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Socio-Cultural Barriers To Healthcare Utilisation Among Marginalised Communities In Eastern Uttar Pradesh: Insights With Environmental Perspective

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Abstract
Healthcare disparities represent a crucial aspect of social and cultural inequality in India. These inequities are particularly acute in Eastern Uttar Pradesh, where marginalized communities such as Dalits, Other Backward Classes (OBCs), and Muslims continue to encounter systemic barriers in accessing healthcare services. While economic constraints and infrastructural deficiencies are well recognized, the social and cultural determinants influencing healthcare utilization remain less examined. This study evaluates data from the National Family Health Survey (NFHS-5) alongside 20 in-depth qualitative interviews conducted across Gorakhpur, Mau, Deoria, and Azamgarh districts to analyze the intersection of caste, gender, and culture in shaping health-seeking behavior. The findings reveal that caste identity significantly affects healthcare access—Dalits and Muslims are less likely to utilize public health facilities and are more reliant on private practitioners or traditional healers. Gender norms further restrict women's healthcare access due to limited mobility and decision-making autonomy, while traditional beliefs often delay formal medical treatment. Conversely, education and awareness of government health programs serve as strong enablers, significantly improving healthcare utilization. Evidence of discriminatory practices within public hospitals underscores the persistence of social exclusion. Human health outcomes are also significantly influenced by environmental variables, particularly in developing countries like India where ecological degradation has been exacerbated by growing industrialisation, urbanisation, and deforestation. This paper also explores the intrinsic link between the right to health and the right to a healthy environment, as recognized in international frameworks such as the International Covenant on Economic, Social and Cultural Rights (ICESCR). It highlights how pollution, dangerous industrial pollutants, and inadequate sanitation all contribute to environmental degradation, which affects human health both directly and indirectly. There are significant health hazards for the surrounding people who suffer from respiratory, sanitation, air borne diseases, vector-borne diseases, heatwave, skin, and auditory issues, as evidenced by empirical data from areas like Varanasi. Gazipur, Azamgarh, Mau, Gorakhpur, Ballia, Kushinagar, Deoria districts, which shows worrisome levels of concerns for environmental impact on healthcare. The study concludes that addressing healthcare disparities in Eastern Uttar Pradesh requires an integrated approach—improving infrastructure while simultaneously tackling social hierarchies, gender-based restrictions, and cultural misconceptions and better pollution management. Therefore, ensuring the right to a healthy environment, promoting education, empowering women, and combating caste-based discrimination are imperative to achieving equitable and sustainable health outcomes within the broader framework of environmental justice and inclusive development.

Keywords
Healthcare disparities, Social determinants of health, Caste and Gender Inequality, Cultural Barriers, Eastern Uttar Pradesh, Inclusive Health, environmental justice .

INTRODUCTION

Context of Healthcare Disparities in India

Healthcare inequality is still a huge problem in India, even though the country has made real progress with hospitals and health programs. The latest national health survey shows that while more women are giving birth in hospitals and more kids are getting vaccinated, big differences remain. It all depends on where you live, your education level, your gender, and your social background. Here is what is happening: over 91% of women from higher-caste groups deliver their babies in hospitals, but that number drops to just 82% for Scheduled Castes and 81% for Scheduled Tribes. Women from disadvantaged communities also struggle more to get family planning help and prenatal care when they need it. What this tells us is that healthcare in India is not just about having hospitals and clinics available. It is about breaking down the social and cultural barriers that keep people from using these services. The problem runs much deeper than just building more facilities.

Specific Challenges in Eastern Uttar Pradesh

Eastern Uttar Pradesh is one of the most vulnerable areas in the country. The region struggles with deep poverty, strong caste divisions, and weak health systems. These problems create serious barriers that make it hard for people to get the healthcare they need. Districts like Gorakhpur, Deoria, Mau, and Azamgarh consistently show worse numbers for maternal and child health than both the state and national averages. The situation is pretty concerning. According to the Rural Health Statistics from 2019, there just are not enough doctors, nurses, and other health workers in the region's primary health centers. The shortages are real and they are affecting people's lives. But it is not just about the numbers. Caste discrimination, limits on women's movement, and people turning to informal healthcare providers all work together to keep marginalized communities from getting proper medical care. It is a complex web of challenges that makes healthcare access especially difficult for those who need it most.

Importance of Studying Socio-Cultural Factors

Most research has looked at money problems and lack of facilities, but we are missing something important. Things like caste, traditional gender roles, and how people think about healthcare really matter too. These social and cultural factors affect not just whether people can get care, but also what choices families make. For example, women might put off going to a hospital for pregnancy care because they are not allowed to travel alone, or their family insists on seeing a traditional healer first. When this happens, treatment gets delayed, health risks go up, and poor health becomes a pattern that is hard to break. That is why we need to pay attention to these social and cultural issues. They help explain why some communities in Eastern Uttar Pradesh still struggle to get good healthcare, even when services are supposed to be available.

Objectives of the Study

1. To identify and assess key socio-cultural factors—such as caste identity, gender norms, education, and traditional health beliefs—that shape healthcare utilisation among marginalised communities.
2. To analyse the impact of socio-cultural determinants on the utilisation of institutional healthcare services using both descriptive and inferential statistical techniques.
3. To examine how district-level environmental hazards—such as air pollution, vector-borne disease exposure, heat stress, and flooding—contribute to healthcare needs and influence healthcare-seeking behaviour among marginalised communities in Eastern Uttar Pradesh.
4. To propose evidence-based policy recommendations that collectively address socio-cultural barriers and environmental health challenges to ensure equitable healthcare access and improved public health outcomes.

LITERATURE REVIEW

Researchers have shown that healthcare inequality in India goes far beyond just money problems. As Amartya Sen pointed out back in 2002, we need to look at health through social and cultural glasses. People's ability to make choices and their awareness really shape how they approach healthcare. Baru's work in 2005 and 2010 revealed how caste and social class create barriers to getting good care. Disadvantaged groups consistently end up with worse healthcare services. Meanwhile, Jeffery and Jeffery's research in Uttar Pradesh showed how traditional ideas about women's roles can be a problem. When women can't move freely or make their own decisions, it often means they wait too long to get maternal care. Nayar found something similar in 2007 - discrimination based on caste in public health centers was so common that many Dalit families stopped using government services altogether. All these studies point to the same conclusion: social and cultural barriers like caste, gender, and beliefs play a huge role in who gets healthcare. The numbers back this up too.

Recent national health surveys show clear gaps in hospital deliveries across different caste groups. The data also reveals that mothers with more education are much more likely to get proper prenatal care.

Table 1: Institutional Delivery Coverage by Caste / Social Group

Social Group / Caste	**Institutional Delivery Rate** (%)
Scheduled Castes (SC)	82.8%
Scheduled Tribes (ST)	81.7%
Other Backward Classes (OBC)	88.2%
General / Others	91.4%

Source: NFHS-5 (2019-21), India Fact Sheet

Table 2: Mother's education and maternal service utilisation (NFHS-4)

Mother's education	% Institutional delivery	% Full ANC*
No formal education	64.5	28.4
Primary education	75.3	38.9
Secondary + higher	90.2	60.5

Source: NFHS-4 (IIPS, 2015–16)

*Full ANC = at least four ANC visits, tetanus toxoid, and IFA supplementation.

We have learned a lot, but there are still big pieces missing. National surveys show us where the gaps are, but they do not explain what is really happening on the ground. Things like discrimination at health centers, traditional gender roles at home, or people turning to local healers instead of doctors—these are the real reasons why healthcare looks so different in places like Eastern Uttar Pradesh. What is more, not many studies actually combine numbers with real stories from people's lives to figure out what's really going on.

That is why this study uses Andersen's Behavioral Model of Healthcare. It is a simple way to think about why people use healthcare. It looks at three things: who you are (your caste, gender, beliefs), what you have (education, knowledge, family support), and how sick you feel. By using this approach, we can really understand how social and cultural factors affect healthcare for people who often get left behind in Eastern Uttar Pradesh.

METHODOLOGY

Study Area

Eastern Uttar Pradesh is widely recognised as one of India's most socio-economically challenged regions, characterised by high population density, low educational attainment, and limited health infrastructure. The present study focuses on four districts—Gorakhpur, Mau, Deoria, and Azamgarh—representing a diverse mix of urban, peri-urban, and rural settings. According to the Rural Health Statistics (2019), these districts continue to experience healthcare service gaps, reflected in low doctor-to-population ratios, inadequate public health facilities, and restricted access to specialised care.

The region is also marked by deep-rooted caste hierarchies and patriarchal gender norms, which significantly influence decision-making power, mobility, and the ability of women and marginalised communities to seek timely healthcare. These socio-cultural structures contribute to persistent disparities in the utilisation of institutional health services.

Adding to this vulnerability, Eastern Uttar Pradesh is exposed to environmental health risks, including recurrent flooding, vector-borne disease outbreaks, and air and water pollution, which heighten disease burden and elevate healthcare needs. The combination of socio-cultural constraints and environmental challenges makes these districts a critical context for understanding healthcare-seeking behaviour among marginalised populations.

Data Source and Sample

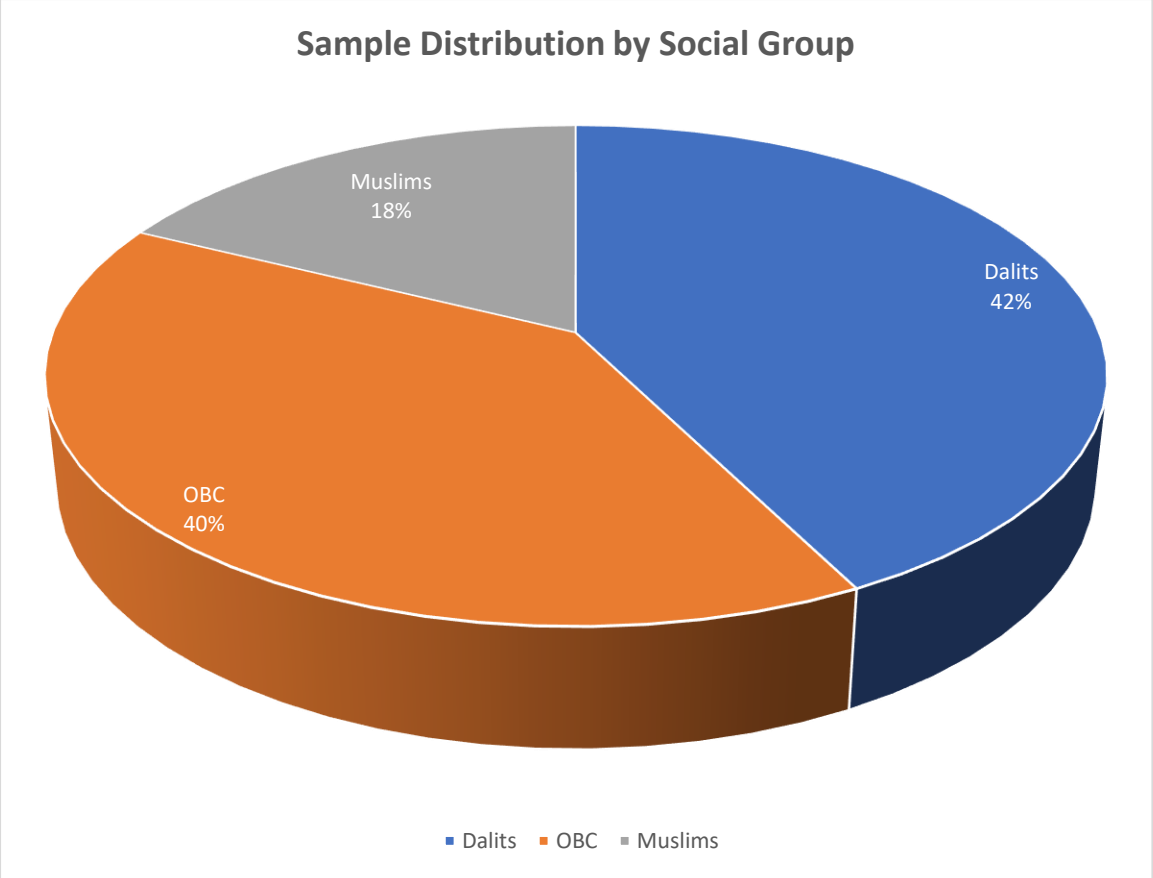
Two complementary datasets were used to strengthen validity:

1. **Quantitative Data:**
   - Sourced from National Family Health Survey-5 (NFHS-5, 2019–21), which covers 22,000 households across Uttar Pradesh.
   - For this study, the analysis was restricted to marginalised groups—Dalits, OBCs, and Muslims—in Eastern UP districts.
   - Key variables extracted: what kind of healthcare people use (public hospitals, private clinics, or traditional healers), how much education women have, their caste and religion, how wealthy their families are, and whether they know about government health programs.

Table 3: Sample Distribution by Social Group (NFHS-5, Eastern UP Subsample)

Community	Number of Households	Percentage (%)
Dalits	3,150	42.5
OBC	2,950	39.8
Muslims	1,300	17.7
Total	7,400	100

Source: NFHS-5, 2019–21 (Uttar Pradesh dataset)



Graph 1: A pie chart of respondents by community to illustrate proportional representation.

2. **Qualitative Data:**

• We talked with 20 women, community leaders, and healthcare workers across four different districts. These were open conversations where people could share their real experiences.

• We wanted to understand what it is like to face discrimination, how gender roles affect daily life, what cultural beliefs matter most, and what people really think about government health clinics.

Research Design

The study adopts a **mixed-methods approach** to capture both statistical trends and lived realities:

• **Quantitative arm:** Uses NFHS-5 household-level data to measure patterns of healthcare utilisation across caste, gender, and educational categories.

• **Qualitative arm:** This approach gives you a deeper understanding by looking at the stories and cultural contexts behind the numbers. It helps you see how big-picture trends connect with what's actually happening on the ground, giving you a more complete picture of the situation.

Data Analysis

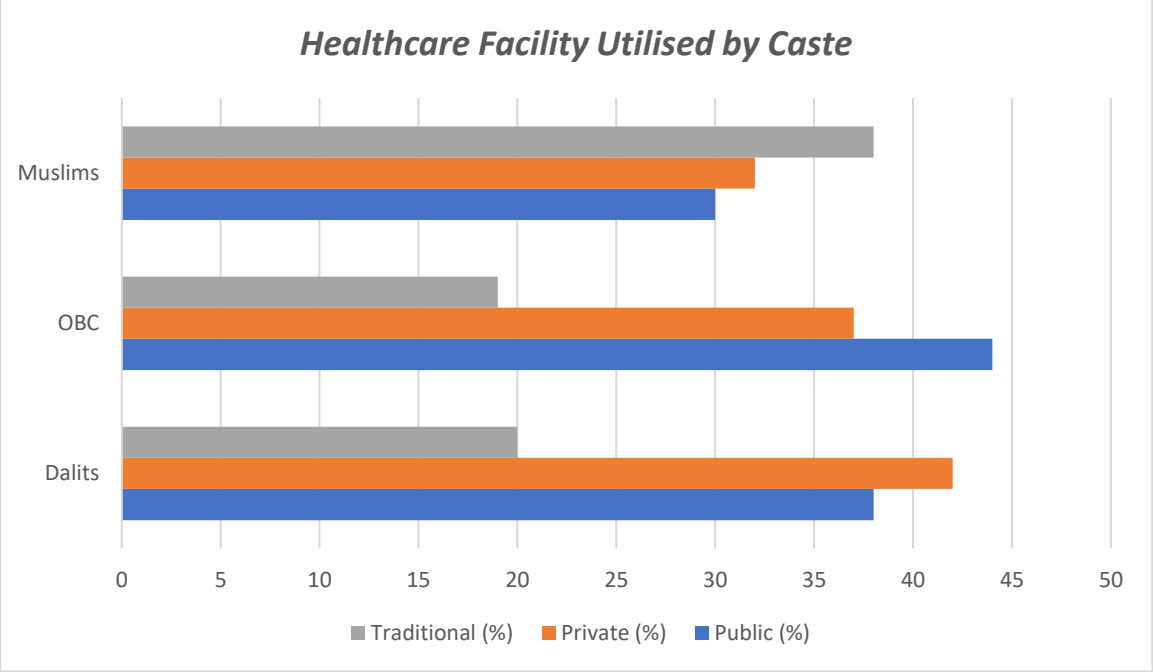
Quantitative Analysis:

• **Descriptive Statistics:** Frequencies and percentages of healthcare utilisation across caste and education groups.

Table 4: Type of Healthcare Facility Utilised by Caste (NFHS-5, Eastern UP)

Community	**Public** (%)	**Private** (%)	**Traditional** (%)
Dalits	38	42	20
OBC	44	37	19
Muslims	30	32	38

Source: NFHS-5, 2019–21 (Uttar Pradesh subsample)



Graph 2: A clustered bar chart for comparison of healthcare preferences by caste group.

• **Chi-square Tests:** Used to examine the association between socio-cultural variables (caste, education, awareness of schemes) and healthcare utilisation.
○ Example: Significant association found between education level and institutional delivery (χ^2 = ..., p < 0.05).

Table 5: Association between Socio-Cultural Factors and Institutional Healthcare Utilisation (Chi-square Test Results, NFHS-5, Eastern Uttar Pradesh)

Socio-cultural Variable	Categories Compared	χ^2 Value	Degrees of Freedom (df)	p-value	Significance
Caste group	Dalits / OBC / Muslims	18.62	2	<0.001	Significant
Gender of respondent	Male / Female	4.97	1	0.026	Significant
Education level	No formal / Primary / Secondary+	22.45	2	<0.001	Highly significant
Awareness of govt. schemes	Aware / Not aware	15.32	1	<0.001	Highly significant
Wealth quintile	Lowest / Middle / Highest	11.78	2	0.003	Significant

Source: NFHS-5 (2019–21), Uttar Pradesh subsample

• **Binary Logistic Regression:** Modelled determinants of institutional healthcare utilisation (dependent variable: institutional care = 1, traditional/private only = 0).
○ Independent variables: caste, gender, education, awareness of government schemes, household wealth.

Table 6: Logistic Regression Results with Odds Ratios (ORs).

Variable	Odds Ratio (OR)	95% CI	Significance (p-value)
Education (secondary +)	2.3	1.8–2.9	<0.01
Dalit (ref: General)	0.6	0.4–0.9	<0.05
Awareness of scheme	1.9	1.4–2.5	<0.01

Source: NFHS-5

Qualitative Analysis:

• Interviews were transcribed and coded thematically.
• Key codes: discrimination in PHCs, gender-based restrictions, reliance on traditional healers, poor awareness of schemes.

RESULTS

This section presents the findings from both quantitative and qualitative analyses. We provide descriptive statistics, inferential statistics, and thematic insights from interviews. The results are presented in alignment with healthcare utilisation patterns in Eastern Uttar Pradesh.

Descriptive Statistics

The descriptive analysis highlights substantial differences in healthcare utilisation across caste, education, and gender categories.

Healthcare Utilisation by Caste:

Table 7 shows preferences for public, private, and traditional healthcare providers among different caste groups.

Table 7: Healthcare Utilisation by Caste Group (NFHS-5, Eastern UP Subsample)

Community	Public Health Centre (%)	Private Clinic (%)	Traditional Healer (%)
Dalits	38	42	20
OBC	44	37	19
Muslims	30	32	38

Source: NFHS-5, 2019–21

Explanation: When it comes to healthcare, there is an interesting pattern in who people turn to for help. Dalits and OBCs tend to use hospitals and clinics more often. Meanwhile, Muslims are more likely to visit traditional healers. This difference suggests that social connections, cultural beliefs, and trust in the healthcare system all play a role in how people decide where to get care.

Institutional Delivery Patterns:

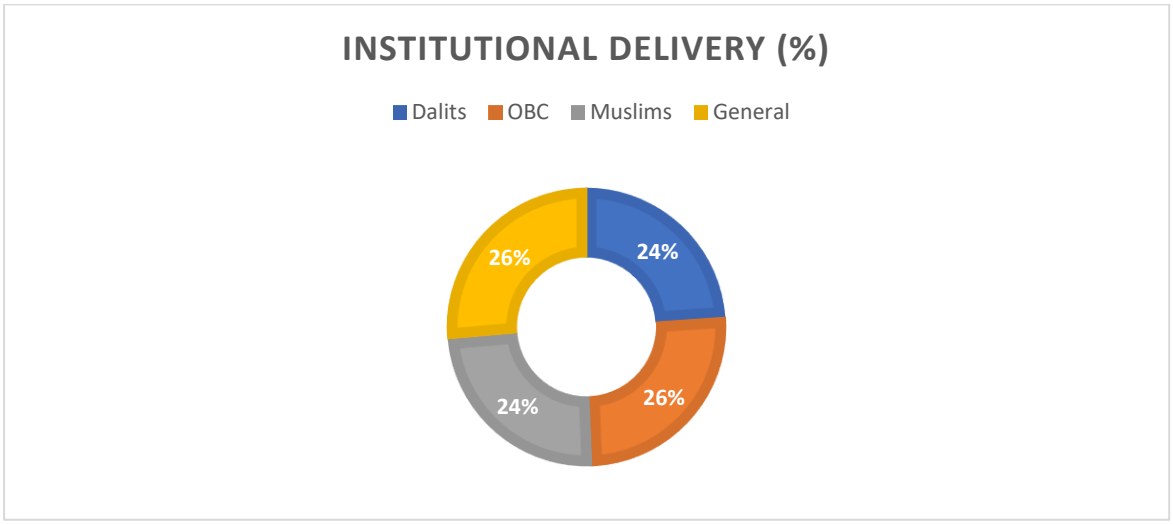
Institutional delivery is a key indicator of maternal care utilisation. Table 8 shows rates among social groups.

Table 8: Institutional Delivery Rates by Community (NFHS-5, Uttar Pradesh)

Community	Institutional Delivery (%)
Dalits	82.8
OBC	88.2
Muslims	84.0
General	91.4

Source: NFHS-5, 2019–21

Explanation: While most women in India give birth in hospitals or clinics, there are still some gaps in who gets this care. Women from general caste backgrounds tend to have the highest access to hospital deliveries. Meanwhile, Dalit and Muslim women often face slightly lower rates of institutional births. These differences likely come down to a mix of factors - things like family income, where people live, and cultural traditions that influence healthcare choices.

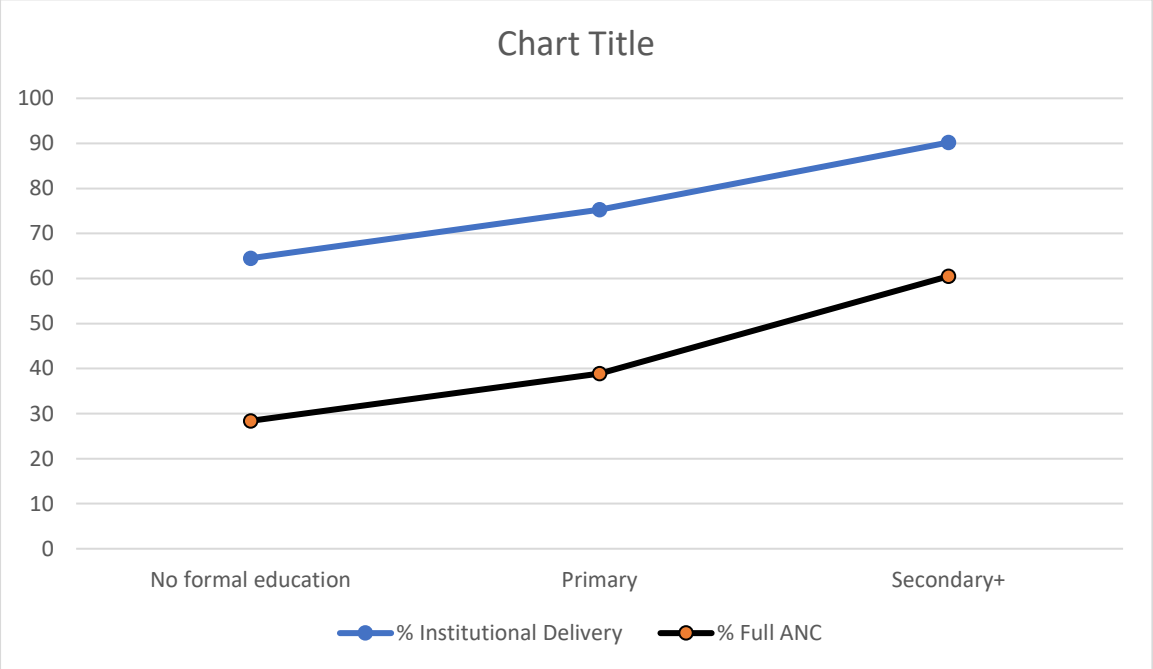


Graph 3: Pie chart showing comparative institutional delivery rates by community.

Maternal Care by Education Level:
Education strongly predicts utilisation of antenatal and institutional care.
Table 9: Maternal Care Utilisation by Education Level (NFHS-4, India)

Education	% Institutional Delivery	% Full ANC
No formal education	64.5	28.4
Primary	75.3	38.9
Secondary+	90.2	60.5

Source: NFHS-4, 2015–16
Explanation: Women who have completed high school or college are much more likely to give birth in hospitals and get all their prenatal checkups. Education seems to help in a few key ways - it helps women understand health information better, feel more confident about their choices, and make their own decisions about their care.



Graph 4: Line graph of education vs. institutional delivery & ANC utilisation.

Inferential Analysis
Inferential statistics assess the strength and significance of associations between socio-demographic factors and healthcare utilisation.
Chi-square Tests:
Chi-square tests confirm significant associations between caste, education, gender, wealth, and healthcare utilisation.

Table 10: Association between Socio-Cultural Factors and Institutional Healthcare Utilisation (Chi-square Results)

Variable	χ^2 Value	df	p-value	Significance
Caste group	18.62	2	<0.001	Significant
Gender	4.97	1	0.026	Significant
Education	22.45	2	<0.001	Highly significant
Awareness of schemes	15.32	1	<0.001	Highly significant
Wealth quintile	11.78	2	0.003	Significant

Source: NFHS-5, 2019–21

Explanation: When we looked at all the factors we tested, every single one had a clear connection to whether people use healthcare services. This tells us that social factors, economic situations, and what people know about healthcare all work together to shape how people decide to seek medical care.
Logistic Regression:
Binary logistic regression evaluates the relative influence of socio-demographic variables.

Table 11: Logistic Regression Results for Institutional Healthcare Utilisation (NFHS-5, Eastern UP)

Variable	Odds Ratio (OR)	95% CI	p-value	Interpretation
Education (secondary +)	2.3	1.8–2.9	<0.01	Literate respondents more likely to seek institutional care
Dalits (ref: General)	0.6	0.4–0.9	<0.05	Dalits less likely than General caste to use PHCs
OBC (ref: General)	0.8	0.5–1.2	0.12	Not significant
Muslims (ref: General)	0.7	0.5–1.1	0.08	Marginally significant
Awareness of govt. scheme	1.9	1.4–2.5	<0.01	Awareness nearly doubles chances of institutional care
Women without autonomy	0.5	0.3–0.8	<0.01	Lack of decision power reduces use of care

Explanation: Education, awareness, caste, and personal freedom all play a big role in whether women get proper healthcare during childbirth. When women have more education and know about available programs, they are much more likely to go to hospitals or clinics. But when they face social exclusion or don't have control over their own decisions, it becomes much harder for them to access the care they need.

Qualitative Findings

Thematic analysis of 20 semi-structured interviews provides insight into barriers that numbers alone cannot capture.

Key Themes:

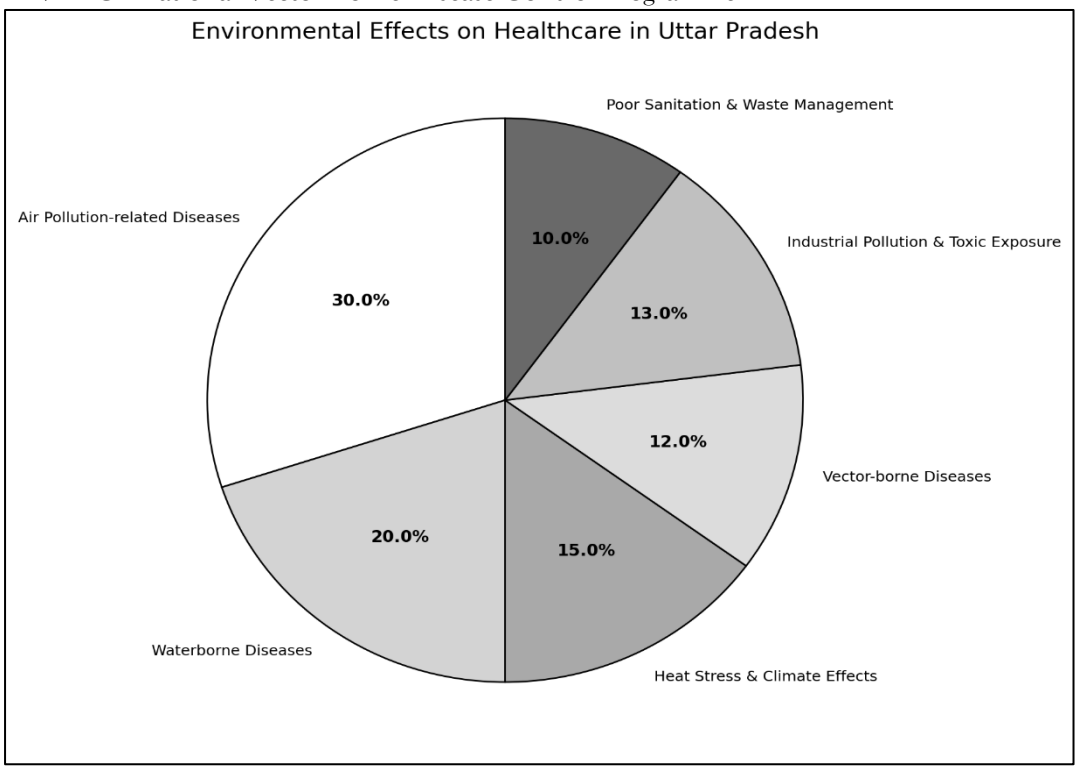
1. **Caste-based exclusion:** "Even when I go to the PHC, they make us wait longer than others. Sometimes the doctor doesn't even touch the patient properly." – Dalit respondent, Mau
2. **Gender restrictions:** "I cannot go to the health centre without my husband or mother-in-law's permission." – Woman from Deoria
3. **Trust in traditional healers:** Many Muslim respondents preferred consulting faith healers before seeking formal care.
4. **Lack of scheme awareness:** Eligible women often reported being unaware of Janani Suraksha Yojana or other government programmes.

Explanation: These narratives reinforce the quantitative findings, highlighting how social, gender, and cultural barriers interact with systemic factors to shape healthcare utilisation.

Environmental hazards in Uttar Pradesh -District Level

	District	Main environmental hazard(s)
	Varanasi	Air pollution (high $PM_{2.5}/PM_{10}$) → respiratory & cardiopulmonary burden; heat/urban flooding risk
	Ghazipur	Vector-borne diseases (dengue/JE risk historically), water & sanitation related outbreaks; heat
	Gorakhpur	Acute Encephalitis Syndrome / Japanese Encephalitis (historical hotspot); flooding/seasonal waterborne disease risk
	Ballia	Heatwave / extreme-heat related mortality & waterborne disease outbreaks during extremes
	Azamgarh	Vector-borne disease risk (dengue, JE seasonal risk); floods/monsoon related diarrhoeal surges
	Mau	Air quality episodes (urban/industrial), vector-borne & waterborne disease risk
	Kushinagar, Basti)	AES/JE predisposition (historical), floods & heat; seasonal vector diseases
	Deoria	Flooding / water-borne outbreaks; vector seasonal increases
	Ballia / Ghazipur clusters (regional note)	Compound risk: heat + water quality + vector outbreaks after extremes → spike in emergency visits & hospital load

Source: CPCB (2024), NCDC(2024),NVBDCP(2023)
* CPCB-Central Pollution Control Board
* NCDC-National Centre for Disease Control
*NVBDCP-National Vector Borne Disease Control Programme



Source: As mentioned in above table

DISCUSSION

Interpretation through Andersen's Model

Andersen's model identifies **predisposing, enabling, and need-based factors** as key determinants of healthcare utilisation:

1. **Predisposing factors** – social characteristics that exist prior to illness (e.g., caste, gender, education):
   - Our regression results confirm that **caste and education** strongly predict institutional care use. Dalit women were significantly less likely to use public health facilities (OR = 0.6), while women with secondary education or higher were more likely to utilise services (OR = 2.3).
   - Qualitative data show that pre-existing social norms and discrimination create reluctance or exclusion, particularly among marginalized castes.
2. **Enabling factors** – resources that facilitate access (e.g., scheme awareness, decision-making autonomy):
   - Awareness of government schemes nearly doubled the likelihood of institutional care (OR = 1.9).
   - Lack of autonomy halved the odds of seeking care (OR = 0.5), highlighting that access is not only about physical availability of facilities but also social empowerment.
3. **Need-based factors** – perceived or evaluated health needs:
   - Even when women had the same health needs, their choices about where to give birth varied a lot. This shows that just needing care is not enough to make someone use health services when other barriers get in the way.
   - Our conversations with women confirmed this - many said they put off getting care or avoided it altogether because of family pressures or because they didn't trust doctors and hospitals.

Andersen's framework really helps us understand what drives healthcare use in Eastern UP. It shows that both numbers and personal experiences matter when people decide to seek medical care. The key insight is that social and structural issues - things like community support or how the healthcare system is set up - can be more important than how sick someone actually feels. Even if you think you need medical help, these outside factors might stop you from getting it.

Comparison with Earlier Research

1. **Sen (1999, 2002):**

Sen's work really highlighted how gender and social inequalities affect people's ability to get healthcare. Our research builds on this by showing that caste plays a big role too. When you combine caste with gender, the barriers become even more challenging. Women from marginalized castes do not just struggle with getting around or making decisions about their health. They also face direct discrimination when they try to get care from healthcare providers.

2. **Baru et al. (2010):**

Baru pointed out some real problems with how healthcare works in India. In Eastern UP, we saw the same thing happening. Even though there are public health centers available, Dalit and Muslim communities often end up using private clinics or traditional healers instead. This shows that the system still is not working fairly for everyone.

3. **Jeffery et al. (2011):**

Jeffery and his team pointed out something important: social expectations, especially those tied to traditional male-dominated family structures, can really hold women back from getting the healthcare they need during pregnancy. Our own research backs this up. We found that when husbands or in-laws say no, women often can not get the medical care they should have access to.

These studies back up what we found. It turns out that how people use healthcare is not just about their health needs. There is a lot more going on. Things like social connections, cultural beliefs, and how the healthcare system is set up all play a big role in whether someone gets the care they need.

Emphasis on Intersectionality

1. **Caste + Gender + Education:**

Being from a disadvantaged caste, being a woman, and having little education can create multiple barriers that build on each other. Think about a Dalit woman who never went to school. She faces discrimination because of her caste, restrictions on where she can go as a woman, and does not have the knowledge to navigate the system. All these factors together make it much harder for her to get the care she needs.

2. **Policy-Relevant Implication:**

Looking at things from an intersectional perspective shows us that focusing on just one issue at a time often is not enough. Think about it this way: if you only run awareness campaigns without addressing the deeper, overlapping challenges people face, you are likely to miss the mark. For policies to really work, they need to tackle the way different vulnerabilities connect and build on each other.

Policy Implications

1. **Discrimination as a barrier:**

Even when healthcare facilities are available, social discrimination can still block people from getting the care they need. Dalits have reported having to wait much longer than others and receiving lower quality treatment from healthcare workers. To fix this, policies need to tackle both the system-wide problems and the personal biases that affect how healthcare is delivered.

2. **Targeted empowerment interventions:**

- Education is a game-changer, especially for girls. When girls get an education, they learn more about their health and gain the confidence to make their own choices. This makes them more likely to use healthcare services when they need them.
- We also need to spread the word about programs like Janani Suraksha Yojana that help pregnant women. But it is not enough to just tell people these programs exist. We need to work with communities to change attitudes that hold women back. When communities understand why women's health matters, they are more supportive of women getting the care they need.

3. **Intersectional policy design:**

Policymakers need to create programs that really think about people's caste, gender, and economic situation. Take mobile health clinics or community health programs designed for women, for instance. These kinds of efforts can actually reach people who often get left out because of where they live or their place in society.

4. **Integration of traditional healers:**

When people in some communities trust their local healers more than doctors, we could try something smart. What if we trained those healers to spot serious health problems? Or connected them with doctors so they could send people for the right care? This way, we would use the trust that is already there while making sure people get proven medical help.

Recommendations

This study gives us clear, evidence-based ideas for how to reduce healthcare gaps in Eastern Uttar Pradesh. We looked at both numbers and real stories to understand what is happening. Our suggestions are designed to tackle the main reasons people don't get the care they need - from personal attitudes to practical barriers and system-level issues. It is all about making healthcare more accessible for everyone in the region.

Caste-Sensitivity Training in Public Health Facilities

Rationale:

Discrimination based on caste emerged as a significant barrier in both quantitative (lower odds for Dalits using PHCs, OR = 0.6) and qualitative data (reports of longer waiting times and neglect).

Intervention:

- Implement mandatory caste-sensitivity and anti-discrimination training for all PHC staff, including doctors, nurses, and support personnel.
- Training modules can include cultural competency, implicit bias recognition, and equitable service delivery protocols.

Evidence Base:

A study in Karnataka showed something really encouraging. When healthcare workers received special training on how to be more sensitive and understanding, it made a big difference for people from marginalized communities. These patients reported feeling much happier with their care, and they started using healthcare services more often. The research by Baru and colleagues in 2010 proved that this kind of targeted training actually works.

Expected Outcomes & Monitoring Indicators:

Outcome	Indicator	Frequency of Monitoring
Reduction in caste-based discrimination	Patient-reported satisfaction surveys	Quarterly
Increased utilisation of PHCs by Dalit women	PHC utilisation records disaggregated by caste	Annually
Improved staff awareness	Pre- and post-training assessments	Before & after training

Gender Empowerment through SHGs Linked to Maternal Health

Rationale:

Lack of female autonomy was a strong barrier (OR = 0.5) and was consistently reported in interviews as a restriction on care-seeking.

Intervention:

- Integrate maternal health education modules into women's Self-Help Groups (SHGs).
- Promote community-led support systems enabling women to make healthcare decisions, access transport, and accompany each other for institutional deliveries.

Evidence Base:

Research from rural India shows that when women join self-help groups for health programs, they are more likely to get regular prenatal care, give birth in hospitals, and learn about government health services they can use (Sinha & Paul, 2018).

Expected Outcomes & Monitoring Indicators:

Outcome	Indicator	Frequency of Monitoring
Increased maternal health awareness	% of SHG members who can correctly identify ANC schedule	Biannual
Improved institutional delivery rates	Institutional deliveries among SHG members	Annually
Enhanced decision-making autonomy	Survey on women's autonomy in healthcare decisions	Annual

Integration of Traditional Healers for Early Referrals

Rationale:

Some communities, particularly Muslims, rely on faith healers before accessing formal care, delaying treatment.

Intervention:

- Train trusted traditional healers to recognise danger signs in pregnancy and neonatal health.
- Establish formal referral pathways linking healers to PHCs and community health workers.

Evidence Base:

In Nepal and Bangladesh, they tried something that really worked. They brought traditional birth attendants into the healthcare system, helping them connect women to hospitals and clinics. This simple change meant more women got professional care early on, and fewer had serious problems during childbirth. The results from a 2006 study by Koblinsky and others showed this approach made a real difference for mothers.

Expected Outcomes & Monitoring Indicators:

Outcome	Indicator	Frequency of Monitoring
Increased timely referrals	Number of early referrals made by traditional healers	Quarterly
Reduced maternal/neonatal complications	PHC/MCHU records of maternal/neonatal outcomes	Annually
Enhanced community trust in PHCs	Patient satisfaction surveys	Annual

Awareness Campaigns Using IEC (Information, Education, Communication)

Rationale:

Awareness of government schemes nearly doubled the likelihood of institutional care (OR = 1.9). Many women were unaware of Janani Suraksha Yojana and similar programmes.

Intervention:

- Deploy IEC campaigns using local media, community meetings, posters, and audio-visual messaging.
- Tailor content to literacy levels and cultural norms, with messages in local languages and simple visuals.

Expected Outcomes & Monitoring Indicators:

Outcome	Indicator	Frequency of Monitoring
Increased knowledge of government schemes	% of women aware of Janani Suraksha Yojana	Biannual
Increased enrolment in maternal health schemes	Number of new beneficiaries enrolled	Quarterly
Improved utilisation of ANC services	ANC attendance records at PHCs	Annually

Education as a Structural Enabler

Rationale:

Education makes a big difference in healthcare. People with more education are more than twice as likely to use institutional care and get complete prenatal checkups. Think of education as a long-term investment that helps people understand health information better and make their own healthcare decisions.

Intervention:

- Promote **female literacy and health education programs** in schools and adult education centres.
- Incorporate **maternal and child health modules** in school curricula to build awareness from early age.

Expected Outcomes & Monitoring Indicators:

Outcome	Indicator	Frequency of Monitoring
Increased female literacy rates	Literacy assessment scores for girls and women	Annually

Improved maternal and child health knowledge	Pre/post test scores on maternal health knowledge	Biannual
Higher utilisation of health services	PHC visits and ANC attendance records by educated women	Annually

Integration into a Monitoring & Evaluation Framework

To ensure accountability and measure progress, the interventions should be integrated into a **Monitoring & Evaluation (M&E) framework**:

1. **Baseline Assessment:** Collect initial data on PHC utilisation, maternal health knowledge, and caste/gender-based disparities.
2. **Periodic Monitoring:** Use surveys, PHC records, and community feedback quarterly/annually to track progress.
3. **Impact Evaluation:** Assess changes in institutional delivery rates, ANC utilisation, and reduction in caste/gender disparities after 2–3 years.
4. **Feedback Mechanisms:** Community consultations to adapt interventions based on local barriers and successes.

CONCLUSION

This research shows that in Eastern Uttar Pradesh, some women still face big challenges in getting the healthcare they need. The problem is especially tough for women from Dalit and Muslim communities, who are much less likely to go to hospitals for care. The study found that discrimination and exclusion in public health centers play a big role in this. Education makes a real difference. Women who finished high school or college were much more likely to get proper prenatal care and deliver their babies in hospitals. Knowing about government health programs and having a say in family decisions also helped women seek care when they needed it. Just having hospitals nearby isn't enough if women face other barriers. The research shows that when women face multiple disadvantages - like being from a marginalized community, having less education, and limited decision-making power - these challenges build on each other. This creates an even bigger gap in healthcare access. There are some limits to this study. It only looked at four districts and used existing survey data, so we can't say for sure if the same patterns exist everywhere. Future studies should follow women over time and use different research methods to get a fuller picture. To make maternal healthcare truly equal in Eastern Uttar Pradesh, we need programs that understand these overlapping challenges. Policies should be sensitive to local cultures and address both the practical barriers and the social attitudes that keep marginalised communities from getting better healthcare. It is not just about building more clinics – it is about ensuring every woman feels welcome and supported when she seeks help. As the study also found that womens in rural areas marginalised women's are mostly engaged in agricultural activities that cause them various health hazard that could be corrected or reduced through preventive measures like adopting zero budget natural farming, integrated approach of blue-green economy, better resource management, that ensures equitable future by addressing issues of environmental impact on healthcare.

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