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Sociodemographic and Socioeconomic Determinants of Postnatal Health Check Providers in Sierra Leone: Evidence from the 2019 SLDHS

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Abstract: Maternal and neonatal outcomes are critically influenced by the quality of postnatal care. Despite efforts to improve maternal healthcare utilization in Sierra Leone, significant disparities persist in access to professional postnatal care. This study examines the factors associated with the type of healthcare provider performing postnatal checkups among mothers. This study used data from the 2019 Sierra Leone Demographic and Health Survey (SLDHS). Of 7,323 women who gave birth in the five years preceding the survey, 3,403 provided information on whether their postnatal check was conducted by a doctor, nurse/midwife, auxiliary midwife, traditional birth attendant, community/village health worker, or another provider. Analyses were conducted using SPSS version 29, and descriptive, Chi-square test, and multinomial logistic regression were used to analyse the data. Chi-square tests revealed that the following variables have an influence on postnatal health providers such as region (χ^2=169.349, p=0.001); place of residence (χ^2=90.723, p=0.001); level of education (χ^2=29.253, p=0.0253); wealth index (χ^2=107.884, p=0.001); working status (χ^2=23.667, p=0.001); and birth order (χ^2=19.022, p=0.04). Binary logistic regression analysis revealed that determinants significantly associated with receiving postnatal care from professional care included age (women aged 30–34, OR=1.491; 35–39, OR=1.566; 40–44, OR=1.585), region (Eastern, OR=2.833; Northern, OR=3.512; North-western, OR=2.269; Southern, OR=2.842), urban residence (OR=1.209), wealth index (Poorest, OR=1.466; Poorer, OR=1.527; Middle, OR=1.788), place of delivery (Government health centre, OR=1.371; Private hospital/clinic, OR=3.952), marital status (living with a partner, OR=1.991) and birth order (0–4, OR=0.687; 5–9, OR=0.547). Conversely, determinants for non-professional care showed inverse trends. These findings highlight significant socioeconomic and geographical inequities in postnatal care access, underscoring the need for targeted interventions to improve healthcare infrastructure, promote facility-based deliveries, and enhance maternal health education.

Keywords: Sierra Leone demographic and health survey; postnatal healthcare; type of postnatal care provider; socioeconomic determinants

1. Introduction

Postnatal healthcare is a critical component of maternal and neonatal well-being, particularly in low-resource settings where maternal mortality rates remain high. The postpartum period is widely recognized as one of the most vulnerable times for both mothers and newborns, yet access to skilled postnatal care remains inadequate in many countries, including Sierra Leone. [1] recommends that all women receive a postnatal health check within the first 48 hours after delivery, as most maternal deaths occur in the immediate postpartum period due to preventable complications such as infections, postpartum haemorrhage, and hypertensive disorders. However, studies show that in many low-income countries, less than 50% of women receive any form of postnatal care from a skilled provider [2]

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Sierra Leone continues to face significant challenges in maternal healthcare, with one of the highest maternal mortality rates globally, estimated at 1,120 deaths per 100,000 live births [3]. Neonatal mortality remains a critical issue as well, with a rate of 31 deaths per 1,000 live births, primarily due to complications arising from inadequate maternal care. Previous research highlights that sociodemographic factors such as educational attainment, wealth status, and place of residence play a significant role in determining whether a woman receives postnatal care [5]. Studies in sub-Saharan Africa have consistently found that women with higher education levels are two to three times more likely to seek professional maternal healthcare services than those with no formal education [6].

Economic disparities further exacerbate the issue of access to postnatal health check providers in Sierra Leone. Research by [7] found that women from wealthier households are significantly more likely to receive skilled postnatal care compared to those in lower wealth quintiles. Similarly, geographic disparities persist, as rural women are much less likely to access healthcare facilities due to long travel distances, high transportation costs, and limited health infrastructure [8]. In Sierra Leone, only 55% of rural women receive postnatal checkups compared to 75% of urban women, highlighting the urban-rural divide in healthcare access [9].

The availability of skilled healthcare professionals also remains a major barrier. [1] recommends a minimum of 44.5 doctors, nurses, and midwives per 10,000 people, but Sierra Leone falls drastically short, with only 1.4 healthcare professionals per 10,000 people [10]. This shortage forces many women, particularly in rural areas, to rely on Traditional Birth Attendant (TBAs) who may not be adequately trained to handle postnatal complications [11]. While TBAs are often trusted within communities, studies show that births attended by skilled healthcare professionals result in lower maternal and neonatal mortality rates [12].

Health crises, such as the 2014–2016 Ebola epidemic, further weakened maternal healthcare utilization in Sierra Leone, affecting not only antenatal care and facility-based deliveries but also postnatal health checks**.** [13] reported a 22% decline in antenatal care visits and a 23% reduction in facility-based deliveries during the epidemic, which contributed to a reduction in the availability of skilled providers performing postnatal checks. The epidemic resulted in a severe shortage of healthcare staff, disrupting the continuity of professional postnatal care and forcing many mothers, especially in rural areas, to rely on less trained providers such as traditional birth attendants. Even after the epidemic, maternal healthcare utilization remained low due to lingering distrust in health facilities, which extended to postnatal care services [14].

Given these disparities, it is crucial to understand the factors influencing postnatal healthcare utilization in Sierra Leone. This study builds on previous research by examining the association between mothers' sociodemographic and socioeconomic characteristics and the type of healthcare provider performing postnatal health checks. By identifying key determinants, the study aims to provide insights that can inform targeted interventions to improve postnatal healthcare access and reduce maternal and neonatal mortality.

2. Material and Methods

This study utilized a cross-sectional research design and employed secondary data analysis from the 2019 Sierra Leone Demographic and Health Survey (SLDHS). Conducted by Statistics Sierra Leone with technical assistance from the Demographic and Health Surveys (DHS) Program, the SLDHS provides nationally representative data on various health indicators, including maternal and child health. The survey is widely used for analysing healthcare utilization patterns and serves as a critical source for examining the determinants of postnatal care access in Sierra Leone [4,15].

The study population comprises women in reproductive aged from 15 to 49 who had given birth within the five years preceding the survey. The SLDHS employed a stratified two-stage cluster sampling approach to ensure national representativeness. In the first stage, Enumeration Areas (EAs) were selected using Probability Proportional to Size (PPS) to ensure adequate coverage across Sierra Leone's administrative regions. In the second stage, households were systematically selected from

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these EAs, and eligible women were interviewed. The final sample consists of 7,323 women, allowing for robust statistical analysis of postnatal healthcare utilization [1,8].

2.1. Variables of Interest

The primary outcome variable in this study is the type of healthcare professional performing the postnatal health check, categorized as either a skilled healthcare provider—such as a doctor, nurse, or midwife—or a non-professional health provider, which includes traditional birth attendants and community or village health workers. The independent variables include maternal age, region of residence, place of residence (urban or rural), level of education, household wealth index, marital status, working status, place of delivery (home or health facility) and birth order, Total Children Ever Born (TCEB). These factors have been widely recognized in prior research as key determinants of maternal healthcare utilization, particularly in low-resource settings [16,17].

2.2. Data Analysis

The data analysis followed a structured approach, beginning with descriptive statistics to summarize the sociodemographic characteristics of the study population. Bivariate analysis, including Chi-square tests was conducted to assess associations between the independent variables and the likelihood of receiving postnatal care from a skilled provider. To further examine these relationships, binary logistic regression was used to determine the odds of receiving postnatal care from a skilled professional based on sociodemographic factors. Statistical significance was assessed with a p-value of less than 0.05 considered indicative of a meaningful association. All analyses were conducted using IBM Statistical Package for Social Sciences (SPSS) version 29.0 to ensure statistical accuracy and reliability [5,7].

2.3. Ethical Consideration

This study does not need ethical clearance since it used secondary data collected by SLDHS. Given that the study utilizes publicly available secondary data, no additional ethical clearance was required for this analysis [4]. Ethical approval for the SLDHS was granted by the Sierra Leone Ethics and Scientific Review Committee and the DHS Program. The Sierra Leone Demographic and Health Survey obtained informed consent from all participants before data collection, and all personal identifiers were removed to ensure confidentiality.

3. Results

3.1. Characteristics of the Respondents

Table 1 indicates that respondents were women aged 15 to 49 years, with majority of women being in the age group of 25–29 years with 25.4%, while women in 45–49 age groups represented the smallest shares at 3.1%. Regionally, the sample was fairly evenly distributed, across the regions. The wealth status of women was skewed towards lower socioeconomic status: 21.9% of respondents were classified as the poorest, (24%), while only 11.6% women were the richest.

Most respondents lived in rural areas (69%) compared to urban areas 31%, a factor that is critical for understanding access to healthcare. Women in the sample were predominantly married 78.5%. A high percentage of women (75.5%) were employed at the time of the survey, reflecting the economic demands in the context of rural and informal work environments. The remaining 21.5% of mothers were unemployed.

Regarding postnatal care, most of postnatal checkups (83.8%) were conducted by nurses and midwives, while only 3.4% of mothers received care from a doctor, indicating limited access to highly trained providers. Traditional birth attendants (TBAs) attended to 9.0% of the mothers, while auxiliary midwives and community health workers accounted for 1.9% and 1.6% respectively.

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Table 1. The distribution of the characteristics of respondents.

Age	n	%	Type of Place Residence	n	%	Currently Working	n	%
15-19	278	8,2	Urban	1054	31	No	733	21.5
20-24	734	21,6	Rural	2349	69	Yes	2670	75.5
25-29	863	25,4	**Place of delivery**	**n**	**%**	**Wealth Index**		
30-34	604	17,7	Mother's home	555	16,3	Poorest	745	21.9
35-39	603	17,7	Other home	213	6,3	Poorer	818	24,0
40-44	213	6,3	Government hospital	939	27,6	Middle	764	22,5
45-49	105	3,1	Government health centre	1 218	35,8	Richer	680	20,0
Region	**n**	**%**	Government health post	410	12,0	Richest	396	11,6
Eastern	380	11,2	Other public sector	1	0,0	**Birth Order**	**n**	**%**
Northern	891	26,2	Private hospital/clinic	58	1,7	0-4 children	2 530	74.3
North-western	831	24,4	Other	9	0,3	5-9 children	844	24.8
Southern	826	24,3				10-14 children	29	0.9
Western	475	14,0						
Educational attainment	**n**	**%**	**Current marital status**	**n**	**%**	**Postnatal check provider**	**n**	**%**
No education	1 913	56,2	Never in union	424	12,5	Doctor	115	3,4
Incomplete primary	339	10,0	Married	2 673	78,5	Nurse, midwife	2 853	83,8
Complete primary	112	3,3	Living with partner	139	4,1	Auxiliary midwife	65	1,9
Incomplete secondary	800	23,5	Widowed	54	1,6	Traditional birth attendant	307	9,0
Complete secondary	146	4,3	Divorced	12	0,4	Community/village health worker	55	1,6
Higher	93	2,7	Separated	101	3,0	Other	8	0,2

Source: Researcher's own calculation using SPSS, SLDHS, 2019.

3.2. Women's Characteristics and the Type of Postnatal Health Provider in Sierra Leone

The findings in Table 2 indicate that in the Northern region, nurses and midwives conducted 89.1% of the postnatal checkups, while community or village health workers performed 2.8% and doctors only 1%, indicating a strong reliance on midwifery services. In the Western region, 85.9% of checkups were performed by nurses or midwives; however, doctors contributed 6.5%, the highest percentage among all regions, and traditional birth attendants (TBAs) handled 6.3% of the cases. In the Southern region, nurses and midwives carried out 81.4% of the checkups, doctors were involved in 4.6%, and TBAs performed 12.2%, reflecting a comparatively greater dependence on traditional providers. In the Northwestern region, 82.4% of postnatal checkups were done by nurses or midwives, with doctors involved in 3.1%, TBAs in 10%, and auxiliary midwives in 2.8%. The Eastern region showed the lowest involvement of nurses and midwives at 77.4%, while auxiliary midwives contributed 7.1%, TBAs 10.5%, doctors 2.9%, and community health workers 2.1%.

Comparing urban and rural areas, urban settings saw nurses and midwives performing 87.8% of postnatal checkups, with doctors conducting 6.1%, and TBAs 4.6%, while community health workers and auxiliary midwives played minimal roles (0.4% and 1.1%, respectively). In rural areas, nurses and midwives performed 82.1% of the checkups, TBAs accounted for 11.0%, auxiliary midwives 2.3%, doctors 2.2%, and community health workers 2.2%. This distribution was statistically significant ($\chi^2 = 90.723$, $p = 0.001$), highlighting notable differences in the types of health providers based on residence.

Educational attainment also revealed significant disparities in terms of postnatal health checkups. The findings revealed that, whether mothers were educated on not, their checkups were performed by nurses and midwives at over 85%. The association between educational attainment and the type of health providers was statistically significant ($\chi^2 = 29.253$, $p = 0.0253$).

Overall, while nurses and midwives were the primary providers across all regions and settings, there were marked variations. Regions such as the Northern and Western areas, as well as urban settings and mothers with higher education, exhibited higher engagement with formally trained providers (including doctors), whereas the Southern, Northwestern, and Eastern regions, rural areas, and lower educational groups showed a greater reliance on traditional and auxiliary providers.

Additionally, the Chi-square test results revealed a significant relationship between the type of healthcare provider performing postnatal care and mothers' working status, place of delivery, and birth order. For working status, the data showed that nurses and midwives served as the primary

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providers for both working and non-working mothers. Specifically, 84.6% of working mothers received postnatal care from nurses and midwives, compared to 80.9% of non-working mothers. The relationship between employment status and type of provider was statistically significant (p = 0.001). This means that the type of postnatal healthcare provider is influenced by whether or not a woman is working.

In terms of place of delivery, the analysis indicated clear differences in terms of healthcare provider utilization. In government hospitals, nurses and midwives conducted 89.2% of postnatal checks, with doctors performing 7% of them. Government health centres relied on nurses and midwives for 86.9% of check-ups, while doctors attended only 2.5% of cases. Government health posts showed an even higher dependence on nurses and midwives, with 91.5% of check-ups performed by this group, supplemented by auxiliary midwives in 2.7% of cases. Conversely, home births presented a stark contrast whereby 48.1% of postnatal checks were conducted by TBAs and 6.6% by community health workers, underscoring a heavy reliance on traditional health providers. Private hospitals or clinics exhibited a relatively higher involvement of doctors at 13.8%, with nurses and midwives still providing the majority of care (84.5%). These differences were statistically significant ($\chi^2 = 478.486$, p = 0.001).

Finally, when type of health provider was examined by birth order, the results indicated that the type of health provider varied with the birth order. Among mothers with 0–4 births, 84.8% of postnatal checks were performed by nurses and midwives, and TBAs accounted for 8.3%. For mothers with 5–9 birth orders, the percentage of checks by nurses and midwives decreased slightly to 81.4%, while TBA involvement increased to 10.7%. In mothers with 10–14 births, nurses and midwives conducted only 72.4% of the checks, and reliance on TBAs rose sharply to 24.1%. The involvement of doctors and auxiliary midwives remained low across all birth order groups. The Chi-square test was also statistically significant ($\chi^2 = 19.022$, p = 0.04).

Overall, the findings emphasize that while nurses and midwives are the predominant providers across different subgroups, working status, place of delivery, and birth order are significantly associated with variations in the type of postnatal healthcare received.

Table 2. Determinants associated with the type of postnatal care provider.

Variables	Person Who Performed Postnatal Check Up								
	Doctor	Nurse, Midwife	Auxiliary Midwife	Traditional Birth Attendant	Community/Village Health Worker	Other	Total Count	%	p-Value
Age	%	%	%	%	%	%			
15-19	2.5	80.9	3.2	11.2	1.8	0.4	278	100	0.213
20-24	3.3	82.6	1.4	10.5	2.0	0.3	734	100	
25-29	2.5	86.4	0.9	8.2	1.7	0.1	863	100	
30-34	4.5	81.6	2.3	9.6	1.7	0.3	604	100	
35-39	3.5	85.6	2.2	7.5	1.2	0.2	603	100	
40-44	4.2	84.5	3.8	6.1	1.4	0.0	213	100	
45-49	4.6	80.6	2.8	11.1	0.0	0.9	105	100	
Total	3.4	83.8	1.9	9.0	1.6	0.2	3 403	100	
Region									
Eastern	2.9	77.4	7.1	10.5	2.1	0.0	380	100	0.001
Northern	1.0	89.1	1.1	5.9	2.8	0.0	891	100	
Northwestern	3.1	82.4	2.8	10.0	1.0	0.7	831	100	
Southern	4.6	81.4	0.0	12.2	1.6	0.2	826	100	
Western	6.5	85.9	1.1	6.3	0.2	0.0	475	100	
Total	3.4	83.8	1.9	9.0	1.6	0.2	3 403	100	
Type of place of residence									
Urban	6.1	87.8	1.1	4.6	0.4	0.0	1 054	100	0.001
Rural	2.2	82.1	2.3	11.0	2.2	0.3	2 349	100	
Total	3.4	83.8	1.9	9.0	1.6	0.2	3 403	100	

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Education level									
No education	2.9	83.3	2.1	9.8	1.7	0.2	1 913	100	
Incomplete primary	2.9	84.4	1.5	8.8	2.1	0.3	339	100	
Complete primary	4.5	77.7	1.8	15.2	0.9	0.0	112	100	
Incomplete secondary	3.8	84.9	1.8	7.8	1.5	0.4	800	100	0.0253
Complete secondary	6.2	86.3	2.1	3.4	2.1	0.0	146	100	
Higher	6.5	87.1	0.0	6.5	0.0	0.0	93	100	
Total	3.4	83.8	1.9	9.0	1.6	0.2	3 403	100	
Wealth index									
Poorest	1.9	78.8	1.7	14.4	2.8	0.4	745	100%	
Poorer	3.4	80.8	3.1	10.4	2.2	0.1	818	100%	
Middle	2.4	85.2	2.4	8.1	1.6	0.4	764	100%	0.001
Richer	4.6	88.2	0.7	5.7	0.6	0.1	680	100%	
Richest	6.1	89.4	1.0	3.5	0.0	0.0	396	100%	
Total	3.4	83.8	1.9	9.0	1.6	0.2	3 403	100%	
Marital status									
Poorest	1.9	78.8	1.7	14.4	2.8	0.4	745	100	
Poorer	3.4	80.8	3.1	10.4	2.2	0.1	818	100	
Middle	2.4	85.2	2.4	8.1	1.6	0.4	764	100	
Richer	4.6	88.2	0.7	5.7	0.6	0.1	680	100	0.157
Richest	6.1	89.4	1.0	3.5	0.0	0.0	396	100	
Total	3.4	83.8	1.9	9.0	1.6	0.2	3 403	100	
Poorest	1.9	78.8	1.7	14.4	2.8	0.4	745	100	
Respondent working									
No	5.2	80.9	3.0	10.1	0.5	0.3	733	100	
Yes	2.9	84.6	1.6	8.7	1.9	0.2	2 670	100	0.001
Total	3.4	83.8	1.9	9.0	1.6	0.2	3 403	100	
Place of delivery									
Mother's home	1.6	68.3	2.5	21.8	4.7	1.1	555	100	
Other home	0.0	68.1	2.8	26.3	1.9	0.9	213	100	
Government hospital	7.0	89.2	0.9	2.7	0.2	0.0	939	100	
Government health centre	2.5	86.9	2.0	7.1	1.5	0.0	1 218	100	
Government health post	0.5	91.5	2.7	4.1	1.2	0.0	410	100	0.001
Other public sector	0.0	0.0	100.0	0.0	0.0	0.0	1	100	
Private hospital/clinic	13.8	84.5	1.7	0.0	0.0	0.0	58	100	
Other	0.0	88.9	0.0	11.1	0.0	0.0	9	100	
Total	3.4	83.8	1.9	9.0	1.6	0.2	3 403		
Birth Order/TCEB									
0-4	3.3	84.8	1.7	8.3	1.7	0.2	2 530	100	
5-9	3.6	81.4	2.7	10.7	31.3	0.4	844	100	0.04
10-14	3.4	72.4	0.0	24.1	0.0	0.0	29	100	
Total	3.4	83.8	1.9	9.0	1.6	0.2	3 403	100	

Source: Researcher's own calculation using SPSS, SLDHS, 2019.

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3.3. The Factors Determining Postnatal Health Check Providers in Sierra Leone

The binary logistic regression analysis revealed several key factors influencing whether a professional or non-professional healthcare provider conducted the postnatal check is displayed in Table 3. Age emerged as an important determinant. The findings revealed that women aged 30–34 had higher odds (Odd Ratio: OR= 1.941) of being checked by professional healthcare providers compared to mothers aged between 44 and 49. Similarly, women aged 35–39 and 40–44 had higher odds (OR= 1.566 and OR= 1.585) respectively than women in 45-49 age groups. These findings indicate that as women grow older, particularly beyond the age of 30, they are more likely to be checked by professional healthcare providers.

The findings indicate further that region was also significant. Women residing in the Eastern, Northern, North-western, and Southern regions had substantially higher odds of being attended by professional healthcare providers compared to women residing in the Western region. Furthermore, staying in urban areas increased the likelihood of receiving postnatal health checkup from professional healthcare providers (OR= 1.209) compared to their rural counterparts.

The wealth index also proved to be a significant predictor. Women in the poorest, poorer, and middle wealth categories respectively, were more likely to receive postnatal health checkups from professional healthcare providers compared to those in the richest category. Additionally, place of delivery was highly influential. The data show that delivering in a government health centre (OR=1.371) or private hospital/clinic (OR=3.952) was associated with higher odds of receiving postnatal health checkups from healthcare professional, whereas delivery in a government hospital (OR=0.788) or other public sectors (OR=0.657) reduced the odds of being checked by healthcare professionals. Marital status was another significant determinant. Women living with a partner had higher odds (OR = 1.991) of being checked by healthcare professionals compared to women who were no longer living with their partners. Birth order was also significant. The data show that women with from zero to 4 births had lower chances of receiving postnatal health checkups compared to women with birth order from10th to 14th birth order. Suggesting that as the number of children increases, the likelihood of receiving professional postnatal care decreases.

When examining factors contributing to the use of non-professional healthcare providers, the patterns in table were largely the inverse of those observed for professional care. Older women, particularly those aged 30–34, 35–39, and 40–44, were significantly less likely to receive care from non-professional healthcare providers, with odds ratios of 0.671, 0.638, and 0.631, respectively. Regional disparities were similarly pronounced. Being women staying in the Eastern, Northern, North Western, and Southern regions decrease the likelihood of receiving postnatal health checkups from non-professional healthcare providers compared to women staying in South Western region of Sierra Leone. Furthermore, staying in urban areas reduces the odds of using non-professional healthcare providers compared to women staying in rural areas.

The wealth index further influenced the use of non-professional healthcare. The study revealed that women in the poorest, poorer, and middle wealth categories were less likely to be checked by non-healthcare professionals compared to women in the richest wealth index. Place of delivery was also significant. The findings show that, delivering at government health centres, in private hospitals, or at the clinics significantly reduced the likelihood of receiving postnatal checkups from non-professional healthcare providers. Marital status was also a contributing factor, with women living with a partner showing lower odds of receiving postnatal health checkups from non-professional healthcare. Higher birth orders were associated with increased use of non-professional healthcare providers, where mothers with 0–4 and 5-9 births had higher odds (OR= 1.455 and OR= 1.827) respectively) of using non-professional healthcare providers.

In summary, the analysis indicates that factors such as older age, specific regional locations, urban residence, lower wealth index, facility-based deliveries, and living with a partner significantly increase the odds of receiving postnatal health checkups from professional healthcare, compared to the reference groups. Conversely, these same factors tend to decrease the likelihood of relying on non-professional healthcare, while a higher birth order is associated with an increased reliance on

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non-professional healthcare providers. These results underscore substantial socioeconomic and geographic disparities in postnatal healthcare access among women in Sierra Leone.

Table 3. Binary logistic regression on the type of postnatal health check provider.

Variables	Professional Healthcare Provider					Non-Professional Healthcare Provider				
	B	Std. Error	Wald	Sig.	Exp(B)	B	Std. Error	Wald	Sig.	Exp(B)
Age in 5-year groups			21,889	,001				21,889	,001	
15-19	,021	,103	,043	,835	1,022	-,021	,103	,043	,835	,979
20-24	,135	,106	1,642	,200	1,145	-,135	,106	1,642	,200	,873
25-29	,175	,115	2,318	,128	1,191	-,175	,115	2,318	,128	,839
30-34	,400	,122	10,698	,001	1,491	-,400	,122	10,698	,001	,671
35-39	,449	,149	9,070	,003	1,566	-,449	,149	9,070	,003	,638
40-44	,460	,182	6,367	,012	1,585	-,460	,182	6,367	,012	,631
45-49 (reference category)										
Region			243,308	<,001				243,308	<,001	
Eastern	1,041	,082	159,389	<,001	2,833	-1,041	,082	159,389	<,001	,353
Northern	1,256	,086	212,315	<,001	3,512	-1,256	,086	212,315	<,001	,285
Northwestern	,819	,081	101,394	<,001	2,269	-,819	,081	101,394	<,001	,441
Southern	1,045	,105	99,263	<,001	2,842	-1,045	,105	99,263	<,001	,352
Western (reference category)										
Type of place of residence										
Urban	,190	,089	4,541	,033	1,209	-,190	,089	4,541	,033	,827
Rural (reference category)										
Educational attainment			5,752	,331				5,752	,331	
No education	,066	,087	,566	,452	1,068	-,066	,087	,566	,452	,937
Incomplete primary	-,252	,138	3,341	,068	,777	,252	,138	3,341	,068	1,287
Complete primary	,049	,071	,479	,489	1,050	-,049	,071	,479	,489	,952
Incomplete secondary	,123	,132	,873	,350	1,131	-,123	,132	,873	,350	,884
Complete secondary	,060	,160	,141	,707	1,062	-,060	,160	,141	,707	,942
Higher (reference category)										
Wealth index			62,418	<,001				62,418	<,001	
Poorest	,382	,074	26,502	<,001	1,466	-,382	,074	26,502	<,001	,682
Poorer	,423	,077	30,228	<,001	1,527	-,423	,077	30,228	<,001	,655
Middle	,581	,106	30,259	<,001	1,788	-,581	,106	30,259	<,001	,559
Richer	,166	,131	1,615	,204	1,181	-,166	,131	1,615	,204	,847
Richest (reference category)										
Place of delivery			58,640	<,001				58,640	<,001	
Respondent's home	,168	,137	1,502	,220	1,183	-,168	,137	1,502	,220	,845
Other home	-,021	,089	,058	,810	,979	,021	,089	,058	,810	1,022
Government hospital	-,239	,082	8,481	,004	,788	,239	,082	8,481	,004	1,270
Government health centre	,315	,104	9,198	,002	1,371	-,315	,104	9,198	,002	,730
Government health post	,788	1,484	,282	,596	2,198	-,788	1,484	,282	,596	,455
Other public sector	-,420	,185	5,161	,023	,657	,420	,185	5,161	,023	1,521
Private hospital/clinic	1,374	,697	3,886	,049	3,952	-1,374	,697	3,886	,049	,253
Other (reference category)										
Current marital status			11,554	,041				11,554	,041	
Never in union	,020	,083	,061	,806	1,021	-,020	,083	,061	,806	,980
Married	-,079	,135	,341	,559	,924	,079	,135	,341	,559	1,082
Living with partner	,689	,233	8,717	,003	1,991	-,689	,233	8,717	,003	,502

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Widowed	,245	,432	,321	,571	1,278	-,245	,432	,321	,571	,783
Divorced	,198	,169	1,375	,241	1,219	-,198	,169	1,375	,241	,820
No longer living together/separated (reference category)										
Current working status										
No	,030	,064	,225	,635	1,031	-,030	,064	,225	,635	,970
Yes (reference category)										
Birth order number & total children ever born			28,273	<,001				28,273	<,001	
0-4	-,375	,072	26,984	<,001	,687	,375	,072	26,984	<,001	1,455
5-9	-,602	,294	4,188	,041	,547	,602	,294	4,188	,041	1,827
10-14 (reference category)										
Constant	-1,702	,173	97,256	<,001	,182	1,702	,173	97,256	<,001	5,485

4. Discussion

The aim of this study was to examine the influence of sociodemographic and socioeconomic factors on the type of healthcare provider involved in postnatal health checks among mothers in Sierra Leone. Specifically, the objective was to determine how variables such as maternal age, region, residence (urban versus rural), education level, wealth status, marital and employment status, place of delivery, and birth order contribute to disparities in accessing professional versus non-professional maternal healthcare. By exploring these determinants, the study sought to provide a nuanced understanding of the factors associated with postnatal healthcare utilization in Sierra Leone, thereby offering evidence to guide interventions aimed at improving maternal and neonatal outcomes in Sierra Leone.

The univariate analysis revealed a predominantly young population of mothers in their prime reproductive years, with most respondents clustered in the 25–29 and 20–24 age groups. The majority resided in rural areas, and a considerable portion of the sample had little or no formal education. These baseline characteristics are important because they set the stage for understanding how demographic and socioeconomic factors might influence access to postnatal care. In this context, nurses and midwives emerged as the primary providers of postnatal health checks, aligning with global trends that highlight the critical role of mid-level healthcare professionals in maternal care [1].

The analysis of the person-involved in postnatal health checks in relation to sociodemographic and socioeconomic characteristics revealed several key trends. Across age groups, nurses and midwives dominated the provision of postnatal care, with particularly high percentages observed among mothers aged 25–29 and 35–39, while the involvement of doctors was minimal, peaking at 4.6% among mothers aged 45–49. In contrast, younger mothers (15–19) showed a greater reliance on traditional birth attendants which may reflect socioeconomic constraints or limited access to formal healthcare, a finding that aligns with the Health Belief Model's emphasis on perceived barriers. However, age had no significant relationship with the type of healthcare provider conducting the postnatal health check.

Regional disparities were also apparent. In the Northern region, most of the postnatal check-ups were conducted by nurses and midwives, with community health workers contributing less, highlighting the impact of strategic healthcare resource allocation in rural and underserved areas. This pattern is supported by the Social Ecological Model and the Cultural Health Capital Theory, which emphasize the role of community-level factors and cultural trust in shaping healthcare behaviour [8]. The type of place of residence further influenced health provider choice, with urban residents more likely to receive care from professional health providers, including a higher involvement of doctors, likely due to the concentration of government hospitals, private clinics, and comprehensive healthcare centres in urban areas [19].

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Educational attainment significantly impacted postnatal care provider selection. Mothers with higher education levels were more likely to access professional healthcare, particularly doctor-assisted care, attributable to greater health literacy, awareness, and the ability to navigate healthcare systems [20]. In contrast, lower educational attainment was associated with a higher reliance on traditional or community-based birth attendants, reflecting socioeconomic and accessibility constraints [21,22]. Wealth index status also played a critical role. Mothers in higher wealth quintiles were more likely to rely on doctors, nurses, or midwives, whereas those in lower wealth quintiles depended more on auxiliary midwives or traditional birth attendants, indicating that economic barriers significantly affect healthcare choices.

Marital status and employment status further influenced the types of healthcare providers they use. Widowed mothers predominantly received care from nurses and midwives, and although the relationship between marital status and healthcare provider was not statistically significant, the data suggested cultural preferences might steer some mothers toward traditional care. Employment status was a critical factor with employed women benefiting from greater financial resources and employer-provided health benefits, tended to access professional care, while those who were unemployed were more likely to rely on traditional birth attendants or community health workers [23].

The place of delivery emerged as one of the strongest predictors of the type of healthcare provider that women use when seeking postnatal healthcare. Mothers delivering in healthcare facilities such as hospitals or health centres were much more likely to receive postnatal care from professional providers, whereas home deliveries were associated with a higher reliance on traditional birth attendants and auxiliary midwives. This finding is consistent with global evidence indicating that facility-based deliveries enhance access to skilled postnatal care [24]. Finally, the analysis indicated that birth order significantly influenced the type of healthcare provider for postnatal healthcare. First-time mothers received more care from professional healthcare providers, while as birth order increased, particularly among mothers with 10–14 births, there was a marked shift towards traditional birth attendants. This trend may be due to increased financial and time constraints as family size grows, which in turn reduces the likelihood of accessing formal healthcare services [7,8].

The multivariate analysis provided further insights by controlling for the interplay of various factors simultaneously. The findings revealed that older women, particularly those over 30 years, were significantly more likely to receive postnatal care from professional healthcare providers, with higher odds compared to younger women. This trend may reflect increased health awareness or greater resource availability among older mothers, who are often more experienced and cautious about maternal health risks [6]. Regional differences remained robust in the multivariate model. Women from the Eastern, Northern, North-western, and Southern regions exhibited higher odds of receiving professional care compared to the Western region, underscoring substantial disparities in healthcare infrastructure across regions.

Urban residence further contributed to increased access to professional healthcare providers, as urban women had higher odds of receiving services from skilled providers compared to rural women. Additionally, the place of delivery emerged as one of the strongest predictors [25]. Mothers delivering in government or private facilities were significantly more likely to receive professional care, especially in private hospitals or clinics, where the odds were higher. Marital status also influenced care-seeking behaviour. Women living with a partner were almost twice as likely to receive postnatal care from professional care which may be attributed to additional financial and emotional support facilitating access to quality services. Conversely, birth order was inversely associated with the use of professional care. Women with fewer children were more likely to access professional services, while those with higher birth orders showed a marked reduction, suggesting that multiparous women might rely more on their previous experiences or on traditional birth attendants as an alternative.

In contrast, the multinomial logistic regression analysis for non-professional healthcare revealed an inverse relationship with many of these factors. Older age, favourable regional characteristics,

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urban residence, and facility-based deliveries were all associated with a significant reduction in the likelihood of receiving care from non-professional health providers. For instance, older women and those in regions with robust healthcare services were less likely to rely on non-professional healthcare providers, reinforcing the idea that improved access and awareness drive the use of professional healthcare [26]. Similarly, lower odds of being checked by non-professional healthcare among urban residents and facility-based births indicate that geographic and institutional factors play a critical role in shaping maternal health-seeking behaviour. Furthermore, while higher birth order increased the likelihood of non-professional care, potentially due to cumulative financial constraints or a reliance on traditional practices, women living with a partner were significantly less likely to use non-professional healthcare providers, possibly because partner support helps overcome barriers to accessing formal healthcare [27].

These findings collectively highlight substantial disparities in postnatal healthcare access that are influenced by a complex interplay of age, region, residence, wealth, place of delivery, marital status, and birth order. The trends observed in this study mirror broader global patterns, where socioeconomic and geographic factors critically determine the quality and type of maternal healthcare services accessed [1,9]. Addressing these disparities will require targeted interventions that improve healthcare infrastructure in underserved regions, promote facility-based deliveries, and enhance educational and financial support for vulnerable groups [28]. Ultimately, ensuring equitable access to professional healthcare providers for postnatal care is essential for reducing maternal and neonatal morbidity and mortality in Sierra Leone.

These findings provide essential context for understanding the disparities in postnatal healthcare utilization. The sociodemographic characteristics of respondents play a pivotal role in determining their access to and use of postnatal healthcare services.

5. Conclusions

This study examined the factors influencing postnatal health checks from professional healthcare providers on Sierra Leone's mothers. Using univariate, bivariate, and multivariate analyses, the research identified critical factors including age, region, residence type, wealth index, place of delivery, marital status, and birth order, that shape postnatal care experiences. Specifically, older mothers, urban residents, and those delivering in formal healthcare facilities were more likely to receive care from professional healthcare providers, predominantly nurses and midwives, while higher birth order and limited healthcare infrastructure increased reliance on non-professional healthcare providers.

The results revealed pronounced regional and socioeconomic disparities in access to quality postnatal care. Women in the Northern and Western regions exhibited markedly higher odds of receiving professional care compared to their counterparts in other areas. These findings have important implications for public health policy and practice. Targeted interventions such as expanding healthcare infrastructure in underserved regions, promoting facility-based deliveries, and enhancing maternal health education are essential for reducing maternal and neonatal morbidity and mortality. The World Health Organization's 2022–2025 Country Cooperation Strategy supports these priorities by focusing on maternal and newborn healthcare improvements. Hence, further longitudinal research is needed to explore the underlying causes of these disparities and inform effective policy responses.

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