

The Influence Of Socioeconomic Determinants On Perinatal Health Outcomes Among Diverse Populations

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Abstract

Background: A socioeconomic determinant of perinatal health outcomes is income, education, occupation, and access to healthcare. The variety of maternal and neonatal outcome differences based on varied populations has been caused by disparities in these factors, especially where resources are limited. **Objective:** The purpose of this study is to explore the role of socioeconomic determinants on perinatal health outcomes and to compare health outcomes of mothers and neonates between various socioeconomic groups. **Methodology:** A cross-sectional analytic study was carried out in 650 pregnant women in low, middle and high socioeconomic groups. Structured questionnaires and medical records were used to collect data. The critical outcome measures were attendance of the antenatal care (ANC), institutional birth, low neonatal morbidity, and maternal complications. Chi-square and logistic regression were used in statistical analysis and the p-value of significance was 0.05. **Findings:** The high ANC attendance (4 or more visits) was supported in the high SES (85%), middle (65%), and low SES (40%), where the scores are less than or equal to each other ($p < 0.001$). Also, institutional rates of delivery were better among high SES women (90%) as compared to low SES (45%). There was a significant difference in neonatal mortality between high SES (1.8) and low SES (7.5). **Conclusion:** The influence of socioeconomic determinants on the perinatal health outcomes is significant. To tackle inequalities by delivering specific interventions is a necessary step toward enhancing maternal and neonatal health in all populations.

Keywords: Socioeconomic determinants, perinatal health, maternal health, neonatal outcomes, health disparities, antenatal care.

1. Introduction

The availability and quality of medical services is not the only factor that influences perinatal health outcomes because other socioeconomic factors determine the health behaviors, access to services, and well-being. Income, education, occupation and living environment are socioeconomic determinants that have a significant role in influencing the maternal and neonatal outcomes within different populations [1][2]. These determinants influence nutritional status by exposing people to risks of health care-seeking behaviour, as well as environmental risk, which are all causes of disparity in perinatal health. Maternal and neonatal inequalities are one of the primary concerns of the global public health that is especially pronounced in the low- and middle-income countries (LMICs) [3]. The less wealthy women tend to have poorer antenatal care (ANC), late skill access to skilled birth attendance, and increased incidents of complications associated with pregnancy and childbirth [4]. Conversely, increased socioeconomic status (SES) has been linked to increased aversion to healthcare facilities, education, and awareness, and thus better perinatal outcomes [5]. Education, specifically, is one of the determinants that have been found to impact maternal health behaviors. Women who are educated tend to access ANC services and other healthy practices and institutional delivery services [6]. Likewise, the household income defines the capability to afford healthcare services, transition and adequate food throughout pregnancy [7]. Access to healthcare infrastructure and health risks exposure are further influenced by employment and living conditions [8]. Healthcare inequality and disparities are most prominent when it comes to marginalized and rural groups of people, as structural (including poverty, geographic isolation, and lack of healthcare facilities) and economic (including low socioeconomic status) factors continue to affect these groups [9]. Such disparities are associated with increased neonatal death rates, sub-optimal birth weights, and maternal issues among the disadvantaged population [10]. In addition, cultural norms and gender inequality are also social determinants that could further limit the autonomy

of women in making healthcare decisions [11]. This does not mean that the role of socioeconomic determinants has been fully appreciated although more analysis is still needed based on different populations since comprehension and analysis of their influence on outcomes in perinatal care is still incomplete. It is important to identify these relationships to develop targeted, equitable and evidence-based public health interventions.

1.1 Objectives

1. To determine how socioeconomic determinants impact on perinatal health outcomes.
2. To make comparisons across socioeconomic groups.
3. To ensure the identification of the socioeconomic factors influencing maternal and neonatal health.

2. Methods

2.1 Study Design

To investigate how the socioeconomic status (SES) influences the perinatal health outcomes, a cross-sectional analytical study was performed. On the basis of the standardized composite indices, childhood pelvic circumference, which includes income, education, and occupation, participants were put in three categories namely low, middle and high SES. Such a design allowed comparing health indicators in different socioeconomic levels [12].

2.2 Study Population

The participants of the study were 650 pregnant women who were recruited in urban and rural healthcare centers. Enrolment of the participants occurred during pregnancy and continued up to seven days after the birth of the infants to measure the outcomes of neonatal outcomes as indicated in table 1. The inclusion criteria were to have been resident in the study area at least a year and be willing to participate.

Table 1: Distribution of Study Population by SES

SES Group	Participants (n)	Percentage (%)
Low	220	33.8
Middle	230	35.4
High	200	30.8
Total	650	100

2.3 Variables Assessed

The major socioeconomic factors were the income level, educational status, occupation, and access to healthcare services. The choice of these variables was based on the known relationship with maternal and neonatal outcomes [13]. A single SES scale was created to categorize the respondents.

2.4 Data Collection

A mixed-method was used to collect data. Demographic and socioeconomic data were collected through structured questionnaires, and clinical data on pregnancy and neonatal outcome were collected through the medicals and presented in figure 1. The housing surveys determined the living standards and access to health care.

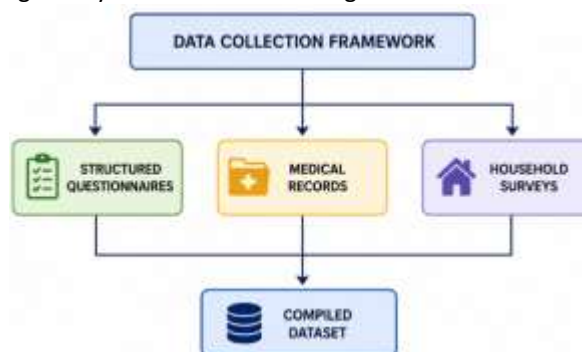


Figure 1: Data Collection Framework

2.5 Outcome Measures

Primary outcomes were as follows: antenatal care (ANC) attendance (4-plus visits), rate of institutional delivery, newborn morbidity and mortality, and maternal morbidity (neonatal anemia and hypertension) and complications in mothers (shown in table 2).

Table 2: Outcome Measures and Definitions

Outcome	Definition/Criteria
ANC Attendance	≥4 antenatal visits
Institutional Delivery	Delivery in a health facility
Neonatal Mortality	Death within 7 days postpartum
Maternal Complications	Clinically diagnosed conditions

2.6 Statistical Analysis

Statistical software was used to analyse the data. Figure 2 summarized the characteristics of participants using descriptive statistics. Associations among SES and categorical outcomes were measured with chi-square tests, and ANOVA was used to compare the means across the groups. The adverse outcome predictors were used to determine adverse outcomes using logistic regression models, taking into consideration confounding factors. Statistical significance was set at $p < 0.05$ [14][15].

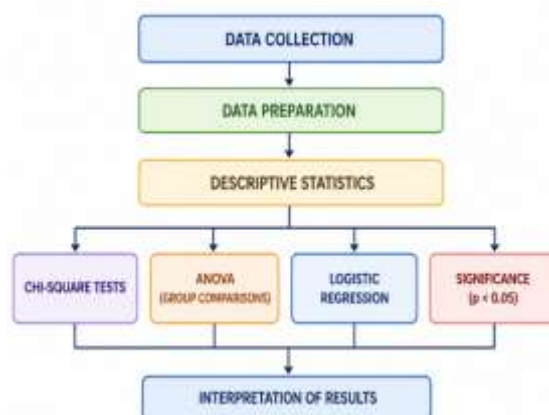


Figure 2: Analytical Approach

3. Results & Discussion

This part provides the examination of the perinatal health outcome in various socioeconomic groups. The findings illuminate a substantial disparity in the healthcare use, maternal health and neonatal outcomes according to socioeconomic status. This comparative analysis shows that better access to antenatal care and institutional delivery services is shown among higher socioeconomic group, whereas worse health problems were seen among lower socioeconomic groups. The statistical evidence substantiates the correlation between determinants of the socioeconomic status and perinatal outcomes that highlight the importance of the social and economic determinants on the health of mothers and children in various population contexts.

3.1 Participant Characteristics

The use of antenatal care (ANC) depended greatly on socioeconomic groups. The percentage of women who accomplished four or more ANC visits was higher in the high SES group (85) than in the middle (65) and the low SES group (40) indicated by table 3. The association between SES and healthcare use was high since it was statistically significant ($p < 0.001$).

Table.3. Socioeconomic Distribution of Participants

SES Group	Participants (n)	Literacy (%)	Employed (%)
Low	220	45	38
Middle	230	68	55

High	200	88	72
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3.2 Antenatal Care Utilization

Antenatal care (ANC) utilization varied significantly across socioeconomic groups. A higher proportion of women in the high SES group (85%) completed at least four ANC visits compared to the middle (65%) and low SES groups (40%) shown in table 4. The difference was statistically significant ($p < 0.001$), indicating strong association between SES and healthcare utilization.

Table.4. ANC Attendance by SES

ANC Visits ≥ 4	Low SES	Middle SES	High SES	p-value
Yes	40%	65%	85%	<0.001
No	60%	35%	15%	

3.3 Institutional Delivery Rates

There was a progressive improvement in institutional delivery rates with socioeconomic status. As seen in figure 3 females in high SES categories had higher chances of delivering in healthcare facilities when compared to middle and low SES category; as a result of better access to healthcare facilities and ability to afford healthcare services.

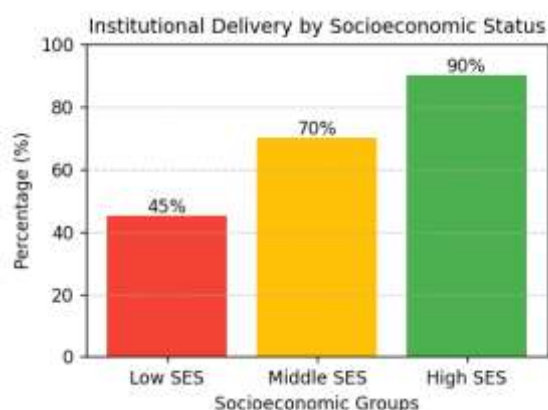


Figure.3. Institutional Delivery by SES

3.4 Neonatal Outcomes

Dojianny neonatal health care revealed a wide variation of differences in the SES groups. It is evident in table 5 that the low SES group had the highest low birth weight, mortality of infants at birth and complications, whereas the high SES group had the least. These results suggest socioeconomic factors have a direct impact on neonatal mortality and health.

Table.5. Neonatal Health Indicators by SES

Outcome	Low SES	Middle SES	High SES	p-value
Low birth weight	22%	15%	8%	0.01
Neonatal mortality	7.5%	4.2%	1.8%	0.02
Complications	20%	12%	6%	0.01

3.5 Maternal Health Outcomes

The complications in the maternal conditions tended to be more common among women in the low SES group and decreased with an increase in socioeconomic status as illustrated in figure 4. It is this trend that brings out the importance of socioeconomic factors in identifying maternal health risk and timely care access.

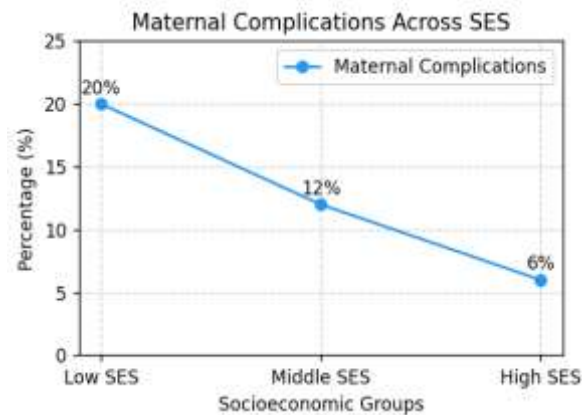


Figure.4. Maternal Complications Across SES

4. Discussion

This research shows that socioeconomic determinants are important in defining perinatal health outcomes among different populations. Women with higher socioeconomic status (SES) levels proved to show much better healthcare access with higher antenatal care (ANC) attendance and institutional delivery rates. These are factors that enable better monitoring of the mothers and access to medical care in time, which will ultimately result in better neonatal outcomes. Conversely, females in the low SES groups had lower access to healthcare services, which led to an increased number of neonatal deaths, low birth weight, and morbidity.

4.1 Key Insights

Some key insights were pointed out by the study. The issue of income and education becomes predictors of access to and use of healthcare, which determine awareness and decision-making in pregnancy. The poor SES is linked with late or insufficient care, usually because of economic issues, lack of health literacy, and access to healthcare facilities. Moreover, the socioeconomic inequalities directly affect the survival of the neonates through poor maternal care due to risk of unfavorable birth events.

4.2 Comparison with Previous Studies

These findings complement evidence on social determinants of health worldwide suggesting that social determinants are critical factors contributing to maternal and neonatal disparities. Other studies in the past also showed higher-educated and higher-income women to be more likely to seek healthcare services and have improved perinatal outcomes. This paper strengthens the necessity to manage socioeconomic disparities within larger-scale and population-wide plans of health.

4.3 Limitations

There are limitations of this research. The cross-sectional design limits the capacity to determine causal interdependencies among socioeconomic factors, and health outcomes. Also, self-reported data on socioeconomic status can lead to reporting bias. The limited time of follow-up, which is the early neonatal age only, fails to follow up the long-term maternal and child health outcomes.

5 Conclusion

This paper concludes by finding that socioeconomic factors have a strong impact on the perinatal health outcomes of different populations. Women with higher socioeconomic statuses were found to have a higher level of healthcare service utilization, such as increased attendance of antenatal care and institutional births which resulted in the improved prenatal and neonatal outcomes. Conversely, the disadvantaged socioeconomic classes had limited access to healthcare leading to increased incidences of neonatal deaths, low birth weight and maternal complications. These results emphasize that income, education and access to care (through healthcare) play a vital role in determining perinatal health. These inequities need to be addressed in order to realize fair health outcomes. The inequalities can be curtailed by strengthening the public health systems, enhancing maternal education and making the healthcare services affordable. Specific intervention targeting vulnerable communities is essential to improve healthcare access and

eventually the maternal and neonatal survival rate in underserved communities.

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