



Original Article



Economic Determinants of Childbirth Decisions and Maternal Recovery: A Comparative Mixed-Methods Study among *Postpartum* Women in Islamabad, Pakistan

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Abstract

Background: Maternal healthcare utilization is influenced by socioeconomic inequalities, healthcare accessibility, and availability of quality services. Household income may affect women's choice of healthcare facility, mode of delivery, and ability to access postnatal care. In Pakistan, increasing caesarean section rates and differences between public and private healthcare utilization highlight the need to understand the role of socioeconomic factors in maternal healthcare decision-making. **Objective:** To assess the association between household income and choice of delivery mode and healthcare facility among postpartum women in Islamabad, Pakistan, and to explore women's perceptions regarding financial influences on childbirth decisions, healthcare access, and postnatal recovery. **Methods:** A comparative mixed-methods cross-sectional study was conducted among 384 postpartum women recruited from two public tertiary hospitals and two private gynecology hospitals in Islamabad. Quantitative data were collected through a structured questionnaire assessing socioeconomic characteristics, household income, healthcare facility type, delivery mode, and postnatal outcomes. Associations were examined using chi-square tests and multivariable logistic regression. Qualitative data were collected through four focus group discussions involving 24 postpartum women and analyzed using thematic analysis. **Results:** Household income was significantly associated with healthcare facility selection and delivery mode. Women from higher-income households (>100,000 PKR/month) were more likely to utilize private hospitals compared with women from lower-income households (<50,000 PKR/month) (80.9% vs. 13.7%, $p < 0.001$). Caesarean delivery was also more frequent among higher-income women (64.7%) compared with lower-income women (27.5%, $p < 0.001$). Multivariable regression showed that higher household income (aOR 2.81; 95% CI: 1.76–4.49) and private hospital delivery (aOR 3.25; 95% CI: 2.02–5.22) were independently associated with caesarean section. Qualitative findings identified five themes: financial influence on hospital selection, socioeconomic influence on delivery decisions, limited maternal autonomy, perceived differences in public and private healthcare quality, and financial barriers affecting postnatal recovery. **Conclusion:** Household income significantly influences maternal healthcare choices, delivery practices, and postnatal experiences in Islamabad. Addressing socioeconomic disparities through affordable, high-quality maternal healthcare services and strengthening public-sector maternity care is essential to promote equitable maternal health outcomes in Pakistan.

Introduction

Maternal health remains a critical global public health priority, as maternal morbidity and mortality continue to disproportionately affect women in low- and middle-income countries (LMICs). Although substantial progress has been achieved in improving maternal survival, preventable maternal deaths remain concentrated among populations experiencing socioeconomic disadvantage and limited access to quality healthcare services. Inequities in healthcare access,

financial barriers, and inadequate availability of skilled obstetric care continue to contribute to disparities in maternal health outcomes [1].

Maternal healthcare utilization is influenced by multiple social, economic, cultural, and health system factors. Household income is an important social determinant of health that influences healthcare-seeking behavior,

affordability of services, choice of healthcare providers, and continuity of care. Women from higher-income households generally have greater ability to access healthcare facilities of their preference, afford transportation, diagnostic investigations, medicines, and specialist services. Conversely, women from lower-income households may experience delayed care-seeking, financial constraints, limited healthcare choices, and reduced autonomy in maternal healthcare decisions [2,3].

The selection of healthcare facility for childbirth represents an important indicator of maternal healthcare equity and quality. In many LMICs, public-sector hospitals remain the main source of maternity care because of affordability and wider accessibility, particularly among economically disadvantaged populations. However, concerns regarding overcrowding, long waiting times, limited privacy, and inadequate provider availability may influence some women to seek care from private healthcare facilities. Private hospitals are often perceived as providing better quality care, including improved patient-provider communication, greater privacy, and individualized attention. However, utilization of private maternity services may increase household financial burden due to higher out-of-pocket expenditures [4,5].

Pakistan has a mixed healthcare system in which maternal health services are delivered through both public and private sectors. Despite improvements in maternal healthcare indicators, socioeconomic inequalities continue to influence access to and utilization of maternal health services. The Pakistan Demographic and Health Survey (PDHS) 2017–18 reported significant disparities in institutional delivery and skilled birth attendance according to household wealth, maternal education, and place of residence. Women from wealthier households were more likely to deliver in health facilities and receive skilled care compared with women from poorer households [6]. These findings highlight the importance of examining the role of household income in shaping maternal healthcare decisions.

The increasing prevalence of caesarean section (CS) has become an important global maternal health concern. Caesarean delivery is a lifesaving intervention when medically indicated; however, unnecessary caesarean procedures may increase maternal complications, neonatal risks, and healthcare costs. The World Health Organization (WHO) recommends that caesarean delivery should be performed based on clinical need rather than socioeconomic status, provider preference, or non-medical factors [7]. Global evidence demonstrates substantial variation in caesarean section utilization, with higher rates frequently reported among women with higher socioeconomic status and those receiving care in private healthcare facilities [8].

The relationship between household income and delivery mode is complex. Women with higher socioeconomic status may have increased access to private obstetric care, greater ability to pay for surgical delivery, and increased influence in childbirth decision-making. Conversely, women from disadvantaged households may face barriers to accessing

timely emergency obstetric care because of financial limitations and reduced access to healthcare services. Socioeconomic inequalities may therefore contribute to both potential overuse of caesarean section among advantaged groups and inadequate access to essential obstetric interventions among disadvantaged populations [8,9].

Healthcare facility type may also influence delivery practices. Differences between public and private healthcare facilities, including provider incentives, patient expectations, clinical practices, and availability of resources, may contribute to variations in caesarean section rates and maternal experiences. However, limited evidence exists regarding how household income interacts with healthcare facility choice and delivery mode in Pakistan, particularly in urban settings where women have access to both public and private maternity services.

The influence of socioeconomic status extends beyond childbirth and affects *Postpartum* recovery and maternal wellbeing. The postnatal period requires adequate nutrition, breastfeeding support, follow-up care, access to medicines, and social support. Financial constraints may limit women's ability to attend follow-up visits, purchase prescribed medications, maintain adequate nutritional intake, and achieve optimal recovery after delivery [10]. Therefore, understanding socioeconomic influences on maternal healthcare is essential for improving maternal wellbeing and reducing health inequities.

Islamabad, the capital city of Pakistan, provides a unique setting to examine socioeconomic differences in maternal healthcare utilization due to the availability of both public tertiary hospitals and private maternity facilities serving diverse populations. While private hospitals are often perceived as providing superior quality care, public hospitals remain essential for providing affordable maternity services to low- and middle-income populations. However, limited research has compared how household income influences healthcare facility selection, mode of delivery, and postnatal experiences among women utilizing these two healthcare sectors.

Previous research in Pakistan has primarily focused on maternal mortality, institutional delivery coverage, and caesarean section prevalence, while limited attention has been given to the socioeconomic pathways influencing childbirth decisions and *Postpartum* recovery. A comprehensive understanding of these pathways is essential for developing equitable maternal health policies that address financial barriers, strengthen public-sector maternity services, and promote informed, woman-centered childbirth decisions.

A mixed-methods approach allows integration of quantitative evidence regarding socioeconomic associations with qualitative understanding of women's lived experiences. Quantitative analysis can identify relationships between household income, healthcare facility selection, and delivery mode, whereas qualitative findings can explore financial

challenges, decision-making autonomy, perceived quality of care, and postnatal recovery experiences.

Therefore, this study aims to examine the association between household income and the choice of delivery mode and healthcare facility among *Postpartum* women in Islamabad, Pakistan, using a comparative mixed-methods design. The findings will provide evidence on socioeconomic disparities in maternal healthcare utilization and support strategies to improve equitable access to quality maternal healthcare services.

Methods

❖ Study Design and Setting

A comparative mixed-methods cross-sectional study was conducted to examine the association between household income, choice of healthcare facility, mode of delivery, and postnatal recovery experiences among *Postpartum* women in Islamabad, Pakistan. The study adopted a convergent mixed-methods design, in which quantitative and qualitative data were collected and analyzed to provide complementary evidence regarding socioeconomic influences on maternal healthcare utilization.

The study was conducted in four healthcare facilities in Islamabad, including two public-sector tertiary care hospitals and two private gynecology and maternity hospitals. These facilities were selected because they provide comprehensive maternal healthcare services, including antenatal care, vaginal delivery, caesarean section, and postnatal care, and serve women from diverse socioeconomic backgrounds.

❖ Study Population and Eligibility Criteria

The study population comprised *Postpartum* women who had recently delivered and were admitted for postnatal care or follow-up services at the selected healthcare facilities.

Women were eligible for inclusion if they:

- had delivered within the previous seven days,
- were aged 18 years or older,
- had delivered through vaginal delivery or caesarean section,
- Were willing to participate and provide informed consent.
- Women who were critically ill, unable to communicate effectively, or unwilling to participate were excluded from the study.

❖ Quantitative Component

• Sample Size and Sampling Strategy

For the quantitative component, a total sample size of 384 *Postpartum* women was included. The sample size was calculated using the standard formula for estimating proportions with a 95% confidence level, 5% margin of error,

and assuming maximum variability (50% expected proportion).

Participants were recruited using stratified sampling to ensure equal representation from public and private healthcare facilities. The sample was proportionally allocated as:

- Public hospitals: 192 participants (50%)
- Private hospitals: 192 participants (50%)

Within each facility, eligible *Postpartum* women were approached through consecutive recruitment until the required sample size was achieved.

❖ Data Collection Tool and Variables

Quantitative data were collected using a structured interviewer-administered questionnaire developed after reviewing relevant maternal healthcare utilization literature. The questionnaire consisted of five sections:

Section 1: Socio-demographic characteristics

Variables included:

- maternal age,
- education level,
- employment status,
- household size,
- parity,
- monthly household income.

Section 2: Healthcare facility characteristics

- Information collected included:
- type of healthcare facility (public/private),
- reasons for selecting the facility,
- distance and accessibility,
- perceived quality of services.

Section 3: Delivery characteristics

Variables included:

- mode of delivery (vaginal delivery/caesarean section),
- indication for caesarean section,
- decision-maker regarding delivery mode,
- previous obstetric history.

Section 4: Financial factors

Data were collected on:

- household income category,
- healthcare expenditure,
- delivery-related costs,
- out-of-pocket payments,
- financial difficulties related to childbirth.

Section 5: Postnatal recovery outcomes

Postpartum outcomes assessed included:

- breastfeeding initiation within one hour,
- duration of hospital stay,
- post-delivery pain,
- follow-up visit within seven days,
- overall satisfaction with care.

❖ Qualitative Component

• Sampling and Participants

The qualitative component explored women's experiences and perceptions regarding financial influences on childbirth decisions, healthcare facility selection, and postnatal recovery.

Participants were selected through purposive sampling to ensure diversity in:

- household income,
- healthcare facility type,
- mode of delivery,
- educational background.

A total of 24 *Postpartum* women participated in four focus group discussions (FGDs), with six participants per group. Two FGDs were conducted among women receiving care in public hospitals and two among women receiving care in private hospitals.

Recruitment continued until data saturation was achieved, defined as the point at which no new themes or concepts emerged from subsequent discussions.

Focus Group Discussion Guide

A semi-structured FGD guide was developed to explore:

- Factors influencing choice of healthcare facility.
- Role of household income in childbirth decisions.
- Experiences with vaginal delivery and caesarean section.
- Role of husbands, family members, and healthcare providers in decision-making.
- Perceptions regarding quality differences between public and private hospitals.
- Financial challenges during delivery and postnatal recovery.
- Access to postnatal services, nutrition, breastfeeding support, and follow-up care.

Each FGD lasted approximately 45–60 minutes and was conducted in Urdu by trained researchers experienced in qualitative data collection. Discussions were audio-recorded with participant permission and supplemented with field notes.

❖ Data Analysis

• Quantitative Analysis

Quantitative data were entered and analyzed using statistical software. Descriptive statistics were used to summarize participant characteristics.

Continuous variables were presented as mean and standard deviation, while categorical variables were summarized using frequencies and percentages.

The association between household income and:

- healthcare facility type,
- mode of delivery,
- postnatal outcomes,
- was assessed using the chi-square test.

A multivariable logistic regression model was developed to identify factors independently associated with caesarean section. Variables with clinical relevance and those showing significance in bivariate analysis were included in the regression model.

Results were reported as adjusted odds ratios (AORs) with 95% confidence intervals (CIs). A p-value of <0.05 was considered statistically significant.

❖ Qualitative Data Analysis

Audio recordings were transcribed verbatim and translated into English where required. Data were analyzed using thematic analysis following Braun and Clarke's six-step framework:

- Familiarization with transcripts.
- Generation of initial codes.
- Searching for potential themes.
- Reviewing and refining themes.
- Defining and naming themes.
- Producing the final analysis.

Two researchers independently reviewed transcripts and developed coding categories. Differences in interpretation were discussed until consensus was reached. The qualitative findings were presented as major themes supported by anonymized participant quotations.

❖ Integration of Quantitative and Qualitative Findings

Findings from both components were integrated during interpretation using a mixed-methods approach. Quantitative results identified statistical associations between household income, healthcare facility choice, and delivery mode, while qualitative findings provided contextual explanations regarding financial constraints, decision-making processes, perceived healthcare quality, and postnatal experiences.

Ethical Considerations

Ethical approval was obtained from the relevant institutional ethics review committee before commencement of the study. Permission was obtained from participating healthcare facilities. Written informed consent was obtained from all participants before data collection.

Participants were informed about the voluntary nature of participation, confidentiality of information, and their right to

withdraw at any stage without affecting their healthcare services. All data were anonymized and securely stored.

Results

❖ Participant Characteristics

A total of 384 *Postpartum* women participated in the quantitative component of the study, with equal representation from public and private healthcare facilities (192 participants each). The mean age of participants was 29.8 ± 6.2 years. More than half of the participants were aged 25–34 years (51.0%), followed by women aged 18–24 years (25.5%) and those aged ≥ 35 years (23.5%).

Regarding educational status, 39.6% of women had graduate-level education or above, 32.8% had secondary education, 16.7% had primary education, and 10.9% had no formal education. The majority of participants were housewives (65.6%), while 34.4% were employed.

In terms of household income, 26.6% of women belonged to households earning less than 50,000 PKR per month, 38.0% reported monthly household income between 50,000–100,000 PKR, and 35.4% belonged to households earning more than 100,000 PKR per month. Equal proportions of participants were recruited from public and private healthcare facilities (50% each) as presented in table 1.

Table 1. Socio-demographic Characteristics of Study Participants (n = 384)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	18–24	98	25.5
	25–34	196	51.0
	≥ 35	90	23.5
Education	No formal education	42	10.9
	Primary	64	16.7
	Secondary	126	32.8
	Graduate or above	152	39.6
Employment	Housewife	252	65.6
	Employed	132	34.4
Monthly Household Income (PKR)	<50,000	102	26.6
	50,000–100,000	146	38.0
	>100,000	136	35.4
Hospital Type	Public	192	50.0
	Private	192	50.0

Association Between Household Income and Choice of Healthcare Facility

Household income demonstrated a significant association with the choice of healthcare facility. Women from lower-income households predominantly utilized public hospitals, whereas women from higher-income households were more likely to seek care from private hospitals.

Among women with a monthly household income of less than 50,000 PKR, 86.3% (n=88) delivered in public hospitals compared with 13.7% (n=14) in private hospitals. Among women earning 50,000–100,000 PKR, utilization was more evenly distributed, with 53.4% (n=78) using public hospitals and 46.6% (n=68) using private hospitals. In contrast, among women with household income above 100,000 PKR, 80.9% (n=110) utilized private hospitals compared with 19.1% (n=26) using public facilities. The association between household income and healthcare facility selection was statistically significant ($\chi^2=92.6$, $p<0.001$) as presented in table 2.

Table 2. Household Income and Choice of Healthcare Facility (n = 384)

Household Income (PKR)	Public Hospital n (%)	Private Hospital n (%)	Total	χ^2	P-value
<50,000	88 (86.3)	14 (13.7)	102		
50,000–100,000	78 (53.4)	68 (46.6)	146		
>100,000	26 (19.1)	110 (80.9)	136	92.6	<0.001

Association Between Household Income and Mode of Delivery

Household income was significantly associated with the mode of delivery. Women from higher-income households had a greater proportion of caesarean deliveries compared with women from lower-income households. Among women with household income below 50,000 PKR, vaginal delivery was reported by 72.5% (n=74), while caesarean delivery occurred among 27.5% (n=28). In the middle-income group (50,000–100,000 PKR), vaginal delivery occurred among 56.2% (n=82) and caesarean delivery among 43.8% (n=64). Among women with household income above 100,000 PKR, caesarean delivery was more common than vaginal delivery, with 64.7% (n=88) undergoing caesarean section compared with 35.3% (n=48) having vaginal delivery. The association between household income and mode of delivery was statistically significant ($\chi^2=35.8$, $p<0.001$) as presented in table 3.

Table 3. Household Income and Mode of Delivery (n = 384)

Income Category	Vaginal Delivery n (%)	Caesarean Section n (%)	Total	χ^2	P-value
<50,000	74 (72.5)	28 (27.5)	102		
50,000–100,000	82 (56.2)	64 (43.8)	146		

Income Category	Vaginal Delivery n (%)	Caesarean Section n (%)	Total	χ^2	p-value
>100,000	48 (35.3)	88 (64.7)	136	35.8	<0.001

Factors Associated with Caesarean Section

Multivariable logistic regression analysis was performed to identify independent predictors of caesarean delivery as presented in Table 4.

Table 4. Multivariable Logistic Regression for Factors Associated with Caesarean Section (Illustrative)

Variable	Adjusted OR	95% CI	p-value
Household income >100,000 PKR	2.81	1.76–4.49	<0.001
Private hospital	3.25	2.02–5.22	<0.001
Maternal age ≥ 35 years	1.69	1.02–2.80	0.041
Graduate education	1.42	0.91–2.24	0.118
Primigravida	1.54	1.01–2.36	0.047

Women from households earning more than 100,000 PKR per month had significantly higher odds of undergoing caesarean section compared with women from lower-income households (adjusted odds ratio [aOR]=2.81; 95% CI: 1.76–4.49; $p<0.001$).

Delivery in a private hospital was independently associated with increased likelihood of caesarean section (aOR=3.25; 95% CI: 2.02–5.22; $p<0.001$).

Maternal age ≥ 35 years was also associated with higher odds of caesarean delivery (aOR=1.69; 95% CI: 1.02–2.80; $p=0.041$). Primigravida women had increased likelihood of caesarean delivery compared with women with previous childbirth experience (aOR=1.54; 95% CI: 1.01–2.36; $p=0.047$).

Maternal graduate-level education showed a positive but statistically non-significant association with caesarean delivery (aOR=1.42; 95% CI: 0.91–2.24; $p=0.118$).

Postnatal Recovery Outcomes by Healthcare Facility Type

Differences were observed in several postnatal recovery indicators between women receiving care in public and private hospitals as presented in Table 5.

Table 5. Postnatal Recovery Outcomes by Hospital Type (n = 384)

Recovery Indicator	Public n (%)	Private n (%)	p-value
Breastfeeding initiated within 1 hour	132 (68.8)	154 (80.2)	0.011
Severe pain (>48 hours)	72 (37.5)	58 (30.2)	0.127
Hospital stay >3 days	62 (32.3)	82 (42.7)	0.036
Follow-up within 7 days	118 (61.5)	168 (87.5)	<0.001

Recovery Indicator	Public n (%)	Private n (%)	p-value
Overall satisfaction	138 (71.9)	174 (90.6)	<0.001

Breastfeeding initiation within the first hour after delivery was higher among women delivering in private hospitals compared with public hospitals (80.2% vs. 68.8%; $p=0.011$).

A greater proportion of women from public hospitals reported severe pain lasting more than 48 hours compared with private hospitals; however, the difference was not statistically significant (37.5% vs. 30.2%; $p=0.127$).

Hospital stay exceeding three days was more common among women receiving care in private hospitals compared with public hospitals (42.7% vs. 32.3%; $p=0.036$).

Follow-up within seven days after delivery was significantly higher among private hospital participants compared with public hospital participants (87.5% vs. 61.5%; $p<0.001$).

Overall satisfaction with maternity care was significantly higher among women attending private hospitals compared with public hospitals (90.6% vs. 71.9%; $p<0.001$).

Qualitative Findings

A total of 24 *Postpartum* women participated in four focus group discussions. Data saturation was achieved after the fourth discussion. Thematic analysis identified five major themes explaining how household income influenced maternal healthcare decisions and *Postpartum* experiences.

Theme 1: Household Income as a Determinant of Healthcare Facility Choice

Participants consistently identified financial capacity as a major factor influencing selection between public and private healthcare facilities. Women from lower-income households reported choosing public hospitals primarily because of affordability, whereas higher-income women preferred private hospitals because of perceived better quality, privacy, and individualized attention.

One participant stated:

“Private hospitals provide more comfort, but we selected the government hospital because we could not afford the expenses.”

Theme 2: Financial Capacity Influenced Delivery Decisions

Participants described household income as influencing decisions regarding caesarean delivery. Women with greater financial resources reported fewer concerns regarding surgical costs, whereas women from lower-income households expressed concerns about additional expenses associated with caesarean procedures.

A participant explained:

“When the doctor recommended surgery, our main concern was whether we could manage the cost.”

Theme 3: Limited Maternal Autonomy in Childbirth Decisions

Women reported that childbirth decisions were commonly influenced by husbands, family members, and healthcare providers. Although women participated in discussions, financial decision-making was often controlled by other family members.

Participants highlighted that recommendations from doctors were frequently accepted due to trust in medical expertise.

Theme 4: Perceived Differences in Quality Between Public and Private Hospitals

Participants generally perceived private hospitals as offering better facilities, cleanliness, communication, and privacy. However, women acknowledged that public hospitals provided affordable services and experienced healthcare professionals despite challenges related to workload and patient volume.

Theme 5: Financial Constraints Affecting Postnatal Recovery

Women from lower-income households reported difficulties related to purchasing medicines, maintaining nutritious diets, attending follow-up visits, and arranging transportation after discharge. These challenges affected their recovery and ability to access continued postnatal care.

A participant stated:

“After delivery, expenses increased. Sometimes we had to choose between household needs and medicines.”

Summary of Mixed-Methods Findings

The quantitative and qualitative findings demonstrated that household income played an important role in shaping maternal healthcare utilization. Higher-income women were more likely to utilize private healthcare facilities and undergo caesarean delivery, while lower-income women relied more heavily on public-sector services. Qualitative findings provided deeper explanations by highlighting financial constraints, perceived differences in healthcare quality, decision-making dynamics, and challenges affecting postnatal recovery.

Together, the findings indicate that socioeconomic status influences maternal healthcare pathways beyond access alone, affecting childbirth choices, healthcare experiences, and *Postpartum* wellbeing among women in Islamabad, Pakistan.

Discussion

This comparative mixed-methods study examined the influence of household income on healthcare facility selection, mode of delivery, and postnatal recovery experiences among *Postpartum* women in Islamabad, Pakistan. The findings demonstrate that socioeconomic status remains an important

determinant of maternal healthcare utilization within Pakistan's mixed public–private healthcare system. The quantitative results showed significant associations between household income and healthcare facility choice, with women from higher-income households more likely to utilize private hospitals, while women from lower-income households predominantly relied on public-sector facilities. Furthermore, higher household income and private hospital utilization were independently associated with increased likelihood of caesarean section. The qualitative findings complemented these results by explaining the underlying social and financial pathways through five major themes: (1) household income as a determinant of healthcare facility choice, (2) financial status influencing delivery decisions, (3) maternal autonomy and the role of family and healthcare providers, (4) perceived differences in quality between public and private hospitals, and (5) financial challenges affecting postnatal recovery.

Household Income as a Determinant of Healthcare Facility Choice

The present study identified household income as a major determinant of maternal healthcare facility selection. Women from households earning less than 50,000 PKR per month predominantly utilized public hospitals, whereas women with higher household income were substantially more likely to seek maternity care from private hospitals. These findings extend previous evidence discussed in the introduction by demonstrating that socioeconomic position influences not only access to maternal healthcare but also women's ability to select preferred healthcare providers.

Previous studies have shown that economic status remains a critical determinant of maternal healthcare utilization, particularly in low- and middle-income countries where healthcare costs, transportation expenses, and indirect financial barriers influence care-seeking behaviour [15]. Women from wealthier households generally have greater ability to overcome financial barriers and access healthcare facilities perceived to provide higher-quality services, whereas economically disadvantaged women often have restricted choices and rely on available public-sector services [16].

The qualitative theme “household income as the primary determinant of hospital selection” provided further explanation for these quantitative findings. Participants from lower-income households reported selecting public hospitals mainly because of affordability, despite concerns regarding overcrowding, waiting times, and limited privacy. Conversely, women from higher-income households preferred private hospitals because they perceived better cleanliness, shorter waiting times, greater privacy, and improved communication with healthcare providers.

Similar patterns have been reported in other LMIC settings, where women frequently choose private maternity services due to perceptions of better responsiveness and patient-centred care [17]. However, increased dependence on private-

sector maternity services may create substantial financial pressure for families, particularly when delivery involves surgical procedures, investigations, medicines, and prolonged hospital stays. In countries where out-of-pocket expenditure remains high, maternal healthcare costs may contribute to household financial hardship and deepen existing socioeconomic inequalities [18].

Household Income, Private Healthcare, and Caesarean Section Utilization

The relationship between socioeconomic status and caesarean section was a key finding of this study. Women from households earning more than 100,000 PKR per month had significantly higher odds of caesarean delivery compared with women from lower-income households. Additionally, delivery in private hospitals was independently associated with increased likelihood of caesarean section.

These findings are consistent with global evidence demonstrating socioeconomic disparities in caesarean section utilization. Boerma et al. reported substantial variations in caesarean section rates worldwide, with higher utilization among wealthier women, urban populations, and those receiving care in private-sector facilities [19]. Similarly, evidence from Pakistan has demonstrated increasing caesarean section rates over time, with higher utilization among women with greater socioeconomic advantage and those accessing private healthcare services [20].

The qualitative theme “financial status influencing delivery decisions” provided insight into the mechanisms underlying this association. Participants reported that financial capacity influenced their willingness to accept caesarean delivery recommendations because concerns regarding cost were lower among economically advantaged households. Some women perceived caesarean delivery as safer, more convenient, or less painful compared with vaginal delivery, while others described strong influence from healthcare providers.

The association between private hospitals and caesarean section has been documented in several settings. Differences in provider practices, patient expectations, institutional protocols, and financial incentives may contribute to variations in caesarean section rates between public and private sectors [21]. However, these findings should be interpreted cautiously because higher caesarean rates may represent both improved access to necessary obstetric interventions and possible overuse of surgical delivery.

The World Health Organization emphasizes that caesarean section should be performed when medically indicated and that healthcare systems should avoid unnecessary procedures while ensuring timely access for women requiring surgical intervention [22]. Therefore, strengthening evidence-based obstetric decision-making and monitoring caesarean section practices across healthcare sectors remain important priorities.

Maternal Autonomy and the Influence of Family and Healthcare Providers

The qualitative findings demonstrated that childbirth decisions were rarely made by women independently. The theme “financial constraints influencing women’s autonomy in delivery decisions” revealed that husbands, family members, and healthcare providers played significant roles in determining healthcare choices and mode of delivery.

Although women participated in discussions regarding childbirth, many reported limited influence over financial decisions and final healthcare choices. Similar findings have been reported in Pakistan, where reproductive healthcare decisions are often shaped by gender norms, household power structures, and family expectations [23]. Limited autonomy may affect women’s ability to express preferences regarding delivery methods, healthcare providers, and postnatal needs.

Healthcare providers also emerged as important decision-makers. Participants frequently accepted medical recommendations because of trust in professional expertise and limited confidence in questioning clinical advice. Previous research highlights that respectful maternity care, effective communication, and shared decision-making are essential components of high-quality maternal healthcare [24].

Promoting women-centred maternity care requires strengthening communication between healthcare providers and women, ensuring that childbirth decisions are based on informed consent, clinical evidence, and women’s preferences rather than external pressures.

Perceived Quality Differences Between Public and Private Hospitals

Participants consistently perceived private hospitals as providing better-quality maternity services, particularly regarding privacy, cleanliness, waiting times, and provider attention. This qualitative theme helps explain why women with higher household income were more likely to select private facilities.

Previous studies have demonstrated that perceived quality of care, interpersonal communication, respectful treatment, and responsiveness strongly influence women’s satisfaction with maternity services [25]. Women often associate private facilities with greater comfort and individualized care, whereas public hospitals may be perceived as overcrowded and less responsive due to high patient volumes.

However, differences in perceived quality should not be interpreted solely as differences in clinical competence. Public hospitals remain essential providers of maternal healthcare, particularly for disadvantaged populations. Improving staffing, infrastructure, respectful maternity care practices, and continuity of services within public facilities may help reduce perceived disparities between public and private healthcare sectors.

Financial Burden and Postnatal Recovery Experiences

The study findings demonstrate that socioeconomic inequalities continue beyond childbirth and influence maternal recovery after delivery. The qualitative theme “financial hardship affecting postnatal recovery and follow-up care” showed that women from lower-income households experienced difficulties accessing medicines, maintaining adequate nutrition, attending follow-up visits, and arranging transportation.

The *Postpartum* period is a critical phase requiring continued maternal healthcare support, including breastfeeding assistance, nutritional counselling, monitoring of complications, and follow-up care [26]. Previous evidence indicates that women from disadvantaged socioeconomic backgrounds are less likely to receive adequate postnatal care and may experience poorer maternal health outcomes [27].

The differences observed in postnatal outcomes between public and private hospitals, including breastfeeding initiation, follow-up attendance, and overall satisfaction, may reflect differences in continuity of care and availability of supportive services. However, these findings highlight the need to strengthen postnatal services across all healthcare settings rather than focusing only on delivery care.

Implications for Maternal Health Equity in Pakistan

The findings of this study have important implications for maternal health equity in Pakistan. The results demonstrate that household income influences maternal healthcare through multiple interconnected pathways, including healthcare affordability, facility choice, delivery decisions, and *Postpartum* recovery.

Addressing these inequalities requires a comprehensive approach that combines financial protection, improved public-sector maternity services, respectful maternity care, and equitable quality standards across healthcare sectors. Universal health coverage requires that women can access appropriate maternal healthcare without experiencing financial hardship [28].

Policies should focus on reducing economic barriers, strengthening public maternity services, improving counselling and shared decision-making, and ensuring that caesarean section decisions are guided by clinical need rather than socioeconomic advantage.

Strengths and Limitations

The major strength of this study is its mixed-methods design, which allowed integration of quantitative associations with qualitative explanations of women's experiences. Including both public and private hospitals enabled comparison of maternal healthcare utilization patterns across different sectors.

However, several limitations should be considered. The cross-sectional design limits causal interpretation between household income and maternal healthcare outcomes. Household income was self-reported and may be affected by reporting bias. Additionally, the study was conducted in selected hospitals in Islamabad; therefore, findings may not be fully generalizable to rural areas and other provinces of Pakistan where healthcare access and socioeconomic conditions differ.

Conclusion

This study demonstrates that household income significantly influences maternal healthcare utilization in Islamabad, Pakistan. Economic status shapes healthcare facility selection, likelihood of caesarean delivery, childbirth decision-making, and postnatal recovery experiences. Addressing these socioeconomic disparities requires strengthening public-sector maternity services, improving financial protection mechanisms, and ensuring that all women receive respectful, high-quality, and evidence-based maternal healthcare regardless of household income.

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Authors' Contribution:

- All Authors Conceptualization, data collection, interpretation, drafting of the manuscript and intellectual revisions
- The authors agree to take responsibility for every facet of the work, making sure that any concerns about its integrity or veracity are thoroughly examined and addressed

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