ORIGINAL ARTICLE

Pattern of gynecological morbidity, its factors and Health seeking behavior among reproductive age group women in a rural community of Thiruvananthapuram district, South Kerala

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| Abstract | Introduction | Methodology | Results | Conclusion | References | Citation | Tables / Figures |

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Abstract

Introduction: Gynecological morbidities constitute an important health problem among women of reproductive age group in India. Many of them did not seek care and bare it silently. **Aims and Objectives**: The purpose of this study was to measure the prevalence of self-reported gynecological morbidities among women of 15 to 45 years and to find out association with certain selected socio-demographic factors. This study also tried to study the health seeking behavior of women. **Methodology**: A population based cross sectional survey was conducted across Vakkom Panchayat, it's area comes under Rural Health Centre of the Department of Community Medicine, Govt. Medical College, Thiruvananthapuram. A total of 540Women of 15 to 45 years was included in the study by two stage sampling technique. **Results:** Of the total, 199 {(36.85%) 95% CI -31.14, 42.94} women in the study reported at least one type of gynecological morbidity. Major morbidity reported was menstrual problems (25.0%). Prevalence of overall gynecological morbidities was found to be significantly more among women who married early (<18years) Adjusted OR 1.66 (95%CI- 1.05, 2.64).On subgroup analysis the factors like age group of women (below 30yrs), age at menarche below 13 years & presence of thyroid hormone disorders were found to be significantly ($p<0.05$) related to menstrual diseases in the regression model. Only 110 (55.3%) women sought treatment for any one of the morbidity. Majority took treatment from private hospitals. **Conclusion:** Prevalence of gynecological morbidities was high in this community. The data collected are valuable & could serve as preliminary data to pilot innovative delivery of gynecologic healthcare services.

Introduction

A healthy reproductive life is an essential component of the general health and well-being of a woman [1]. Reproductive health problems constitute the leading cause of ill health in women of reproductive age group worldwide especially to those in developing countries [2]. It accounts for 21.9% of the disability-adjusted life years lost by women aged 15–45 years [3].

The universal access to reproductive health was identified as a developmental goal in the 1994 International conference for population and development [4]. After ICPD the government of India launched the Reproductive and child health programme in 1997 [5]. The major thrust was given in reducing total fertility rate and maternal mortality rate and improving the health of the women [6]. The health of women is also affected by problems that are not related to pregnancy or child birth. Hence giving focus more on mortality indicators may ignore

many treatable gynecological conditions that cause significant distress in women's lives [7].

There were marked differences in the prevalence of reported gynecological morbidity from 24.4 % to 74.1 % at various regions of India [8,9]. Kerala state in India is often quoted as a model for the developing world because of its achievements in the field of health. Health seeking behavior was reported to be high in Kerala for antenatal care services with 99 % institutional deliveries and 94% had at least 3 antenatal visits [10]. A survey by Indian Council for Medical Research reported that proportion of women having any gynecological complaints in South Kerala was 29.1%.[8] District Level House hold Facility survey 3 showed that 12.0% married women in rural area had symptoms suggestive of reproductive tract infections in Kerala [11]. There have been very few published studies on prevalence and especially health seeking behavior for Gynecological morbidities in Kerala. Community based self-reports of morbidities has its utility and relevance since it is difficult to carry out clinical & laboratory examination on community settings on a large scale because such procedures are usually too expensive. Also women suffer these morbidities silently without seeking proper institutional care.

Aims & Objectives

The primary objective of this study was to measure the burden of self-reported gynecological morbidities among women of 15 to 45 years. The secondary objectives were to find out relationship with certain selected socio-demographic factors and to study the health seeking behavior of women.

Material and Methods

Study design: A cross sectional survey was conducted across the Vakkom Panchayat which is one of the rural Panchayat in Thiruvananthapuram District. This panchayat area comes under the field practice areas Rural Health Centre (Block PHC) of the Department of Community Medicine, Govt. Medical College Thiruvananthapuram. This setting was selected since it was under the administrative control of the department. Other rural centres are under the administrative control of State Directorate of health services and another one was an Urban health centre. Vakkom Panchayat has14 wards and it is situated 35 Km away from Thiruvananthapuram City (Southern most district of Kerala state). The total population of the Panchayat is 20,271.

Study population: Women of 15 to 45 years (Reproductive age group) residing in the Panchayat

were the study subjects. Based on a study conducted by ICMR (1997), the prevalence of self-reported gynecological morbidity in South Kerala was 29.1%.[8]

The sample size was estimated to be 243 using the formula Z2 (1-α/2) PQ/L2 .Where Z1-α/2 is 1.96 (at 95% level), P is 29.1 and Q is 70.9. L is 20 % of P which is the precision. The sample size was doubled to minimize the cluster effect (design effect of 2.00) .After adding a non-response rate of 10% the minimum sample size was calculated to be 534.Finally 540 individuals were taken in to the study.

Sampling technique: Samples were taken by two stage sampling method. Since exact sample frame work (list of women in the age group of 15 to 45 years) was not available at the PHC we could not follow simple random sampling method. The wards of Vakkom Panchayat were the units of sampling in first stage. It has 14 wards of which 10 were selected using simple random technique through lottery method. Since total sample size was 540 from each ward 54 women of 15 to 45 years were enrolled into the study. Second stage: In each selected ward, the first house was selected by rotating a bottle at the point of entry to the ward. Head end of the bottle is selected as direction of entry. From this house nearest next house was selected in the sequence and continued till reaching the target number of 54 in each ward. Each house which had the eligible member and was not available at the time of investigator's visit was re - visited 2 times .Those who were not available even after 2 revisits were considered as not willing to participate. **Inclusion criteria :** Women of the age group 15 to 45 years who was resident of Vakkom Panchayat in selected wards and those who gave consent to participate in the study. **Exclusion criteria:** Pregnant women, women with any chronic debilitating illness   (not related with gynecological morbidities).

Study period: The data collection was done from November 2011 to January 2012.

Data collection procedure: Information was collected by directly interviewing each woman. Data on socio demographic factors, environmental factors, menstrual history, marital history, obstetric history, family planning practices, gynecological morbidities & health seeking behavior was collected from the women using a semi structured questionnaire which was administered by the investigator. Questionnaire was pretested by conducting a pilot study in the same area and was

modified accordingly before the original survey. The women were explained about the interview procedure before administering the questionnaire. Only after taking ethical informed consent interview was conducted. All the women were interviewed with sufficient privacy.

Study variables: *Outcome measures:* Gynecological morbidity: "It includes any condition, disease or dysfunction of the reproductive tract system that is not directly related to pregnancy, abortion or child birth but may be related to sexual beahviour".13The morbidities assessed in the present study were Menstrual disorders, Reproductive tract infection (RTI), Urinary tract infection (UTI), Infertility, Stress urinary incontinence and Prolapse. The menstrual disorders studied were dysmenorrhoea, oligomenorrhoea, polymenorrhoea, hypomenorrhoea, menorrhagia and secondary amenorrhea (other than physiological). Symptoms related to both upper & lower reproductive tract infection was enquired. For infertility measured history of primary infertility only. Presence of any of the morbidities at the time of visit was considered. Morbidities were measured using standard operational definitions.[14]

Statistical analysis: A descriptive analysis has been carried out initially. Continuous variables were represented using mean, standard deviation and categorical variables were summarized using proportion.

The Chi square analysis was done for categorical variables and tested for significance.

For estimating the strength of association between exposure and outcome variable Odds ratio was calculated. Quantitative variables such as age and age at menarche were converted to binary categorical variables using the mean cut off values. For age at marriage lower legal age for marriage of 18 yrs was used as cut off. Binary Logistic regression was performed for finding out factors associated with gynecological morbidity. Subgroup analysis was also done to find out factors related to menstrual disorders, since it was the commonest morbidity reported by the women. In the regression model included only those variables found significant on bivariate analysis (p value less than 0.05).Backward stepwise method was used in building the model. Model started with factors significant on initial bivariate analysis (p value <0.05).Then at each step the factors that contributed least was removed until all the predictors in the model were significant (p value <0.05). A significance level of 95% and an allowable error of 20% had been assumed for all these analyses. The statistical analysis had been done using SPSS version 18.

Ethical statement: Confidentiality and voluntariness were the guiding principles of the study. Specific diseases identified during the study were conveyed to the participants. Necessary referral advice was given. Awareness regarding the reproductive health problems was given to all of the subjects.

Informed consent was obtained from each of the study participant. For those below 18 years we took informed consent from their parents and assent from children. The study was approved by the Scientific Research Committee and Institutional Ethics Committee of Government Medical College, Thiruvananthapuram.

Results

The analysis included the data of 540 women of 15 to 45 years from ten wards of Panchayat. The response rate was 93.4%. The mean age of study participants was 31.15(SD, 8.25yrs).

Majority of the participants were hindus 394(73%) followed by muslims 142 (26.3%) and christians 4 (0.7%). The mean age at marriage was 19.8years (SD, 3.38) with lowest at 14years.The mean age at menarche was 13.26 (SD, 1.3yrs) ranged from 10 to 18yrs.The mean number of children per woman was 1.69 (SD, 0.80). Around 117, 25.8 % ever married women reported history of abortion & 50.4 % reported history of induced abortion. Most common 216 (47.6%) method of contraception currently practiced among them was female sterilization. Of the total, 41(7.6%) were found to be suffering various co morbidities. Among them 25(4.6%) reported thyroid hormone related diseases.

Prevalence gynecological morbidities: In the study 199 {36.85% (31.14, 42.94)} women reported at least one type of gynecological morbidity. Out of 199 women with disease 79.4% reported one morbidity, 17.6% reported 2 morbidities & 3% reported 3 morbidities. The major problem reported by women in the study was menstrual disorders (135, 25.0%) followed by symptoms related to reproductive tract infections, included increased vaginal discharge (23, 58.97%), vaginal discharge with itching (7, 17.95%) and vaginal discharge with lower abdominal pain (9, 23.1%) Table1

Table 2 shows bivariate analysis of certain selected socio-demographic correlates of gynecological morbidity. The prevalence of overall morbidities was found more in women with lower educational status

(below high school) & lower age at marriage (less than 18years) ,p value <0.05.The cut off levels for educational & occupational status were made based on previous studies. Hindus were having lower risk for gynecological morbidities compared to others. There was no significant association between age, poverty level & marital status with gynecological morbidity. (p> 0.05)

The prevalence of menstrual disorders (Table 3) was high and significantly related to age less than 30 years, age at menarche below 13 years, presence of thyroid disorders and unmarried.

Multivariate analysis was done with variables found significant (p<0.05) on bivariate analysis (Table 4). Age at marriage less than 18 years was found as a significant risk 1.66(95% CI- 1.05, 2.64) for gynecological morbidity. The adjusted odds for gynecological morbidity was found to be low 0.59(0.40, 0.87) among Hindus compared to other religion. The variable education below secondary level was significant on bivariate analysis but lost its significance after putting in the regression model. The factors such as age of the women below 30 years Adjusted OR 2.09(1.39, 3.13), age at menarche below 13 years Adjusted OR 1.7(1.12, 2.59)& history of thyroid hormone disorders Adjusted OR 3.6(1.56 , 8.3)were found as significant risk factors for menstrual diseases.

Treatment seeking behavior: Out of 199 women with morbidities only 110(55.3%) took treatment for any one of the morbidity. The treatment history was asked for each reported morbidity (Table 5). Of the 110 women who took treatment for any one of the morbidity, 95(86.4%) sought care from any health facility (Private or Government). Rest of them, 15(13.6%) took over the counter or self-treatment. Majority of the women 70(64.0%) sought care from private institution. The figure (Figure 1) given below shows the reasons reported by women for going to a private hospital. More than one response was given by the subjects. The reasons for going to government hospitals were, lack of money (15) and nearest facility (10). Majority consulted gynaecologist first for treatment and 86% of women consulted a lady doctor for their gynecological problems. Out of 199 women with gynecological morbidity, 89 (44.7%) did not take any treatment. The major reason stated for not going for treatment was, they did not feel that treatment was necessary for their illness (60.7%). The other reasons were shyness (13.4%), time constraints (11.2%), mildness of symptoms (10.1%),

thought it correct (11.2%) economic reasons (5.6%) and fear physical examination (3.4%).

Discussion

In our study we found that prevalence of self-reported gynecological morbidity was high (36.85%) in this community. The major morbidity reported by women was menstrual disorders. Prevalence of symptoms of reproductive tract infection was low. We found a significant association between earlier age at marriage & religion with over all gynecological morbidity. The prevalence of menstrual disorders was found significantly high in women below 30yrs, those with age at menarche < 13yrs & with history of thyroid hormone disorders. Only 55.3% women sought treatment for any one of the morbidity. Majority 70 (64.0%) sought care from private institution.

Interpretation: The prevalence in our study is compared with that from various other studies in India. In a study in Karnataka among women of reproductive age group 33.3% reported symptoms of at least one gynecological morbidity [15]. Another study in Northern India showed a similar prevalence of 37.47% [16]. The major morbidity reported by women in this study was menstrual disorders 25%.A systematic review of menstrual disorders in developing countries reported high rates of menstrual morbidity [17]. The prevalence of reproductive tract infection in the present study was lower compared to other studies. One of the reasons would be reporting bias by the participants. The prevalence was also reported to be influenced by women's educational status [18]. In Kerala the better education of the women and easy accessibility to health care services would contribute to better health care seeking. In the present study majority had completed high school education. Hence they would be better aware of the symptoms of RTI and are more likely to seek care early. Wide variation in the prevalence of reproductive tract infection was noticed in various studies where the percentage of women having RTI ranged from 7.0% to 49.8% [19-21].

In our study those married at earlier age were having higher risk for overall gynecological morbidity. Women marrying at early age may be more vulnerable to early pregnancy and its complications and also to contraceptive related morbidities. In a study conducted among women in reproductive age group in rural Maharashtra, the age at marriage below 18years was found to be significantly related

to reproductive health problems [22]. Hindus were having lower risk for gynecological morbidities in our study. This may be because of the differences in the cultural practices across the religion which needs to be studied in detail. The differences in the educational and economic status and health seeking behavior of the women across the religion also could be the reason. No significant association was obtained between educational status & morbidities on multivariate analysis. Similar finding was also reported in a study conducted in India [23]. Unmarried were found to have higher risk for menstrual disorders on bivariate analysis & not significant on Multivariate analysis. This is because among unmarried majority (97%) were of younger age group. In the present study women below 30 yrs were having higher risk for menstrual disorders. The prevalence of menstrual disorders was reported to be decreasing as the age advances [24]. There was found to be a significant association with thyroid hormone disorders. Menstrual irregularities were found significantly more frequent in women with thyroid dysfunction [25]. In the present study women with age at menarche below 13 years were found to have higher risk for menstrual disorders. The age at menarche, both less than 12 years and above 14 years were having higher odds for menstrual disorders [26]. The exact etiology is not known and needs further research.

In the present study only 55.3% took treatment. The percentage of women who sought treatment varies with the type of morbidities. Among women with history of infertility majority had taken treatment. This would be due to strong cultural pressure on them to have children early after marriage. For reproductive and urinary tract infection more than half took treatment since they perceived symptoms were severe. Less than half took some mode of treatment for menstrual complaints .Even if menstrual disorders are not life threatening which can affect woman's daily life and productivity. Women consider this problem as a normal part in their lives and do not seek care. Majority sought treatment from private hospitals. So it is clear from the study that besides affordability and accessibility of government health facilities the long waiting time for consultation and non-availability of doctors were the reasons for not utilizing Government health facilities. Majority of the women approached lady doctor for consultation. This shows the reluctance in women to communicate their reproductive health problems with male doctors. Low use of temporary

methods of contraception and high level of abortion in this community clearly indicates that women were resorting to abortion to avoid unwanted pregnancies. The major reason stated by women for not taking treatment was they did not feel treatment was necessary. Most of the gynecological problems can be cured if they are detected and treated early.

Conclusion

The prevalence of reported gynecological morbidity was found high in this community & most of the women did not perceive that their morbidity to be treated. Hence women should be educated on various symptoms & complications of reproductive health problems that may occur in later so that they can avail timely treatment if needed. The factors such as treatment cost, quality of health care services, women's education & autonomy that may influence health seeking behavior of a woman which needs further studies to explore.

Recommendation

The reproductive health problems of the women require greater attention and the services for the early detection and treatment of gynecological problems should be ensured.

Limitation of the study

The strength of our study is that it was a population based survey. Hence it measures the true prevalence and it can be generalized in to that community. The findings of our study need to be considered alongside the following limitations: In the study diagnosis of gynecological morbidities was made based on clinical symptoms. Hence only the perception of the women study subjects could be obtained. At the community level this could be a most feasible & effective means of collecting information on reproductive problems. But still we measured it with maximum objectivity using well defined operational definitions. Reporting bias by the study participants was also another limitation. There may be under reporting of the symptoms by the women. The overall sensitivity of self-reports of reproductive infections varied from 42% to 69% in various settings.[27] Being a cross sectional study it may not give the exact predictors of gynecological morbidity.

Authors Contribution

All the authors have contributed to the study. AA did the protocol and questionnaire preparation, data collection, data analysis and draft writing. SV, MSS & VK contributed to hypothesis generation, designing,

results interpretation and draft reviewing. SG and AMM involved in data acquisition and formatting.

References

1. Guidelines on Reproductive Health. Report of United Nations Population information network. Available at: http://www.un.org/popin/unfpa/ taskforce/guide/iatfreph.gdl.html. [Last accessed on 1/11/2012]
2. Improving reproductive health. Population issues. UNPFA. Available at: http://www.unfpa.org/rh/index.htm. [Last accessed on 26/08/2014]
3. Abouzahr C, Vaughan JP. Assessing the burden of sexual and reproductive ill health: Questions regarding the use of disability adjusted life years. Bulletin of World health Organization. 2000;78(5).
4. National-level monitoring of the Achievement of universal access to reproductive health-: conceptual and practical considerations and related indicators - report of a WHO/UNFPA.
5. India Reorients Its Family Welfare Programme. United Nations Population Information Network (POPIN). URL: http://www.un.org/popin/ [Last accessed on 26/08/2014].
6. Department of Health and family welfare. URL: http://mohfw.nic.in/ [Last accessed on 26/08/2014].
7. Stones WR, Matthews Z. Gynecological disease in developing countries: Whose burden? Opportunities and Choices' Reproductive Health Research. Working paper.
8. Kambo IP, Dhillon BS, Singh P, Saxena BN, Saxena NC. Self-reported gynecological problems from twenty three districts of India (An ICMR Task Force Study). Indian J Community Med. 2003;28(2):67-73. [Google Scholars]
9. Latha K, Kanani SJ, Maitra N. Prevalence of Clinically Detectable Gynecological Morbidity in India: Results of Four Community Based Studies. The Journal of Family Welfare. 1997;43(4):8-16.
10. Antenatal care, Maternal Health. International Institute for Population Sciences and Macro International. National Family Health Survey, India, Kerala. Report number: 2005-06:3.
11. Awareness of RTI/STI and HIV/AIDS. Kerala - Key Indicators. Ministry of Health and Family Welfare District Level household Facility Survey. Report number: 2007-08:3.
12. K. Park. Fertility, Demography and Family planning. Park text book of Social and Preventive medicine. 22nd ed Jabalpur, M/s Banarsidas Bhanot. 2013, pg. 449.
13. Jitendra Khanna. Progress in Reproductive health research. Studying reproductive tract infections and related disorders in women. Department of Reproductive Health and Research, World Health Organization, Geneva, Switzerland. Report Number: 2001, 57.
14. Howkins & Borne Shaw's text book of Gynaecology. In: Padubidri VG, Shirish ND. 15th ed. Elsivier, Gurgaon, Haryana. 2011:pg130-132,176-177, 188, 200, 283-285, 336, 450-451.
15. Bhatia JC, Cleland J. Self-reported symptoms of gynecological morbidity and their treatment in south India. Studies in Family Planning.1995;26:203–216.
16. Inamdar IF, Sahu PC, Doibale MK. Gynecological morbidities among ever married women: A community based study in Nanded city, India. IOSR Journal of Dental and Medical Sciences. 2013;6(7):05-11. [Google Scholars]
17. Harlow SD, Campbell OM. Epidemiology of menstrual disorders in developing countries: a systematic review. BJOG. 2004 Jan;111(1):6-16. Review. PubMed PMID: 14687045. [PubMed]
18. Zhang XJ, Shen Q, Wang GY, Yu YL, Sun YH, Yu GB, Zhao D, Ye DQ. Risk factors for reproductive tract infections among married women in rural areas of Anhui Province, China. Eur J Obstet Gynecol Reprod Biol. 2009 Dec;147(2):187-91. doi: 10.1016/j.ejogrb.2009.08.017. Epub 2009 Sep 12. PubMed PMID: 19748723. [PubMed]
19. Meitei MH, Latashori K, Gopal KSH. Awareness and prevalence of reproductive tract infections in north east districts of India. Health and Population-Perspectives and Issues. 2005;28(3):132-145.
20. Ravi RP, Kulasekaran RA. Prevalence of sexually transmitted infections among young married women in Thiruvarur district of Tamil Nadu state in India. Indian Journal of Community Health. 2014;26(1):82 - 87. Retrieved from http://iapsmupuk.org/journal/index.php/IJCH/article/view/461 [Google Scholars]
21. Balamurugan SS, Bendigeri N. Community-based study of reproductive tract infections among women of the reproductive age group in the urban health training centre area in hubli, karnataka. Indian J Community Med. 2012 Jan;37(1):34-8. doi: 10.4103/0970-0218.94020. PubMed PMID: 22529538; PubMed Central PMCID: PMC3326805. [PubMed]
22. Singh S, Singh SK. Reproductive Morbidity among the Rural Women in Maharashtra. URL: http://www.iipsindia.org/pdf/rti_02capdx4.pdf [Last accessed on 26/08/2014].
23. Kaur S, Jarius R, Samuel G. An exploratory study to assess reproductive morbidities and treatment seeking behaviour among married women in a selected community, Ludhiana, Punjab. Nursing and Midwifery Research Journal. 2013;9(3):91-98.[Google Scholars]
24. Pant B, Singh J, Bhatnagar M, Garg S, Chopra H, Bajpai S. Social Correlates in Reproductive Tract Infections among Married Women in Rural Area of Meerut. Indian J Community Med. 2008 Jan;33(1):52-3. doi: 10.4103/0970-0218.39246. PubMed PMID: 19966999; PubMed Central PMCID: PMC2782231. [PubMed]
25. Kaur T, Aseeja V, Sharma S. Thyroid Dysfunction in Dysfunctional Uterine Bleeding. WebmedCentral OBSTETRICS AND GYNAECOLOGY 2011;2(9):WMC002235 doi: 10.9754/journal.wmc.2011.002235 [Google Scholars]
26. Karout N, Hawai SM, Altuwaijri S. Prevalence and pattern of menstrual disorders among Lebanese nursing students. EMHJ. 2012;18(4):346 – 352. [Google Scholars]
27. Sadana R. Measuring reproductive health: review of community-based approaches to assessing morbidity. Bull World Health Organ. 2000;78(5):640-54. Review. PubMed PMID: 10859858; PubMed Central PMCID: PMC2560761. [PubMed]

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Tables

TABLE 1 PREVALENCE OF VARIOUS GYNECOLOGICAL MORBIDITIES

Type of Gynecological morbidity	N (%)	Fleiss Quadratic 95%CI
Menstrual diseases	135 (25.0)	20.04,30.68
Dysmenorrhea	59 (43.7)	29.7,58.3
Hypo-menorrhoea	13 (9.6)	2.6,20.5
Menorrhagia	9 (6.67)	1.04,16.6
Oligo-menorrhoea	40 (29.6)	17.3,43.8
Poly-menorrhoea	10 (7.41)	1.4,17.6
Secondary amenorrhoea	4 (2.96)	0.9,11.1
Reproductive tract infection	39 (7.22)	4.55,11.16
Urinary tract infection	29 (5.37)	3.11,8.96
Stress urinary incontinence	24(4.44)	2.42,7.83
Infertility (Primary)	17 (3.1)	1.51,6.21
Vaginal prolapse	2 (0.37)	0.02,2.37

TABLE 2 SOCIO DEMOGRAPHIC FACTORS RELATED TO GYNECOLOGICAL MORBIDITY ON BIVARIATE ANALYSIS

Factor	Gynecological morbidity		Odds ratio (95%CI)	P value
	Yes (199), N (%)	No (341), N (%)		
Age below 30years	95(47.7)	140(41.1)	1.31 (0.92 , 1.86)	0.131
Education below secondary level	24(12.1)	23(6.7)	1.89 (1.04, 3.46)	0.035*
Unemployed	108(65.9)	212(70.2)	0.81 (0.54 ,1.23)	0.33
Hindu religion	132(66.3)	262(76.8)	0.59(0.40 ,0.87)	0.008*
Below Poverty Line	71(35.7)	102(29.9)	1.3(0.89 , 1.88)	0.166
Joint/Extended family	110(55.3)	206(60.4)	0.81(0.57 , 1.15)	0.243
Unmarried	36(18.1)	51(15.0)	1.2 (0.78 ,2.00)	0.34
Age at marriage below 18 years	42 (25.8)	47(16.2)	1.79(1.12, 2.87)	0.014*

Significance level (P value<0.05) ≠{ The reference categories were age 30yrs & above, education secondary level & above ,employed, other religion (Muslims & Christians), above poverty line, nuclear family, married, age at marriage 18 yrs & above}

TABLE 3 FACTORS RELATED TO MENSTRUAL DISORDERS ON BIVARIATE ANALYSIS

Factor	Menstrual diseases		Odds ratio (95%CI)	P value
	Yes (135), N (%)	No (405), N (%)		
Age below 30 years	77 (57.0)	158 (39.0)	2.07 (1.39, 3.08)	0.001*
Education below secondary level	14 (10.4)	33 (8.1)	1.3 (0.67 , 2.51)	0.34
Unemployed	61 (61.0)	259 (70.8)	0.65 (0.41 , 1.0)	0.062
Hindu religion	90 (66.7)	304 (75.1)	0.66 (0.43 , 1.01)	0.07
Unmarried	35 (25.9)	52 (12.8)	2.38 (1.47, 3.85)	0.001*
Below Poverty Line	48 (35.6)	125(30.9)	1.24 (0.82 ,1.86)	0.312
Age at menarche below 13 years	53(39.3)	110(27.2)	1.73 (1.15, 2.61)	0.008*
Undergone Tubectomy	46 (46.0)	170 (48.2)	0.92 (0.58, 1.43)	0.70
Presence of Thyroid hormone disorder	12 (8.9)	13 (3.2)	2.94 (1.31, 6.61)	0.007*

significant (p value <0.05) ≠{ The reference categories were age 30yrs & above, education secondary level & above ,employed, other religion (Muslims & Christians),above poverty line, married, age at menarche 13 yrs & above, not undergone tubectomy, no history of thyroid hormone diseases}

TABLE 4 BINARY LOGISTIC REGRESSION ANALYSIS SHOWING FACTORS RELATED TO OVERALL GYNECOLOGICAL MORBIDITY AND MENSTRUAL DISORDERS

Outcome variable	Category		Adjusted OR (95% CI)
Any gynecological morbidity	Age at marriage	Below 18 years	1.66 (1.05,2.64)
		18yrs and above	*
	Religion	Hindu	0.59 (0.40,0.87)
		Others	*
	Nagelkerke R square -.065		
Menstrual disorders	Age	Below 30 years	2.09 (1.39 , 3.13)
		30 yrs & above	*
	Age at menarche	Below 13 years	1.7 (1.12 , 2.59)
		13 yrs & above	*
	Thyroid hormone disorders	Yes	3.6 (1.56 , 8.3)
		No	*
	Nagelkerke R square -0.073		
*significance level (p value <0.05). *Reference category			

TABLE 5 TREATMENT SEEKING FOR REPORTED GYNECOLOGICAL MORBIDITIES

Category (n)	Treatment taken, N (%)	Total reported
Menstrual diseases	60(44.4%)	135
Urinary Tract Infection	20(69%)	29
Reproductive Tract Infection	22(56.4%)	39
Stress incontinence	3(12.5%)	24
Prolapse uterus	1(50%)	2
Infertility	16(94.1%)	17

Figure

FIGURE 1 REASONS STATED BY WOMEN FOR GOING TO PRIVATE HOSPITAL FOR TREATMENT, N (%)