

Community Health

HIGH PREVALENCE OF GYNAECOLOGICAL DISEASES IN RURAL INDIAN WOMEN

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Summary A population-based cross-sectional study of gynaecological and sexual diseases in rural women was done in two Indian villages. Of 650 women who were studied, 55% had gynaecological complaints and 45% were symptom-free. 92% of all women were found to have one or more gynaecological or sexual diseases, and the average number of these diseases per woman was 3.6. Infections of the genital tract contributed half of this morbidity. Only 8% of the women had undergone gynaecological examination and treatment in the past. There was an association between presence of gynaecological diseases and use of female methods of contraception, but this could explain only a small fraction of the morbidity. In the rural areas of developing countries, gynaecological and sexual care should be part of primary health care.

INTRODUCTION

MATERNAL and child health care is one of the eight basic components of primary health care in the Declaration of Alma-Ata.¹ In some programmes, a more focused approach has been advocated and promoted—termed selective primary health care² or child survival revolution.³ There is new concern about the health care of women during pregnancy and childbirth,⁴ and prevention of maternal mortality has been identified as a priority.⁵ By contrast, little attention has been given to the reproductive health of non-pregnant women. In third-world countries, such women tend to encounter the health care system only when they are the target of family planning programmes.⁶

The term gynaecological diseases is used in this paper to denote structural or functional disorders of the female genital tract other than abnormal pregnancy, delivery, or puerperium. One reason for the relative neglect of gynaecological care is a failure to appreciate the extent of unmet needs in rural areas. Most of the data are from hospitals or clinics and are highly selective; they give no idea of the rates in the population.^{7,8} The few population-based studies have focused only on specific disorders—ie, cervical cancer⁹⁻¹⁶ (chosen for study because of hospital experience), vaginal discharges,¹⁷ and genital infections¹⁸ (based on family planning clinic data). We are unaware of any population-based study of the whole range of gynaecological diseases in developing countries. An additional reason for lack of information on these disorders is the extreme scarcity of female doctors in the rural areas of developing countries. Traditionally women from these areas are very reluctant to talk to or be examined by male doctors for gynaecological or sexual disorders. Nurses and paramedical workers are not trained to deal with gynaecological diseases; so the result is near total absence of care.

In the present study we sought to determine: (1) the prevalence, types, and distribution of gynaecological

diseases in rural women; (2) awareness and perceptions of the women about their gynaecological and sexual disorders; and (3) the proportion of women who have access to gynaecological care.

SUBJECTS AND METHODS

Study Area and Sample Population

Gynaecological inquiry and examination is a very sensitive matter for rural women in India. One cannot randomly select a few women from a large population and descend upon them. Hence it was decided to make villages the units of study.

The investigation was conducted in Gadchiroli district, a backward district of Maharashtra state. Two villages were selected on the following criteria: socioeconomic composition similar to that of the average village; leaders who could understand the nature of study and would persuade the women to participate; prevalence of gynaecological diseases not known to be atypical.

Village A had a population of 1400 and village B 2200. They were located 20 km from the district town and from each other. Both had perennial roads. A primary health centre with two male doctors was located in village B while a small mission hospital run by the nurses was located in village A. Thus both the villages had good access to primary health care, though the nearest gynaecologist was at the district town.

Female social workers, village leaders, and volunteers invited all females who were age 13 years and above or had reached menarche to participate in the study, whether or not they had symptoms.

Investigations

A field camp was set up in the village, first in A then in B, with facilities for interview in privacy and pelvic examination, pathology laboratory, and operating theatre. A base pathology and bacteriology laboratory was established at the project headquarters 20 km away. The study team (a female gynaecologist with 10 years' experience as consultant, a physician, a pathologist, a laboratory technician, a nurse, and female social workers) visited the field camp and conducted the study. The women who were found to have disease were offered treatment.

First, information was obtained on personal details, socioeconomic status, perceptions and practices as regards gynaecological symptoms, past experience of care, and obstetrical, gynaecological, and sexual history. The women then had a general physical examination including speculum examination and bimanual examination of the pelvis; unmarried girls with an intact hymen had rectal rather than vaginal examination. The following laboratory investigations were done (apart from vaginal specimens, omitted in the never married): urine and stool tests; haemoglobin (cyanmethaemoglobin method); peripheral smear for typing of anaemia and for parasites; VDRL test (slide flocculation test using antigen from Government serology laboratories with positive and negative controls for quality control); sickling test with 2% sodium metabisulphite; urine culture and antibiotic sensitivities when necessary; vaginal smear microscopy and gram staining; vaginal and cervical cytology with Papanicolaou stain (method of Hughes and Dodds¹⁹); culture and antimicrobial sensitivity of vaginal swab (after transport to base laboratory in nutrient broth, primary inoculation was done on McConkey and blood agar and growth was observed 24 h later; motility and gram staining were studied, with biochemical reactions; specimens were not incubated in carbon dioxide atmosphere for *Neisseria gonorrhoeae*, or for anaerobes); blood biochemistry, when necessary; husband's semen analysis, when indicated;²⁰ and cervical biopsy, dilatation and curettage, and radiological examination when indicated (all histopathology slides of biopsy or uterine curettage material and suspicious cytology slides were reviewed by senior pathologists at the nearest referral laboratories at Nagpur).

Diagnostic terms and entities were those in the International Classification of Diseases, 9th revision.²¹ Vaginitis was diagnosed when the vaginal wall was visibly inflamed and the vaginal smear showed at least 5 pus cells per high-power field. When smear

TABLE I—COMMON GYNAECOLOGICAL AND SEXUAL COMPLAINTS (n = 650)

Complaint	Frequency	(%)
Vaginal discharge	88	13.5
Burning on micturition	60	9.2
Childlessness	36	5.5
Scanty periods	82	12.6
Irregular periods	45	6.9
Profuse periods	32	4.9
Amenorrhoea	132	20.3
Dysmenorrhoea	98	15.1
Dyspareunia	43	6.6
Other	63	9.7

microscopy, gram staining, or culture revealed no pathogenic organisms, it was labelled vaginitis of unknown origin. Syphilis was diagnosed when the VDRL test was positive in 1:8 dilution or more.²² Pelvic inflammatory disease was diagnosed when adnexae were palpable and tender on vaginal examination, with or without restricted mobility of uterus. Jeffcoate's criteria²³ were used for various other gynaecological conditions.

Anaemia in females was defined as a haemoglobin of 11.5 g/dl or less.²⁴ Iron deficiency was diagnosed on the basis of hypochromia and microcytosis in peripheral smear. Vitamin A deficiency was diagnosed by identification of conjunctival xerosis or Bitot's spots. Sickle cell disease was diagnosed by the sickling test, but homozygous disease and trait could not be distinguished, in the absence of electrophoresis.

Because of the sensitive nature of the survey and the cultural norms of these traditional societies, we aimed conservatively at 50% coverage of the eligible women. In the event, 654 out of 1104 (59%) turned up to participate and the investigations were completed in all but 4. Although every effort was made to persuade both symptomatic and symptomless women to participate, selection might have arisen. We therefore visited a 25% random sample of non-participant women at home to record their personal, obstetrical, and contraceptive histories, presence or absence of gynaecological symptoms (vaginal discharge and menstrual disorders), and reasons for non-participation.

The data were analysed by use of the SPSS-PC package on a PC-XT computer.

RESULTS

The mean age of the 650 women was 32.11 years (SD 13.46). 92 (14%) were unmarried, 462 (71%) were married and living with husbands, 28 (4%) were separated, and 68 (11%) were widows. Thus 558 women were married at the time of study or had been in the past. 281 (44%) were farmers, 149 (23%) were landless labourers, 93 (14%) were housekeepers, 21 (3%) had regular jobs, 46 (7%) were students, and 55 (9%) were in other occupations. 436 (68%) were illiterate; 84 (13%) had schooling up to 4th standard, 52 (8%) up to 7th standard, and 65 (10%) up to 10th standard, and 8 (1%) had college education.

299 (46.0%) belonged to middle castes and 123 (18.9%) to lower castes; 138 (21.3%) were of tribal origin and 28 (4.3%) from nomadic tribes; and 62 (9.5%) were of other castes or non-Hindu.

28 (4%) of the subjects had not reached menarche, 468 (72%) were menstruating, and 154 (24%) had reached menopause. The mean gravidity was 3.99 (SD 2.77) and mean parity was 3.75 (SD 2.74). 48 women were pregnant at the time of study. Out of 462 women who were married and living with their husband, 254 (55%) were using one of the following contraceptive methods: condom 5, 'Copper-T' 7, withdrawal 2, safe period 2, pills 5, abdominal tubectomy 24, laparoscopic tubectomy 58, vasectomy 151; thus female contraceptive methods were used by 94 at the time of study and had been used by a further 29 in the past, total 123.

TABLE II—CHARACTERISTICS OF PARTICIPANTS COMPARED WITH 25% RANDOM SAMPLE OF NON-PARTICIPANTS

Characteristic	Participants (n = 650)	Non-participant sample (n = 105)
Mean age (yr)	32.11	34.3
Gravidity	3.99	3.84
Gynaecological symptoms		
Vaginal discharge	13.5%	8.25%
Scanty periods	12.6%	16.4%
Irregular periods	6.9%	14.9%
Profuse periods	4.9%	4.5%
Dysmenorrhoea	15.1%	13.4%
Bad obstetric history in ever-married	37.6%	51.1%
Current use of female contraception in ever-married	18.2%	11.36%

A total of 360 women (55.38%) had one or more gynaecological or sexual complaints (table 1). In addition, many complained of two non-specific but related symptoms—low backache (197) and lower abdominal pain (86). The characteristics and symptoms of those who participated did not differ greatly from those of the random sample of non-participants (table 11). The main reasons for non-participation were: no gynaecological complaints 27/105; "I am too old for such things" 17/105; frightened of gynaecological interview or examination 16/105; out of village at time of study 15/105; unmarried, so did not want to be examined 4/105.

The gynaecological and sexual diseases found in the survey are summarised in table 111. The 650 women had a total of 2344 gynaecological diseases—ie, an average of 3.6

TABLE III—GYNAECOLOGICAL AND SEXUAL DISEASES (n = 650)

Diagnosis	No	%
Primary amenorrhoea	7	(1.07)
With müllerian duct aplasia [†]	4	(0.61)
Without müllerian duct aplasia	3	(0.46)
Secondary amenorrhoea	22	(3.40)
Functional uterine haemorrhage	6	(0.92)
Oligomenorrhoea/hypomenorrhoea	105	(16.15)
Polymenorrhoea	4	(0.61)
Menorrhagia	71	(10.92)
Dysmenorrhoea	269	(41.38)
Irregular periods	60	(9.23)
Primary sterility	20	(3.08)
Secondary sterility	24	(3.69)
Frigidity	57	(8.77)
Dyspareunia	43	(6.62)
Vaginismus	47	(7.23)
Senile vaginitis	20	(3.08)
Trichomonas vaginitis	78	(11.98)
Candida vaginitis	190	(29.23)
Bacterial vaginitis	347	(53.38)
Vaginitis of unknown origin	23	(3.54)
Cervical erosion	255	(39.23)
Cervicitis	272	(41.85)
Endocervicitis	67	(10.31)
Pelvic inflammatory disease	157	(24.15)
Ovarian cyst	6	(0.92)
Cystic ovary	15	(2.31)
Cervical dysplasia	7	(1.07)
Cervical metaplasia	8	(1.23)
Cervical polyp	10	(1.54)
Syphilis	68	(10.46)
Leucorrhoea	22	(3.40)
Leucoplakia of vulva	4	(0.61)
Gonorrhoea	2	(0.31)
Cystocele	3	(0.46)
Vulvitis	2	(0.31)
Fibroid uterus	1	(0.15)
Carcinoma of cervix	0	—
Other gynaecological diseases	52	(7.98)

*Out of 468 menstruating; †out of 462 living with husbands; ‡out of 182 over 40 yr; §out of 558 ever married.

TABLE IV—PREVALENCE OF GYNAECOLOGICAL DISEASES AMONG WOMEN WITH AND WITHOUT GYNAECOLOGICAL SYMPTOMS (EXCLUDING PAIN IN LOWER ABDOMEN AND BACKACHE)

	Symptomatic	Symptom-free	Total
With diseases	355	244	559
Without diseases	5	46	51
Total	360	290	650

TABLE V—SELECTED GYNAECOLOGICAL DISEASES VERSUS PAST OR PRESENT USE OF FEMALE CONTRACEPTIVE METHODS IN EVER-MARRIED (n = 558)

Diagnostic groups	Contraceptive history present (n = 123)	Contraceptive history absent (n = 435)	χ^2 p
	No (%)	No (%)	
Menstrual diseases	92 (74.8)	202 (46.4)	29.81 <0.001
Sexual problems	16 (13.0)	28 (6.4)	4.83 <0.05
Vaginal infections	120 (97.6)	352 (80.9)	19.11 <0.001
Cervical diseases	102 (82.9)	292 (67.1)	10.78 <0.01
Pelvic inflammatory disease	59 (48.0)	100 (23.0)	28.15 <0.001

per woman. 559 (92.2%) had one or more gynaecological or sexual diseases.

Premarital sex among the unmarried was diagnosed when the hymen was torn and the vagina easily admitted two fingers (girls and women in this area do not use tampons). On this evidence 43 out of 92 (46.7%) of the unmarried girls had had sexual intercourse.

The most common non-gynaecological conditions found in the survey were anaemia (in 91%), iron deficiency anaemia (83%), sickle cell disease (7%), vitamin A deficiency (58%), filariasis (12%), pulmonary tuberculosis (2%), leprosy (10%), and urinary tract infection (4%).

History of gynaecological examination was used as an indicator of professional gynaecological care in the past. Only 51 (7.8%) had ever had such an examination.

Table IV gives the prevalence of gynaecological diseases in women with and without symptoms. As an indicator of gynaecological disease, a gynaecological symptom had a sensitivity of 59%, a specificity of 90%, positive predictive value 99%, negative predictive value 16%.

Table V indicates that gynaecological diseases were more frequent in women with a contraceptive history. Of the 82 who had had tubectomies, 54 (66%) attributed symptoms to this procedure compared with 16 of 151 blaming their husband's vasectomy. The numbers with intrauterine devices (7) were too small for comment.

DISCUSSION

In this cross-sectional survey, the prevalence of gynaecological or sexual diseases (92%) and the average number of such diseases per woman (3.6) were remarkably high. Infections constituted 50% of the burden—vaginitis, cervicitis, pelvic inflammatory disease—and the rates would doubtless have been even higher if we had used more refined tests. Menstrual disorders form another big group and infection of the genital tract may be a contributory cause here. Fibroid uterus was very rare, and not a single case of carcinoma was found.

The very high prevalences of iron deficiency anaemia (83%) and vitamin A deficiency (58%) were due to the poor economic status of this area in general and of women in particular. The area is endemic for filariasis and leprosy.

One noteworthy finding was that even symptomless women were very likely to have reproductive tract disease (table IV). Symptoms are thus an insensitive tool for screening, in the presence of a high prevalence rate. The negative predictive value is also very poor. The gynaecological complaints volunteered by women during history-taking were often underestimates—especially with regard to vaginal discharge and menstrual troubles—because of the concepts of normality. Thus only 98 women complained of excessive pain during menstruation, but on careful inquiry 269 were found to experience dysmenorrhoea.

There was some truth in the women's perception that contraception causes gynaecological troubles—there was a statistically significant association between certain gynaecological diseases and past or present female contraception. But this can explain only a small proportion of the morbidity since 78% of the ever-married women had never used any such contraception, yet had a high prevalence of disease.

Unfortunately the diseases that do not kill tend to be neglected. The non-neoplastic gynaecological diseases come in this category, but they could give rise to: difficulty in occupational and domestic work because of chronic backache (present in 30.3% women); fetal wastage due to abortions and stillbirths; neonatal infections from birth canal infections; anaemia due to menorrhagia; marital disharmony due to sterility and dyspareunia; anxiety and stress; and harm to the reputation of family planning methods due to aggravation of pre-existing gynaecological disease (this probably accounts for the very low use of intrauterine devices, despite intense promotion by the state government).

Nearly half the unmarried girls had had sexual intercourse. This rather unexpected finding in a traditional Hindu society indicates that there is a need to provide adolescent sexual health education and care even in the villages.

AIDS has not been reported from this part of India. But when the infection arrives, what will be the effect of high prevalence of vaginitis and cervical erosion on the transmission of infection? Will these lesions facilitate the entry of virus by the vaginal route? This aspect needs looking into.

Only 7.8% of the women had ever had a gynaecological examination in the past, even though 55% were aware of having gynaecological disorders. Obviously there is a large gap between the need and the care. Similar epidemiological studies are needed in other areas, with closer attention to aetiology and women's perceptions. Finally reproductive care to women needs to be broadened beyond maternity care and family planning.

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