 times more likely to follow up Postnatal Care (PNC) in the first six weeks than women with no fertility risk (AOR=1.327, 95% CI=1.009-1.746). Women who had a job were 5.857 times more likely to follow up on Postnatal Care (PNC) in the first six weeks than women who had no work or job (OR=5.857, 95% CI=14.013-8.549). Women who were Married or Living together were 1.572 times more likely to follow up Postnatal Care (PNC) at the first six weeks than women who were never married (AOR=1.572, 95% CI=1.149-2.149) A woman who birth two children in the five years before the survey was 0.360 times more likely to follow up Postnatal Care (PNC) at the first six weeks than women who had a child (AOR=0.360, 95%

CI=0.250-0.519) (Table 2).

**Table 2.** Binary analysis of factors associated with the Use of Postnatal Care Service in Sheka Zone.

	COR 95% C.I.	AOR 95% C.I.	P-value
ANC visits			
<4	1	1	
4+	3.210 (2.642-3.900)	1.834 (1.413-2.380)	.000
Place of Delivery			
At Home	1	1	
At health InsHealthon	2.002 (1.656-2.421)	1.473 (1.163-1.867)	.001
Age of Mother			
15-19	1	1	.000
20-24	13.957 (10.228-19.044)	3.570 (2.419-5.268)	.000
25-29	4.224 (3.042-5.866)	1.766 (1.190-2.621)	.005
30-34	4.256 (3.039-5.961)	1.893 (1.272-2.816)	.002
35-49	4.543 (3.157-6.536)	2.147 (1.403-3.287)	.000
Education Level of Mother			
No Education	1	1	.000
Elementary	2.356 (1.717-3.233)	2.356 (1.717-3.233)	.000
Secondary and Higher	1.690 (1.174-2.431)	1.690 (1.174-2.431)	.005
Wealth index of Household			
Poor	1	1	.217
Medium	4.741 (3.817-5.889)	.749 (0.531-1.056)	.099
Rich	2.230 (1.648-3.016)	.768 (0.515-1.146)	.196
Residence of respondents			
Rural	1	1	
Urban	4.900 (4.005-5.995)	1.037 (0.732-1.469)	.839
Fertility Risk			
No Fertility Risk	1	1	
High fertility risk	4.193 (3.437-5.115)	1.327 (1.009-1.746)	.043
Work Status of Mother			
No Work	1	1	
Working	8.629 (6.964-10.692)	5.857 (4.013-8.549)	.000
Marital Status of Respondents			
Never Married	1	1	.017
Married/Living together	5.915 (4.763-7.346)	1.572 (1.149-2.149)	.005
Divorced/Separated	2.598 (1.853-3.643)	1.380 (0.930-2.047)	.110
Number of birth in the 5 years			
1	1	1	
2	3.695 (3.035-4.498)	.360 (0.250-0.519)	.000
Constant	.115	.115	.000

## 4. Discussion

This study was carried out to determine the variables that are related to the use of postnatal care services in the southwest Shaka zone of the Ethiopian people. In this study, it was shown that 54.9% of women had postpartum care services during the first six weeks. Previous research, three of which were from Ethiopia and revealed that more than 50% of participants in four trials, supported the current study [12, 23, 24] and one from Zambia [25]. The reported prevalence of postnatal care varied from 25% to 50% across the six studies [26–30]. In contrast, the results of the current study were less significant than those of a study done in Adwa, North Ethiopia (78.3%) [31].

According to a recent study, prenatal care had a big impact on how often people used postnatal care (PNC) services. Women who had four or more antenatal visits were 1.834 times more likely to receive postpartum care

(PNC) in the first six weeks than those who had fewer ANC visits (OR=1.834, 95% CI=1.413-2.380). Previous findings from nine research, which were used to support this one, showed that the use of antenatal care (ANC) services had a statistically significant impact on the use of postnatal care (PNC) services [11, 23, 25, 28]. This finding is supported by comprehensive analysis, meta-analysis, and EDHS future analysis research carried out in Ethiopia [32] in addition to a meta-analysis study conducted in developing and middle-income countries [33]; other studies conducted in India [34], Ghana [35], Nepal, Tanzania, Nigeria [36]; and a community-based interventional study in Ethiopia [37]. This may be due to the fact that these women have access to information on the potential postpartum difficulties, are aware of the danger indicators associated with the postpartum period, and have a strategy in place for dealing with complications, including where to go in the event of an issue [38].

According to the Current study Place of Delivery, and care was important determinant of the Postnatal Care Service's use. Postnatal Care (PNC) was 1.47 times more likely to be provided to mothers who gave birth in a medical facility than to mothers who gave birth at home (OR=1.473, 95% CI=1.163-1.867). This finding is consistent with the findings of the EDHS study 2011 [39], Bangladesh [40], and Nepal [40], this reveals a high correlation between using postnatal care services and giving delivery in a medical facility. This woman who gave birth in a health facility may have a better chance of receiving health education related to PNC services at the time of delivery because there is a significant positive relationship between the use of PNC services and the location of delivery. As a result, she may have more opportunities to learn about the types, benefits, and risks of these services. They would be able to use PNC services while they are residing in healthcare facilities. This exposure encourages health-seeking behavior to prevent maternal and neonatal complications when compared to mothers who gave birth at home. Additionally, as they belong to a more traditional cohort, women who give birth at home are less likely to seek postpartum care [41].

This study found that women's educational attainment played a significant role in their decision to use postnatal care services. An earlier study conducted in Nepal provided support for this finding [42]. The similarities may result from a woman's increased autonomy and decision-making ability over her health and usage of maternity healthcare services once she has received an education [43]. Similarly, moms who lack education are unable to participate in a variety of social and economic responsibilities, decision-making, or women's empowerment. Education also helps to better teach other women about the usage of postnatal care services and to increase mothers' understanding and acceptance of novel concepts.

These results show that the use of the Postnatal Care Service was not significantly influenced by the wealth index. An earlier study in Ethiopia provided evidence for this one [44]. This is because maternal health services are free, and the majority of women who get postpartum care (PNC) do so in connection with birth, pre-discharge care, and postpartum care at home (PNC).

This study indicated that one of the most significant determinants of postnatal care services was a woman's employment position. Similar findings were made by researchers in Adwa, who discovered that women who worked for themselves had a 9.1 times higher likelihood of receiving postnatal care (PNC) than women who did not [41].

The age of a woman was found to be a key determining factor in seeking Postnatal Care (PNC) services in the current study. The same study carried out in Bench Sheka Zone backed up this conclusion [19]. When having their first child, moms between the ages of 20 and 24 were more likely to get PNC than those between 15 and 19. This might be the case because as people age, their healthcare requirements get more sophisticated. However, other national studies indicated that the use of PNC was unaffected by the mother's age [31].

The current study found that Postnatal Care services were significantly influenced by the number of children. The results were in line with research from Kenya, Ethiopia, China, and India [45, 46]. However, it conflicts with research from the Gondar Zuria district, which found that moms of small children did not use postpartum care services [47]. This might be the case since prim women used postnatal services more frequently than multipara mothers did because they had more issues to deal with.

## 5. Limitation of the Study

There might be a recall bias even though the study only included mothers who gave birth during the previous five years. The cross-sectional data-based retrospective design of the study does not show a cause-and-effect connection.

## 6. Conclusion and Recommendation

These results showed that, despite postnatal care being an essential treatment to reduce mother and baby morbidity and mortality, postnatal care service utilization is low. Utilization of Postnatal Care (PNC) services were found to be independently predicted by attendance at prenatal care, place of delivery, age, high fertility risk, number of births, educational attainment, employment position, and marital status. The utilization of postnatal care services will therefore rise if routine antenatal care is encouraged to be followed by institutional delivery along with integrated health education about postnatal care both during pregnancy and delivery. To increase the use of postnatal care services, policymakers and programmers should take more antenatal care services into consideration. The greatest way to increase low Postnatal Care (PNC) service use may be for the practitioner to tell the patient about the significance of postnatal care during antenatal care.

## 7. The Implications Study

The results of this study will be utilized to analyze factors that limit the use of postnatal care (PNC) services and to suggest laws and other measures meant to promote the use of PNC services.

## Abbreviation

- ANC: Antenatal Care
- AOR: Adjusted odds ratio
- CI: Confidence interval
- DC: Delivery Care
- PNC: Postnatal Care
- SNNPRS: Southern Nations Nationalities and Peoples Regional State
- SSA: Sub-Saharan Africa
- WHO: World Health Organization
- WIFA: Women in fertility age

## Declaration

### *Ethics Approval and Consent to Participate*

The College of Natural and Computational Sciences Research and Ethics Review Board of Mizan-Tepi University gave its blessing to this experiment and gave it the go-ahead for human subject research. The Mizan-Tepi University Research and Ethics Review Board (RERB) decided not to ask study participants to provide formal informed permission because it was a retrospective study. Data, however, were kept private and anonymous. The Helsinki Declaration undertook this investigation.

### *Competing Interests*

The author(s) declared no potential conflicts of interest concerning the research, authorship, or publishing of this manuscript.

### *Data Availability*

On reasonable request, the corresponding author will provide the data used in this study. Related information about the topic might be provided upon request.

### *Authors' Contribution*

\*\*GD: designed the study, participated in the data edit and entry, performed analysis, interpreted results, and drafted, and revised the manuscript.

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