ORIGINAL RESEARCH ARTICLE

Determinants of Gynaecological Morbidities and Treatment-Seeking Behaviour among Women in Eastern India: A Study Based on NFHS 4 And 5

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ABSTRACT

Background: Gynaecological morbidities are key components of reproductive health and contribute considerably to the disease burden among women in eastern India. Societal stigma and socio-cultural beliefs often prevent women from reporting and seeking treatment for these morbidities. The objective was to explore the scenario and associated factors of gynaecological morbidity and treatment-seeking behaviour among women in eastern India.

Methodology: The analysis is based on two rounds of National Family Health Survey (NFHS 4 and NFHS 5), including women from 15-49 years who reported or sought treatment for any gynaecological morbidity. Bivariate and binary logistic regression analysis were used to analyse regional variations and the factors associated with gynaecological morbidity treatment-seeking behaviour.

Results: The prevalence of gynaecological morbidities India increased from 25.68% in NFHS 4 to 28.74% in NFHS 5, having the highest prevalence in Bihar. Women seeking treatment increased from 35.05% to 38.16, with more preference for private healthcare facilities than the public. Socioeconomic factors like wealth index, age, age at marriage and first birth, educational attainment, working status, awareness about STI significantly influences gynaecological morbidities and treatment-seeking.

Conclusion: The findings of the study emphasised the need of awareness, health education and economic support to overcome the barriers of treatment seeking behaviour of gynaecological morbidities.

Keywords: Gynaecological morbidity, Eastern India, NFHS, Reproductive health of women, Treatment seeking behaviour

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INTRODUCTION

Reproductive health is one of the primary public health issues in India[1] and incorporates a wide range of challenges, with reproductive morbidity being a major concern. Gynaecological morbidity is an important component of reproductive morbidity, which is significant in a developing country like India where addressing these health issues are important for the improvement of overall health and wellbeing of women.[2] World Health Organization (WHO) has defined gynaecological morbidity as any condition, illness, or dysfunction of the reproductive system that is unrelated to, abortion, pregnancy, or childbirth but may be associated with sexual activity.[3] These gynaecological morbidities involve symptoms such as lower back pain, lower abdominal pain, pain during sexual activity, and itching or irritation in the vulvar area, burning sensation as prevalent symptoms.[4,5] Addressing gynaecological morbidity is difficult due to factors like women's reluctance to perceive it seriously or discuss it openly, added by issues such as illiteracy, lack of awareness, gender discrimination, and low social status.[6] Women from disadvantaged socio-economic backgrounds often lack decision-making power in healthcare, leading to underreporting and delayed treatment, thereby increasing the prevalence of gynaecological morbidity.

The National Family Health Survey (NFHS) data reveals a concerning scenario of gynaecological morbidity among Indian women.[7] Across various socioeconomic and demographic groups, the prevalence of gynaecological issues remains significant and, in many cases, has increased over time. Studies indicates that socioeconomic and cultural determinants of health like age, lack of education, sexual activeness, and low economic status are the significant factors affecting gynaecological morbidity.[8-10] These disparities in gynaecological health and treatment-seeking behaviours vary across different geographic regions and are influenced by women's perceptions of morbidity.[11,12] Women's treatment-seeking behaviours for gynaecological issues is crucial, as delayed symptom recognition and care can lead to increased disease incidence. Improving service utilization and education about symptom recognition can reduce the time between infection onset and cure, contributing to disease control. A study focusing on adolescent girls in Uttar Pradesh and Bihar, highlited that higher rate of gynaecological morbidities among SC (Scheduled Castes)/ST (Scheduled Tribes), working, and non-Hindu adolescents.[2] Another study among married women in rural West Bengal found that women tend to overlook gynaecological symptoms like frequent urination, urine leakage, and burning sensation. These issues are often neglected, and women usually opt for home remedies particularly for conditions like dysmenorrhea or abnormal discharge[9] and very few seeks medical assistance for reported gynaecological morbidities.[13] In India, factors such as social stigma, lack of privacy and knowledge, limited availability of female doctors, shyness, the financial burden of treatment, and perceptions of not needing treatment stops women from seeking medical help for gynaecological issues.[14]

Studies highlighted that treatment-seeking behaviours for gynaecological morbidity is minimal and varies across socio-economic groups.[15,2] Women in the eastern region of India are particularly vulnerable to poor reproductive health.[16] Although individual states in eastern India have been studied[17,18,2,10], however, a comprehensive analysis of gynaecological morbidities and treatment-seeking behaviour using NFHS 4 and NFHS 5 datasets is lacking. The specific aim of this study is to assess the prevalence of gynecological morbidities and analyze treatment-seeking behavior among women in eastern India using data from NFHS 4 and NFHS 5. Additionally, to identify the socio-economic risk factors influencing both the occurrence of gynecological morbidities and the patterns of treatment-seeking behavior in this region.

METHODOLOGY

Data Source: The study utilizes data from two rounds of the NFHS, 2015-16 (NFHS 4) and 2019-21 (NFHS 5).[19,20] NFHS is a cross-sectional household survey conducted across all states and union territories of India. In both NFHS 4 and NFHS 5, a stratified, multistage cluster sampling approach was used. The Primary sample Units (PSUs), which included Census Enumeration Blocks (CEBs) in urban areas and villages in rural regions, were chosen using the sample frame from the 2011 Census. In order to assure sufficient sampling, PSUs less than 40 households were connected to the closest PSUs. Villages were selected from the sampling frame in rural strata using a probability proportional to size (PPS) method.[19,20] It provides national and state-level estimates of fertility, family planning, and reproductive, maternal, and child health. Women's questionnaire has been used for the analysis. The women's questionnaire provides data from all eligible women aged 15-49 years, covering background characteristics, reproductive health and family planning, maternal and child health, marriage, and sexual activity.

Approval of Institutional Ethical Review Board: The study used a secondary data set that is NFHS data round four and five. The NFHS survey's ethical requirements and essential criteria were authorized by the ICF Institutional Review Board and the International Institute for Population Sciences (IIPS) Institutional Review Board. The U.S. Centres for Disease Control and Prevention (CDC) reviewed the protocol. In compliance with Human Subjects Protection rules, the organizations in charge of gathering data from field surveys received prior informed consent from eligible respondents (both verbal and written) for interviews. The survey procedures were all carried out in compliance with applicable rules and guidelines issued by the Indian Council of Medical Research

(ICMR). Informed consent was gathered from the respondents to adhere to the ethical criteria. Further ethical clearance was not needed, as the surveys were conducted following ethical clearance from the concerned organization. Anyone can access the data upon requesting. Therefore, approval from intuitional review board was not required as the dataset is publicly available from DHS portal and no human/ animal participation directly.

Study Population: The NFHS divides India into six geographical areas. This study has focussed on the eastern region of India which includes four states- Bihar, Odisha, Jharkhand, and West Bengal. The study has considered women in the reproductive age group aged 15-49 years who have reported at least one of three specific gynaecological morbidity conditions. The analytical dataset includes 15,186 women from NFHS 4 and 15,247 women from NFHS 5.

Outcome Variables: This analysis considered two outcome variables: whether one had any gynaecological morbidity; and whether one sought treatment for any gynaecological morbidity. The explanatory variable had any gynaecological morbidity considered three conditions. In both NFHS and NFHS 5 asked three questions related to gynaecological morbidities. This includes- having diseases been contracted through sexual contact during last 12 years, any genital sore or ulcers in the last 12 years and during the last 12 months had any bad-smelling abnormal genital discharge.[19,20] Responses were coded as 1 for "yes" if the respondent reported any issues, and 0 for "no" if they did not report any. To understand treatment-seeking behaviour a follow up questioned was asked further to women reporting at least one gynaecological morbidity in NFHS 4 and NFHS 5 about whether they sought any treatment for it. Then a multiple-choice question was asked regarding the type of facilities the respondents took treatment. Information on treatment or advice for reported symptoms was gathered based on the health facilities respondents visited. It was categorised into public, private, and other facility. Public facilities include AYUSH doctors, government hospitals, health centres, family planning clinics, mobile clinics, government field workers, and school-based clinics. Private facilities included private hospitals, clinics, pharmacies, and health workers. Other treatment seeking facilities comprised non-government organizations, treatment at home, correctional facilities, and other similar establishments.

Predictor Variables: Predictor variables used in the study includes socioeconomic and reproductive characteristics of women. This includes place of residence (rural and urban), the age of the respondent (15-24, 25-34, ≥ 35), caste (SC, ST, OBC and others), religion (Hindu, Muslim and others), age at marriage (≤18, 19-24, 25-30, ≥ 31), wealth index (poorest, poorer, middle, richer, richest), age at first birth (≤18, 19-24, 25-30, ≥ 31), age at menarche (≤12, 13-15, ≥ 16, educational attainment (no education, primary, secondary, higher), working status (yes and no), menstrual hygiene practices (unhygienic practices, hygienic practices, using both hygienic and unhygienic), birth order (1,2, ≥3), toilet facility (improved toilet facility, not-improved toilet facility, no toilet facility /open defecation), awareness about Sexually Transmitted Infections (STI) (Yes, No), media exposure (not exposed, regular exposure)

Statistical analysis: The prevalence of gynaecological morbidity and treatment-seeking was analysed based on above mentioned self-reported responses. Percentage distribution was used to understand the percentage of women reporting any gynaecological morbidity and their treatment seeking behaviour. Bivariate analysis was used to understand the prevalence and the influence of socio-economic factors on gynaecological morbidity and treatment-seeking behaviour among women in eastern India. The analysis incorporated national individual sample weights. Given that the outcome variables were dichotomous, binary logistic regression was adopted to assess the impact and association of socioeconomic-demographic factors on gynaecological morbidity and treatment-seeking. Binary logistic regression analysis has been used to understand how different socio-economic factors are associated with gynaecological morbidities and their treatment seeking behaviour. This study uses the STATA 16 version[21] for analysing data.

RESULTS

Regional variations in gynaecological morbidities & treatment seeking behaviour in Eastern India

Figure1 highlights an overall increase in gynaecological morbidity in eastern India, rising from 25.68% in NFHS 4 to 28.74% in NFHS 5. In eastern India, the highest gynaecological morbidities were found in Bihar in both NFHS 4 (32.53%) and NFHS 5 (36.67%). This could be due to the insufficient healthcare facilities and services, particularly in rural areas. Often resulting in underdiagnosis and untreated gynaecological disorders. Bihar has one of the highest fertility rates in India making it more vulnerable to gynaecological issues. Jharkhand also experienced a significant increase, with morbidity rates increasing from 19.81% to 24.22%. Gynaecological morbidity showed a moderate increase from 21.36% to 22.83% in West Bengal. In contrast, women in Odisha observed a slight decrease in gynaecological morbidity, from 14.06% to 12.47%, suggesting some improvement in women's health conditions The proportion of women seeking treatment for gynaecological issues increased over the two survey periods across eastern India, with the overall percentage rising from 35.02% in NFHS 4 to 38.16% in NFHS 5. In Jharkhand the treatment-seeking behaviour increased significantly from 29.01% to 40.71. The treatment-seeking behaviour increased in Odisha from 29.31% to 43.34%, despite a decrease in morbidity indicating enhanced healthcare service delivery and possibly better health literacy among women.

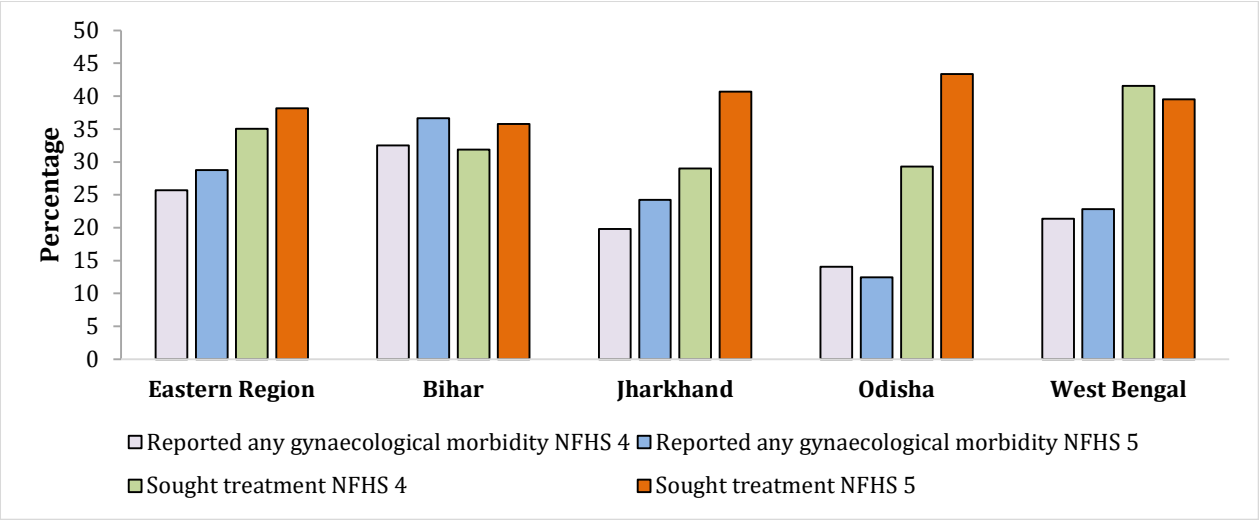

Figure 1: Prevalence of reported any gynaecological morbidity and treatment seeking behaviour in eastern India based on NFHS 4 and NFHS 5

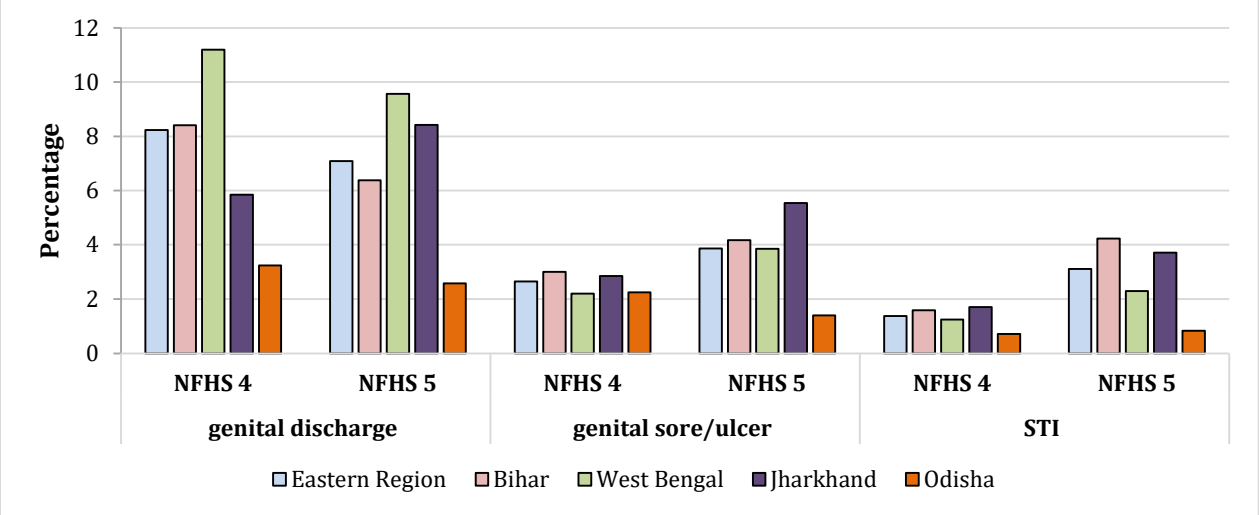

Figure 2: Prevalence of specific gynaecological morbidities in eastern India in NFHS 4 and NFHS 5

Table 1: Proportion women seeking treatment for gynaecological morbidities by various sectors, based on NFHS 4 and NFHS 5

State/Region	Public		Private		Others	
	NFHS 4	NFHS 5	NFHS 4	NFHS 5	NFHS 4	NFHS 5
Eastern Region	10.84	14.1	22.25	24.54	2.7	1.11
Bihar	8.66	11.37	22.79	25.74	1.19	0.76
Jharkhand	2.85	22.21	21	20.8	6.25	0.97
Odisha	17.86	22.67	7.95	22.64	4.05	0.82
West Bengal	14.34	13.52	24.5	24.58	3.38	1.63

Note: Data is in percentage; Source: Data analysed using NFHS 4 and NFHS 5

Prevalence of specific gynaecological morbidities in eastern India

Figure 2 shows a multiple-bar diagram highlighting specific gynaecological morbidities in eastern India. Out of the three gynaecological morbidities, genital discharge was most reported followed by genital sore and STI in the last 12 months. The prevalence of genital discharge decreased in the eastern region from 8.23% in NFHS 4 to 7.09% in NFHS 5, with Bihar and West Bengal reporting decreasing prevalence, while Jharkhand experienced an increase. This decrease in prevalence in some states could be attributed to improved awareness and healthcare interventions targeting reproductive health. The prevalence of STIs increased in the eastern region (from 1.37% to 3.11%), with Bihar and Jharkhand having the most significant increases, indicating a pressing need for enhanced sexual health education, improved healthcare access, and robust STI prevention programs.

Table 2: Prevalence and association of gynaecological morbidity according to socio-economic characteristics in eastern India in NFHS 4 and NFHS 5

Socio-economic characteristics	Reported any gynaecological morbidity			
	NFHS 4 (%)	NFHS 5 (%)	95% CI (NFHS 4)	95% CI (NFHS 5)
Age group (In years)				
15-24	6.97	7.33	®	®
25-34	20.99	21.54	2.23 (1.99-2.45)***	2.17 (1.94-1.23)***
≥ 35	33.04	37.21	2.55 (2.28-2.84)***	2.57 (2.30-2.88)***
Caste				
SC	23.66	28.61	®	®
ST	16.69	18.77	0.64 (0.57-0.72)***	0.65 (0.58-0.73)***
OBC	29.5	33.66	1.04 (0.96-1.21)	1.12 (1.04-1.20)***
Others	24.31	24.51	1.12 (1.01-1.23)**	0.88 (0.79-0.98)**
Religion				
Hindu	25.75	29.85	®	®
Muslim	26.64	25.69	1.10 (1.01-1.20)*	1.15 (1.06-1.26)***
Others	16.43	12.88	0.92 (0.78-1.08)	0.89 (0.75-1.07)
Place of residence				
Urban	22.9	22	®	®
Rural	26.33	30.36	1.28 (1.17-1.40)***	1.32 (1.19-1.45)***
Educational status				
No education	30.27	36.07	®	®
Primary	26.35	29.08	0.93 (0.85-1.02)*	0.97 (0.89-1.05)
Secondary	19.75	20.34	0.73 (0.67-0.79)***	0.79 (0.73-0.86)***
Higher	9.84	11.41	0.52 (0.42-0.64)***	0.45 (0.36-0.56)***
Wealth Index				
Poorest	25.1	28.26	®	®
Poorer	26.96	30.19	1.23 (1.14-1.32)***	1.13 (1.05-1.23)***
Middle	25.96	30.85	1.19 (1.07-1.33)***	1.35 (1.22-1.48)***
Richer	26.08	26.63	1.26 (1.09-1.46)***	1.28 (1.12-1.47)***
Richest	21.94	21.25	1.09 (0.89-1.32)	1.29 (1.06-1.59)**
Working status				
No	13.21	12.99	®	®
Yes	13.2	15.42	0.95 (0.88-1.02)	1.07 (0.99-1.15)*
Toilet Facility				
Improved toilet facility	25.35	28.28	®	®
Not-improved toilet facility	26.53	27.34	1.76 (1.04-1.29)***	1.13 (1.04-1.***
No toilet facility /open defecation	25.7	30.38	0.97 (0.89-1.06)	1.02 (0.95-1.10)
Media exposure				
Not Exposed	28.28	31.24	®	®
Regular exposure	23.1	24.11	0.79 (0.74-0.86)***	0.84 (0.78-0.90)***
Birth Order				
1	24.48	27.20	®	®
2	27.30	30.07	1.19 (0.94-1.51)*	1.16 (0.92-1.47)
≥3	32.06	36.43	1.84 (1.32-2.57)***	1.35 (0.93-1.96)*
Age at marriage (in years)				
≤18	30.67	33.92	®	®
19-24	26.71	30.06	0.71 (0.67-0.75)***	0.62 (0.58-0.66)***
25-30	23	24.08	0.69 (0.60-0.81)***	0.69 (0.58-0.82)***
≥ 31	26.94	21.90	0.60 (0.37-1)**	1.47 (0.94-2.30)***
Age at menarche (in years)				
≤ 12	7.05	8.07	®	®
13-15	7.06	7.22	1.02 (0.80-1.32)	1.16 (0.88-1.52)
≥ 16	5.49	5.16	0.97 (0.47-2.03)	1.45 (0.68-3.09)
Age of women at 1st birth (in years)				
≤18	35.14	36.09	®	®
19-24	28.65	32.2	0.89 (0.85-0.93)***	0.92 (0.87-0.95)***
25-30	25.41	29.04	0.82 (0.74-0.90)***	0.84 (0.76-0.93)***
≥ 31	21.45	22.76	1.09 (0.84-1.40)	0.56 (0.40-0.77)***
Menstrual Hygiene				
Unhygienic Practices	8.87	9.05	®	®
Hygienic Practices	4.75	5.21	0.78 (0.55-1.09)*	0.86 (0.66-.10)
Using both hygienic and unhygienic	3.67	8.56	0.70 (0.50-.97)**	0.90 (0.70-1.16)
Awareness about STI				
Yes	13.18	14.10	®	®
No	13.26	10.97	0.95 (0.89-1.02)	1.59 (1.46-1.74)***

®- Reference category; Note: ***p<0.01, **p<0.05, *p<0.10 level of significance
Source: Authors calculated from NFHS 4 and NFHS 5 data

Table 3: Prevalence and association of treatment seeking behaviour for gynaecological morbidities by socio-economic characteristics in eastern India in NFHS 4 and NFHS

Socio-economic characteristics	Sought treatment for gynaecological morbidity			
	NFHS 4 (%)	NFHS 5 (%)	95% CI (NFHS 4)	95% CI (NFHS 5)
Age group (In years)				
15-24	30.86	34.41	®	®
25-34	36.47	39.57	1.40 (1.11-1.78)***	1.27 (1-1.60)**
≥ 35	36.47	38.10	1.52 (1.2-1.02)***	1.39 (1.10-1.76)***
Caste				
SC	34.74	38.13	®	®
ST	30.60	41.69	0.71 (0.55-0.93)***	1.22 (0.96-1.55)*
OBC	33.41	37.43	1 (0.84-1.20)	1.05 (0.89-1.25)
Others	38.57	38.17	0.96 (0.78-1.18)	0.92 (0.74-1.15)
Religion				
Hindu	35.09	37.76	®	®
Muslim	34.67	39.25	0.97 (0.80-1.18)	1.07 (0.89-1.29)
Others	35.94	39.58	0.60 (0.40-0.88)***	0.76 (0.52-1.10)*
Place of residence				
Urban	37.79	39.03	®	®
Rural	34.49	37.99	0.99 (0.80-1.22)	1.05 (0.98-1.31)
Educational status				
No education	27.45	36.01	®	®
Primary	47.69	33.57	1.51 (1.24-1.85)***	0.90 (0.74-1.10)
Secondary	41.48	43.01	1.53 (1.26-1.86)***	1.09 (0.91-1.29)
Higher	40.39	43.90	0.93 (058-1.49)	1 (0.65-1.54)
Wealth Index				
Poorest	29.08	33.44	®	®
Poorer	32.84	42.84	1.16 (0.96-1.38)*	1.15 (0.96-1.37)*
Middle	50.40	43.59	1.53 (1.19-1.97)***	1.01 (0.81-1.26)
Richer	43.15	38.40	1.36 (0.97-1.90)*	1.07 (0.73-1.47)
Richest	38.30	39.37	1.23 (0.87-1.94)	0.85 (0.55-1.34)
Working status				
No	34.62	37.48	®	®
Yes	36.47	40.19	1.07 (0.91-1.27)	1.14 (0.98-1.33)*
Toilet Facility				
Improved toilet facility	40.61	42.58	®	®
Not-improved toilet facility	40.53	34.39	1.15 (1.11-1.79)***	0.78 (0.66-0.94)***
No toilet facility /open defecation	30.15	34.02	0.83 (0.68-1.02)*	0.79 (0.66-0.94)***
Media exposure				
Not Exposed	31.92	34.13	®	®
Regular exposure	38.38	45.67	0.94 (79-1.12)	1.40 (1.19-1.65)***
Birth Order				
1	35.05	40.16	®	®
2	35.68	37.73	1 (0.59-1.70)	1.17 (0.92-1.47)
≥ 3	34.76	36.14	0.88 (0.41-1.90)	1.35 (0.93-1.96)*
Age at marriage (in years)				
≤18	35.90	37.29	®	®
19-24	35.33	41.83	0.93 (0.77-1.12)	1.16 (0.96-1.39)*
25-30	12.39	31.36	0.59 (0.33-1.06)*	1.49 (0.85-2.62)*
≥ 31	45.99	11.49	1.58 (0.34-7.44)	0.31 (0.06-1.53)*
Age at menarche (in years)				
≤ 12	22.63	57.35	®	®
13-15	34.68	28.09	1.05 (6-.1.84)	1.16 (0.88-1.52)
≥ 16	14.23	13.47	0.89 (0.16-5.05)	1.45 (0.68-3.09)
Age of women at 1st birth (in years)				
≤18	38.48	37.59	®	®
19-24	33.42	40.58	0.85 (0.73-0.99)*	1.10 (0.95-1.28)
25-30	27.59	31.34	0.58 (0.42-0.82)***	0.68 (0.47-0.99)**
≥ 31	26.59	30.31	0.69 (0.28-1.67)	0.62 (0.23-1.68)
Menstrual Hygiene				
Unhygienic Practices	32.17	25.67	®	®
Hygienic Practices	28.58	28.29	0.61 (0.6-1.84)	0.86 (0.66-1.10)
Using both hygienic and unhygienic	25.99	49.45	0.57 (0.26-1.28)*	0.90 (0.70-1.16)
Awareness about STI				
Yes	37.84	38.52	®	®
No	30.02	35.83	1.26 (1.08-1.48)***	1.34 (1.08-1.68)**

Source: Authors calculated from NFHS 4 and NFHS 5 data

Variations in seeking treatment for gynaecological morbidities based on healthcare facilities

The utilization of public and private healthcare services varied significantly across the eastern region. Table 1 shows, in the eastern region, there was an increase in the percentage of women seeking treatment in both public (from 10.84% to 14.1%) and private sectors (from 22.25% to 24.54%) from NFHS 4 to NFHS 5. In Odisha there had been substantial rise in the use of private services (from 7.95% to 22.64%), while utilization of public services increased from 17.86% to 22.67%. While, the use of public healthcare services increased from 2.85% to22.21% in Jharkhand.

Prevalence and association of gynaecological morbidity across various socio-economic characteristics

Table 2 depicts the prevalence of gynaecological morbidity varies across various socio-economic. The age of women is an important factor influencing gynaecological morbidities and was significantly associated with it.[29] Gynaecological morbidity increases with women's age, women belonging to ≥ 35 years age group showing the highest rise from 33.04% in NFHS 4 to 37.21% in NFHS 5. Women belonging to the age group ≥ 35 years had higher odds of gynaecological morbidity (OR 2.55, 95% CI: 2.28, 2.84) as compared to 15–19 years age group in NFHS 4. Women belonging to the Other Backward Castes (OBC) category have higher percentage of gynaecological morbidity, with an increase in percentage observed from NFHS 4 (29.5%) to NFHS 5 (33.66%). Analysis from table 2 reveals that gynaecological morbidities decrease with higher educational attainment and wealth index. Illiterate and less educated women were affected by gynaecological morbidities due to limited access to information and awareness regarding these conditions. Having access to toilets and menstrual hygienic practices influences the gynaecological morbidities among women in eastern India. Women belonging to birth order three or more have higher odds (OR 1.15, 95% CI: 1.32, 2.57 in NFHS 4 and OR 1.35, 95% CI: 0.93, 1.96 in NFHS 5) of gynaecological morbidity. Increasing pregnancies increases the vulnerability to reproductive complications. Lower ages at marriage and first birth were significantly associated with gynaecological morbidities. There is a significant association between gynecological morbidities and risk factors such education, caste, access to toilets, wealth, place of residence, age, and media exposure. Additionally, menstrual cleanliness has a substantial impact on health outcomes. However, age at menarche did not have a significant association.

Role of socio-economic factors on treatment seeking behaviour for gynaecological morbidities in eastern India

Table 3 shows how different socio-economic factors influence women to seek treatment-seeking behaviour for gynaecological issues over time from NFHS 4 and NFHS 5 in eastern India. Women belonging to 25-34 years had higher (36.47%) treatment seeking behaviour wherein its prevalence increased (39.57%) in NFHS 5. While looking into the caste variation, treatment seeing behaviour increased among STs from 30.60% to 41.69%. Women belonging middle (OR 1.54, 95% CI: 1.20,1.98) and richer (OR 1.38, 95% CI: 0.98,1.93,2) wealth quintile were more likely to seek treatment for gynaecological morbidities than the poorest one in 2015-16. The odds of treatment seeking increase with succussing wealth quintiles. Taking improved toilet facilities as the reference category, women who have not improved or have no toilet facility were significantly associated with and treatment seeking. The study found that women's likelihood of seeking treatment was significantly influenced by their level of education. In 2015-16, women with higher education levels were more likely to seek treatment than those who were illiterate or had only received primary education. This shows that education raises awareness of gynecological disorders, prompting women to seek treatment in a timely manner. Women who have regular media exposure have higher treatment-seeking behaviour, wherein the prevalence increases from 38.38% in NFHS 4 to 45.67% in NFHS 5. Age at marriage of women depicts an increase in treatment seeking for those married between 19-24 years, from 35.33% to 41.83%, and those married at 31 years or older decreased significantly from 45.99% to 11.49%. Women having awareness about STI were more likely to seek treatment for gynaecological morbidities.

DISCUSSION

This study examines and discussed various correlates of gynaecological morbidities and the treatment seeking behaviour of women. The prevalence of any gynaecological morbidities increased from NFHS 4 (25.68%) to NFHS 5 (28.74%) in eastern India, with the highest prevalence in Bihar followed by Jharkhand, West Bengal, and Odisha. Among three types of gynaecological morbidities reported, the prevalence of genital discharge was highest, followed by genital sore/ ulcer and STIs. The treatment seeking behavior improved across the eastern region except West Bengal where it decreased from 41.57% in NFHS 4 to 39.5% in NFHS 5. This could be due to more awareness and improved health education has most likely resulted in more women understand and reporting their symptoms. The findings of the study found there has been preference for private medical sector over the public sector for seeking treatment in eastern India.[22] The probable reason might be, the easy accessibility, and availability of doctors along with the hygienic condition of private healthcare facilities.[23] Socioeconomic improvements have enabled more women to afford medical care, increasing treatment-seeking behaviour. Lower age at marriage and higher birth order were found to be significant factors influencing gynaecological morbidities in

eastern India. Similarly, another study highlighted the association of age at marriage especially those marrying before 18 years of age with high odds of gynaecological morbidities.[24] Lower age at first birth is considered vulnerable[25] and increasing pregnancies increases the gynaecological morbidities. The higher prevalence of gynaecological morbidities among higher aged may be linked to perimenopause/menopause that increased gynaecological concerns during this stage.[26,27] The study revealed that gynaecological morbidities and treatment-seeking behaviour was influenced by socioeconomic factors, including geographical location, economic status, educational attainment, and age, as evidenced by earlier studies.[7,13,27-29] Furthermore, poor menstrual hygiene management, such as insufficient sanitation facilities and limited access to hygiene products might increase the risk of infections and other gynaecological problems.[30,31] Often cultural and different traditions refrain women from seeking medical help when they have gynaecological issues.[32] Women often normalize symptoms due to fear of embarrassment, and other socio-cultural beliefs.[33,34] This study has not only highlighted the influence of socioeconomic determinants and awareness about STI significantly influences the gynaecological morbidities and their treatment seeking behaviour. These factors collectively effect the health outcomes, emphasizing the need for programs, interventions and policies that address both socio-economic and reproductive health aspects.

Strength and Limitations

This study has intrinsically showed the gynaecological morbidity condition and its changing pattern in eastern India along the scenario treatment seeking among women. This study has found, education and awareness about gynaecological morbidities can increase the treatment seeking among women. Therefore, more public health programs should focus on delivering information on reproductive healthcare and offering accessible services, including preventive and curative care. However, the study has several limitations, mainly related to the self-reporting of gynaecological morbidities by the respondents. The data provided by NFHS about gynaecological morbidities are self-reported that often leads to underestimation due to both underreporting and asymptomatic infections.[35] Additionally, our analysis is constrained by the scope of a large national survey, which limits the depth of questions regarding women's perceptions and attitudes influencing treatment-seeking decisions.[36] Women sometimes do not report gynaecological morbidities due to the stigma around them, resulting in a reduced sample size. The extended 12-month recall period for symptoms may compromise the reliability of estimates, potentially influenced by variations in symptom severity and socioeconomic status within the population.[37]

Conclusion

To conclude, the present study found a high prevalence of gynaecological morbidities among women in eastern India, especially in Bihar. Raising awareness about reproductive health, especially about gynaecological morbidities, and health education on reproductive and sexual health are prerequisite. Implementing targeted interventions, health education and awareness campaigns can significantly reduce gynaecological complications, thereby enhancing the reproductive health of women in eastern India.

Author's Contributions

NG and PR contributed equally in the study design and conception. NG did the data analysis, interpretation, and initial manuscript preparation. PR did the supervision and review. NG and PR did the editing. Both the authors reviewed and approved the final manuscript.

Availability of Data

NFHS data that has been used in this study are accessible through the Demographic Health Survey (DHS) Program. The data is publicly available and can be accessed by login. It can be accessed by the following links.

NFHS 4:
https://dhsprogram.com/data/dataset/India_Standard-DHS_2015.cfm?flag=0

NFHS 5:
https://dhsprogram.com/data/dataset/India_Standard-DHS_2020.cfm?flag=1

References

1. Paul VK, Sachdev HS, Mavalankar D, et al. Reproductive health, and child health and nutrition in India: meeting the challenge. Lancet. 2011 Jan 22;377(9762):332-49. doi: 10.1016/S0140-6736(10)61492-4.
2. Kumar P, Srivastava S, Chauhan S, et al . Factors associated with gynaecological morbidities and treatment-seeking behaviour among adolescent girls residing in Bihar and Uttar Pradesh, India. PLoS One. 2021 Jun 4;16(6):e0252521. doi: 10.1371/journal.pone.0252521.
3. World Health Organization. Maternal and Child Health Unit. Measuring reproductive morbidity: report of a technical working group, Geneva: World Health Organization. 1990. Available from: https://iris.who.int/handle/10665/61306. Accessed 5 July 2024
4. Pervin HH, Kazal RK, Parveen T, et al. Frequency and pattern of gynecological problems of adolescent girls attending outpatient department, department of obstetrics and gynecology, Bangabandhu Sheik Mujib Medical University, Bangladesh. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2020 Sep 25;9(10):3931-5. doi: http://dx.doi.org/10.18203/2320-1770.ijrcog20204274 (1)
5. Prusty RK, Unisa S. Reproductive Tract Infections and Treatment Seeking Behavior among Married Adolescent Women

15-19 Years in India. Int J MCH AIDS. 2013;2(1):103-10. doi: 10.21106/ijma.15. PMID: 27621963; PMCID: PMC4948135.

6. Gosalia VV, Verma PB, Doshi VG et al. Gynecological morbidities in women of reproductive age group in urban slums of Bhavnagar city. National Journal of Community Medicine. 2012 Dec 31;3(04):657-60. doi: https://njcmindia.com/index.php/file/article/view/1788

7. Bhasin S, Shukla A, Desai S. Services for women's sexual and reproductive health in India: an analysis of treatment-seeking for symptoms of reproductive tract infections in a nationally representative survey. BMC Womens Health. 2020 Jul 28;20(1):156. doi: 10.1186/s12905-020-01024-3.

8. Bhatia JC, Cleland J. Obstetric morbidity in south India: results from a community survey. Soc Sci Med. 1996 Nov; 43(10): 1507-16. doi: 10.1016/0277-9536(96)00105-0.

9. Bhattacharyya N, Dasgupta D, Roy S. Concomitants of Gynaecological Problem: A Study on Young Married Women of Rural West Bengal. Journal of the Anthropological Survey of India. 2020 Jun 20;69(1):124–144. Doi: https://doi.org/10.1177/2277436X20927252

10. Raushan MR. Healthcare Utilization of Gynecological and Reproductive Morbidities: Role of Intra-Familial Relations and Empowerment among Women, Rural India. Journal of Population and Social Studies [JPSS]. 2017 Oct 1;25(4):373-87. doi: 10.25133/JPSSv25n4.006

11. Koenig M, Jejeebhoy S, Singh S, et al. Investigating women's s gynaecological morbidity in India: Not just another KAP survey. Reproductive health matters. 1998 Jan 1;6(11):84-97. Doi: https://doi.org/10.1016/S0968-8080(98)90085-4

12. Prasad JH, Abraham S, Kurz KM, et al. Reproductive tract infections among young married women in Tamil Nadu, India. Int Fam Plan Perspect. 2005 Jun 1;31(2):73-82. doi: 10.1363/3107305. PMID: 15982948.

13. Rani M, Bonu S. Rural Indian women's care-seeking behavior and choice of provider for gynecological symptoms. Stud Fam Plann. 2003 Sep;34(3):173-85. doi: 10.1111/j.1728-4465.2003.00173.x. PMID: 14558320.

14. Joshi BN, Chauhan SL, Donde UM, et al. Reproductive health problems and help seeking behavior among adolescents in urban India. Indian J Pediatr. 2006 Jun;73(6):509-13. doi: 10.1007/BF02759896. PMID: 16816513.

15. Gulati SC, Chaurasia AR, Singh RM. Women's reproductive morbidity and treatment-seeking behaviour in India. Asian Population Studies. 2009 Mar 1;5(1):61-84. Doi: https://doi.org/10.1080/17441730902790131

16. Raj P, Raj A. Caste variations in reproductive health status of women: a study of three eastern states. Sociological Bulletin. 2004 Sep;53(3):326-47. Doi: https://doi.org/10.1177/0038022920040302

17. Dawn A, Biswas R. Reproductive tract infection: an experience in rural West Bengal. Indian journal of public health. 2005 Apr 1;49(2):102-3.

18. Gomathi B, Pal A, Ghdei D, et al. Common Gynecological Morbidities Among Married Women in The Selected Community Areas of Bhubaneswar, Odisha. European Journal of Molecular & Clinical Medicine. 2020;7(11):4994–5004

19. International Institute for Population Sciences & ICF. National Family Health Survey, 2015–16: India. 2017.Available from: https://dhsprogram.com/pubs/pdf/fr339/fr339.pdf. Accessed 2024 Jul 5

20. International Institute for Population Sciences & ICF. National Family Health Survey, 2019–21: India. 2021. Available from: https://dhsprogram.com/pubs/pdf/FR375/FR375.pdf. Accessed 2024 Jul 5

21. StataCorp LLC. Stata Statistical Software: Release 15. College Station, TX: StataCorp LLC; 2017.

22. Sabarwal S, Santhya KG. Treatment-seeking for symptoms of reproductive tract infections among young women in India. Int Perspect Sex Reprod Health. 2012 Jun;38(2):90-8. doi: 10.1363/3809012. PMID: 22832149.

23. Chellan R. Gynaecological morbidity and treatment seeking behavior in South India: Evidence from the Reproductive and Child Health survey 1998-1999. Journal of Health and Population in Developing Countries, November. 2004 Nov 15.

24. Abraham A, Varghese S, Satheesh M, et al. Pattern of gynecological morbidity, its factors and health seeking behavior among reproductive age group women in a rural community of Thiruvananthapuram district, South Kerala. Indian Journal of Community Health. 2014 Sep 30;26(3):230-7.

25. Raj P, Gupta N. A Review of the National Family Health Survey Data in Addressing India's Maternal Health Situation. Public Health Rev. 2022 Oct 31;43:1604825. doi: 10.3389/phrs.2022.1604825.

26. Pradhan MR, Mondal S, Mudi PK. Gynecological morbidity and treatment-seeking among older adult (aged 45-59) women in India. Reprod Health. 2023 Apr 27;20(1):64. doi: 10.1186/s12978-023-01611-1.

27. Woods NF, Mitchell ES. Symptoms during the perimenopause: prevalence, severity, trajectory, and significance in women's lives. Am J Med. 2005 Dec 19;118 Suppl 12B:14-24. doi: 10.1016/j.amjmed.2005.09.031.

28. Garg S, Sharma N, Bhalla P, et al. Reproductive morbidity in an Indian urban slum: need for health action. Sex Transm Infect. 2002 Feb;78(1):68-9. doi: 10.1136/sti.78.1.68.

29. Desai GS, Patel RM. Incidence of Reproductive Tract Infections and Sexually Transmitted Diseases In India: Levels And Differentials. Journal of family welfare. 2011 Dec 1;57(2).

30. Anand E, Singh J, Unisa S. Menstrual hygiene practices and its association with reproductive tract infections and abnormal vaginal discharge among women in India. Sex Reprod Healthc. 2015;6(4): 249–254. Doi: 10.1080/23293691.2018.1523116

31. Mathiyalagen P, Peramasamy B, Vasudevan K, et al. A descriptive cross-sectional study on menstrual hygiene and perceived reproductive morbidity among adolescent girls in a union territory, India. J Family Med Prim Care. 2017 Apr-Jun;6(2):360-365. doi: 10.4103/2249-4863.220031.

32. Barua A, Kurz K. Reproductive health-seeking by married adolescent girls in Maharashtra, India. Reprod Health Matters. 2001 May;9(17):53-62. doi: 10.1016/s0968-8080(01)90008-4.

33. Kostick KM, Schensul SL, Jadhav K, et al. Treatment seeking, vaginal discharge and psychosocial distress among women in urban Mumbai. Cult Med Psychiatry. 2010 Sep;34(3):529-47. doi: 10.1007/s11013-010-9185-8.

34. Oomman N. Examining determinants of Gynaecological morbidity from Women's perceptions in rural Rajasthan. Reproductive health in India: new evidence. 2008;159. 36.

35. Nagarkar A, Mhaskar P. A systematic review on the prevalence and utilization of health care services for reproductive tract infections/sexually transmitted infections: Evidence from India. Indian journal of sexually transmitted diseases and AIDS. 2015 Jan 1;36(1):18-25. Doi: 10.4103/0253-7184.156690

36. Subramanian SV, Subramanyam MA, Selvaraj S, et al. Are self-reports of health and morbidities in developing countries misleading? Evidence from India. Soc Sci Med. 2009 Jan;68(2):260-5. doi: 10.1016/j.socscimed.2008.10.017.

37. Das J, Hammer J, Sánchez-Paramo C. The impact of recall periods on reported morbidity and health seeking behavior. Journal of Development Economics. 2012 May 1;98(1):76-88. Doi: 10.1016/j.jdeveco.2011.07.001