Common genital complaints in women: the contribution of psychosocial and infectious factors in a population-based cohort study in Goa, India

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Background   The genital complaint of abnormal vaginal discharge is common in South Asia. We describe the risk factors for the incidence of the complaint in women of reproductive age.

Method   Population-based cohort study in Goa, India. Out of 3000 randomly selected women, 2494 women participated. The outcome was an incident case of the complaint of abnormal vaginal discharge at 6 months (T1) and 12 months (T2) review.

Results   In total 71 (3.6%, 95% CI 2.8–4.5%) of the 2000 eligible women reviewed at T1 reported the complaint; and 80 (4.0%, CI 3.2–5.0%) of the 1999 women who did not complain of abnormal vaginal discharge at T1 reported it at T2. Multivariate logistic regression analysis identified the following factors as associated with the complaint: younger age (OR 0.26, CI 0.1–0.5 for women aged 40–49 years compared with women aged 18–24 years); illiteracy (OR 1.48, CI 0.9–2.4); religion (Muslim women OR 3.15, CI 1.7–6.0 compared with Hindu women); women's concerns regarding their spouse's extramarital relationships (OR 3.46, CI 1.2–10.0); current BV infection (OR 1.87, CI 1.2–2.9); somatoform complaints (OR 3.30, CI 1.7–6.5 for the highest somatoform score quartile compared with the lowest); and depression and anxiety (OR 1.55, CI 0.9–2.6 for the highest mental health score quartile compared with the lowest).

Conclusions   Reproductive and sexual health programmes must strengthen the capacity of practitioners to assess and treat bacterial vaginosis and psychosocial problems in women with complaints of abnormal vaginal discharge.

Keywords

Abnormal vaginal discharge is a common genital complaint; in the recent Indian National Family Health Survey, 30% of currently married women reported having the complaint in the previous 3 months.[1] Traditionally, the complaint has been assumed to be the result of reproductive tract infections (RTI); thus, algorithms for the syndromic approach to management of RTIs begin with the complaint.[2] However, there is now a substantial body of evidence indicating that the complaint of vaginal discharge is only weakly associated with RTIs.[3,4] The reason why so many women complain of vaginal discharge remains unclear. This is a question of considerable public health importance, because the treatments currently received are not based on the aetiology of this prevalent complaint.

We have hypothesized that women's reproductive and genital complaints may in fact be idioms of distress for a wider range of concerns, encapsulating social and psychological

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stressors.[5] In this context, the complaints may be similar to psychosomatic complaints frequently encountered in Western populations, for example, pelvic pain, tiredness, and back pain. If our hypothesis is true, then this would have potentially significant implications for the way reproductive health programmes are delivered; at present, they focus almost entirely on women's sexual behaviour, ignoring virtually all other aspects of their health, in particular psychosocial aspects.

We set out to test this hypothesis through a population-based cohort study in India. Previously published analyses, in this journal, from the cross-sectional recruitment data showed an association between the complaint of vaginal discharge and non-infectious factors, notably poor mental health: common mental disorders (CMD), such as depression and anxiety, and somatoform disorders.[6] Factors associated with gender disadvantage, including violence and lack of autonomy, and RTI were weakly associated with the complaint. In a cross-sectional design, however, it is difficult to infer causal direction; thus, as a commentary to that paper argued, it is possible that women with complaints were more likely to develop mental disorders.[7] In this paper we present the results of the longitudinal data from this study, describing the socio-economic, psychosocial, infectious, and reproductive risk factors for new episodes of the complaint of abnormal vaginal discharge. We think that this is the first published data from a population-based cohort study investigating the multifactorial aetiology of common reproductive and genital complaints in women in a developing country.

Method

Study design
Population-based cohort study.

Setting
The study was located in the state of Goa on India's west coast. Goa has a population of 1.4 million.[8] In the recent National Family Health Survey, a quarter of the women in the population reported an abnormal vaginal discharge.[1]

Sample
Details of the sample and sampling procedure have been published elsewhere.[6] The study sample comprised 3000 women randomly selected from a sampling frame of all women aged 18–45 years, living in nine villages comprising the catchment covered by the Aldona Primary Health Centre (PHC) in Goa.

Sample recruitment and follow-up
Recruitment took place over a 19 month period from November 2001 to June 2003. Details of the recruitment procedure and data collection are described in earlier publications.[9,10] All subjects who consented to participate and completed the recruitment procedure were reviewed 6 and 12 months after recruitment. The two mandatory requirements for participation, at each round, were a face-to-face interview with a trained researcher and the collection of vaginal or urine specimens for the diagnosis of RTI. For participants who consented to a gynaecological examination, two high vaginal swabs or first-void urine specimens (for PCR) and two vaginal swabs (for smears and culture) were collected.[11]

Baseline (T0) measures
We employed a semi-structured interview to elicit data on the woman's personal and health history. Details are described in our previous publications.[6,10,12] The data were organized as follows:

- *Socioeconomic–demographic factors:* Age, education, religion, and marital status, and economic status assessed through questions on the type of housing, access to water and a toilet, household income, employment status, indebtedness, and the experience of hunger in the previous 3 months.
- *Gender disadvantage factors*: Married participants were asked about age at marriage; having had a pregnancy during adolescence (<20 years); the lifetime experience of verbal, physical, and sexual violence by the spouse and concerns about their spouse's extramarital relationships and substance-use habits. Violence experienced from any other person was elicited from all participants. We asked four questions concerning the autonomy the woman had to make decisions regarding visiting her mother's or friend's home, seeing a doctor, keeping money aside for personal use, and having time to do things for herself. The responses were combined to generate an Autonomy Score (range 0–8). We also asked questions about the level of engagement, in the past 3 months, with four social activities: religious activities, participation in a community/voluntary group, social outings to meet friends/relatives, and having friends/relatives visit her. The responses to these four items were combined to generate a Social Integration Score (range 0–16). Recruitment data showed moderate levels of internal consistency of the two scales (Autonomy: Cronbach's alpha = 0.69, $P < 0.0001$; Social Integration: Cronbach's alpha = 0.57, $P < 0.001$).
- *Psychological factors*: Two measures were used for psychological health. The Scale for Somatic Symptoms was used to measure somatic symptoms, which are features of Somatoform Disorders.[13] It consists of 20 symptoms in four domains: pain-related symptoms such as headache; sensory symptoms such as tingling; non-specific symptoms such as tiredness; and biological function symptoms such as poor sleep. The scores of these four scales were combined to generate a Somatoform Disorder symptom score (range 0–40) for each participant. The second measure was the Revised Clinical Interview Schedule (CISR), a structured interview for the measurement and diagnosis of CMD in community and primary care settings,[14–17] which has been extensively used in India and other developing countries. The interview generates a total score (range 0–57), as a measure of depressive and anxiety symptoms.
- *Reproductive and sexual health factors*: All participants were asked about pregnancies; numbers of pregnancies and their outcome, and history of pregnancies and abortions in the previous 12 months. Married participants were asked about their experience of difficulty in conception in the previous 12 months and use of contraceptives. Participants were also asked about the experience of abnormal vaginal discharge at the time of interview; definition of this symptom was derived from recent guidelines for reproductive and sexual health research.[18] The diagnosis of RTIs was established using the following tests: for chlamydial and gonococcal

infections, PCR using the Roche Amplicor system (Roche); for *Trichomonas vaginalis*, culture using the InPouch TV Culture Kit (Biomed Diagnostics); for bacterial vaginosis, the reading of Gram-stained slides based on Nugent's score[19]; and for candidiasis, the reading of Gram-stained slides using a rating of the density of yeast cells seen per high power field.

Measures at 6 month (T1) and 12 month review (T2)

The following data were collected at each review, using the same methods as described above for recruitment.

- Change in marital status in the past 6 months.
- Pregnancy in last 6 months.
- Current use of specific methods of contraception.
- Mental health: Somatoform Symptoms Disorder scale and the Revised Clinical Interview Schedule.
- RTI diagnoses, based on vaginal and/or urine specimen collection.
- The report of current abnormal vaginal discharge in self (main outcome measure). The presence of the complaint was ascertained through the question: 'At any time in the past 3 months, have you experienced a discharge from your vagina that was abnormal in amount, in colour or in smell'. Participants who reported a discharge were then asked if the complaint was currently being experienced.

Analysis

Separate data records were created for each woman, corresponding to the two time periods T0–T1 and T1–T2. Women were eligible for analysis in Period T0–T1 if they did not have the complaint of abnormal vaginal discharge at T0 and were eligible for analysis in Period T1–T2 if they did not have the complaint of vaginal discharge at T1. For Period T0–T1, records consisted of data on the complaint of abnormal vaginal discharge at T1, presence of RTIs at T1, and baseline (T0) socioeconomic, mental health and gender risk factors. For Period T1–T2, records consisted of data on the complaint of abnormal vaginal discharge at T2, presence of RTIs at T2, mental health measures at T1, and baseline (T0) sociodemographic and gender risk factors. Numerical measures such as age, Somatoform disorders, Autonomy and CIS-R scores were converted to categorical variables (tertiles or quartiles) based on their distributions.

Multiple logistic regression was used. First, a multivariate model for the association of the complaint with socioeconomic–demographic factors was built by including those factors with $P \leq 0.1$ in univariate analyses and then retaining only those whose P-values remained at $P \leq 0.1$; age and marital status were retained on an a priori basis. Next, the associations of the complaint with each factor in the other domains were assessed, adjusting for the socioeconomic–demographic factors identified in the multivariate model. Finally, a composite model was formed by adding all factors with an adjusted $P \leq 0.1$ to the multivariate model, and retaining those whose P-values remained at $P \leq 0.1$, together with age and marital status. Odds ratios (adjusted as appropriate), 95% confidence intervals (CI), and two-tailed P-values are presented.

Ethical considerations

The study proposal received approval from the ethical committee of the London School of Hygiene & Tropical Medicine and from the Independent Ethics Commission, Mumbai (India). Participants received copies of their laboratory reports and were offered free care by the study gynaecologists and mental health professionals based on the findings of the data collection at each round.

Results

Of the 3000 randomly selected women, 2494 consented to participate in the study (83.1%). Details of the recruited sample have been published elsewhere.[9,10] At T1 (mean review interval 24 weeks, SD 1.4 weeks), 2316 participants completed the review procedure (92.9%), of whom 2000 did not have the complaint at T0 and so were eligible for incidence analysis in period 1 (T0–T1). At T2 (mean review interval 52.2 weeks, SD 2.3 weeks), 2167 participants completed the review procedure (86.9%). Of these, 1999 did not have the complaint at T1 and so were eligible for incidence analysis in Period 2 (T1–T2). There was no difference between participants who were reviewed and those who were lost to follow-up at either review on the following baseline characteristics: education; household family income; CISR score; any RTI; any STI; complaint of abnormal vaginal discharge. However, younger, unmarried participants, and migrants, were more likely to be lost to follow-up, because they had moved away for occupational, educational, or marital reasons. The numbers of participants eligible for analyses of incidence of the complaint is shows in Figure 1.

Incidence of the complaint of abnormal vaginal discharge

Totally 71 (3.6%, CI 2.8–4.5%) of the 2000 eligible women reviewed at T1 reported abnormal vaginal discharge, while 80 (4.0%, CI 3.2–5.0%) of the 1999 eligible women reported experiencing this complaint at T2. There was no difference in the incidence between the two periods ($P = 0.45$).

Associations with sociodemographic/economic risk factors (Table 1)

In univariate analyses, age, education, illiteracy, and religion were associated with the incidence of the complaint of abnormal vaginal discharge. In the multivariate model, younger age (P-trend = 0.005; OR = 0.34, CI 0.2–0.7 for those aged ≥40 compared with <25 years), illiteracy (OR = 1.79, CI 1.2–2.8), and being a Muslim (OR = 3.59, CI 2.0–6.5 compared with being Hindu) were independently associated with the outcome.

Associations with psychosocial risk factors (Table 2)

Incidence of vaginal discharge was associated with a number of factors indicative of gender disadvantage. After adjustment for socioeconomic variables, there was strong evidence for an association with concern regarding the spouse's extramarital sexual relationships, moderate evidence for non-spousal physical violence, and weak evidence for spousal sexual violence and verbal violence. Non-spousal violence was most commonly attributed to in-laws, for married and divorced/separated women, and parents for unmarried women. We also
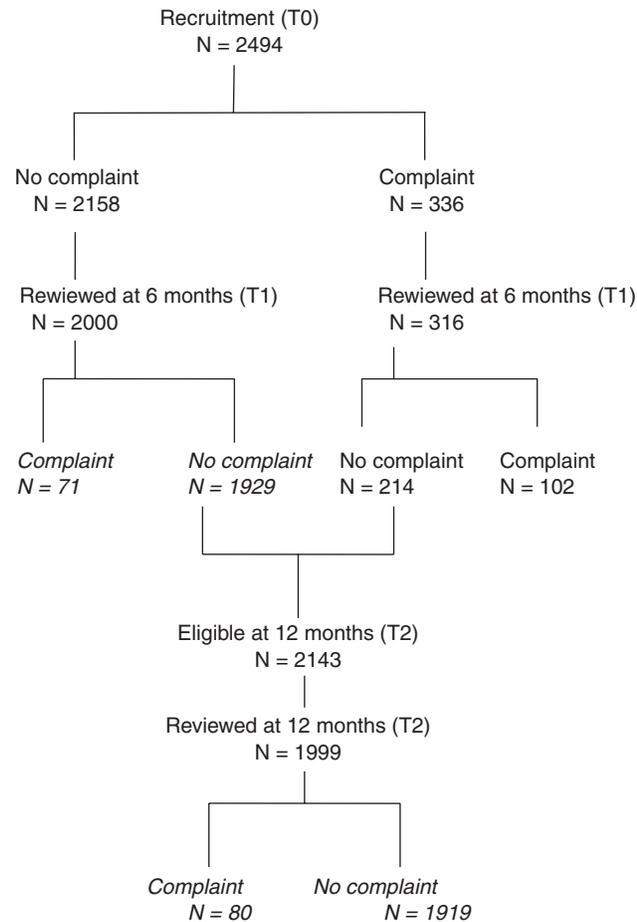
Figure 1 Flow chart of participants in the study

found strong associations with measures of poor mental health (lifetime suicide attempts, high CISR scores, high somatoform symptom scores), after adjustment for socioeconomic/demographic variables.

Associations with reproductive and sexual health factors (Table 3)

Table 3 shows a strong association of vaginal discharge with bacterial vaginosis, but with no other infection.

Final multivariate model

Variables that were independently associated with vaginal discharge are younger age, illiteracy, being of Muslim or Christian religion (compared to Hindu), concern about spouse's extra-marital affairs, and poor mental health (high somatoform and CISR scores) and current BV infection (Table 4).

Discussion

We report the findings of a population-based cohort study of the risk factors for the incidence of the complaint of abnormal vaginal discharge, the commonest genital complaint in women in South Asia. Our study was set in a multicultural, mixed rural–urban population in West India. Incident vaginal discharge was more common in younger and illiterate women. In the final model, younger age, indicators of marginalization (illiterate and Muslim women), marital disharmony (indicated by concern about husband's extramarital relationships), bacterial vaginosis and poor mental health were all independent risk factors. We conclude, therefore, that the complaint of abnormal vaginal discharge has a multifactorial aetiology with both infectious factors, principally bacterial vaginosis, and psychosocial factors, notably social disadvantage and poor mental health contributing to the risk.

In the absence of affordable and feasible diagnostic tests for RTIs, the complaint of abnormal vaginal discharge has become the focus of the syndromic approach to the control of RTI in developing countries; women with the complaint are presumed to suffer from these infections and treated accordingly. Our study shows that BV is the only RTI associated with the complaint. Although we found an independent association between concern regarding the husband's extramarital relationships and the complaint, there was no association of this complaint with STI; thus, it seems likely that the reported association was a reflection of marital disharmony and the worry of an infection as a result of her husband's relationships.

Three related mechanisms may explain how social disadvantage and poor mental health lead to the complaint of abnormal vaginal discharge. First, the complaint may be a somatic presentation of depressive and anxiety disorders. Physical symptoms, such as tiredness, are the commonest clinical presentation of depressive and anxiety disorders.[20,21] Gynaecological complaints, such as chronic pelvic pain, are often associated with these disorders.[22] The process of somatization, i.e. the presentation of mental distress in physical forms, is complex and mechanisms include the misinterpretation of normal bodily phenomena due to the heightened awareness associated with CMDs and heightened autonomic nervous system activity, which may increase the production of vaginal secretions.[23]

The second pathway is that the complaint may be a cultural idiom to explain other somatic complaints, particularly tiredness, which often co-exist with the complaint. Narrative evidence from women in India shows that women typically attribute their tiredness to the discharge.[5,24] Vaginal discharge is a genital fluid, which is imbued with significance in terms of its perceived vitality in Asian cultures; in stressful life situations, women may perceive a normal, physiological discharge as being abnormal, as a way to seek meaning for their unpleasant emotional and somatic experiences (such as misery and tiredness).[25]

Third, the complaint is a type of 'medically unexplained symptom', a pantheon of common somatoform complaints, which are incompatible with relevant positive physical signs and/or laboratory investigations supporting the diagnosis of a physical illness.[26,27] Typically, these complaints co-exist with one another and are associated with CMDs.[28] Our study shows that both these characteristics are also true of the complaint of abnormal vaginal discharge. Somatoform complaints may even be considered as a way of coping with intolerable personal difficulties for some patients. For example, the complaint of abnormal vaginal discharge may have symbolic and functional value for a woman, providing her with a justifiable reason for

Table 1 Association of socioeconomic and demographic characteristics with 151 incident complaints of abnormal vaginal discharge among 2196 women

	N (%) with complaint	OR	95% CI	P^t (trend)
Age group (years)				
18–24	40 (9.4)	1		0.002^t
25–29	27 (7.0)	0.73	0.4–1.2	
30–34	38 (8.6)	0.90	0.6–1.4	
35–39	19 (4.5)	0.44	0.3–0.8	
40–49	27 (5.2)	0.51	0.3–0.8	
Marital status				
Married	104 (6.7)	1		0.77
Single	41 (7.5)	1.15	0.8–1.7	
Divorced/widowed	5 (7.0)	1.02	0.4–2.6	
Changed marital status from single to married	0 (0.0)	2.96	0.4–23.6	
Changed marital status from married to divorced/widowed	1 (12.5)	2.42	0.3–18.9	
Language				
Konkani	126 (6.9)	1		0.91
Other	25 (7.0)	1.03	0.7–1.6	
Education				0.07^t
None	22 (10.1)	1		
1–9 years	59 (6.9)	0.66	0.4–1.1	
10–14 years	58 (6.6)	0.64	0.4–1.1	
15–23 years	12 (5.0)	0.48	0.2–1.0	
Literate				
Yes	120 (6.4)	1		0.03
No	31 (10.0)	1.61	1.1–2.4	
Ethnicity				
Goan	134 (6.7)	1		0.44
Non-Goan	17 (8.2)	1.23	0.7–2.1	
Religion				
Hindu	99 (6.0)	1		<0.001
Christian	37 (7.7)	1.29	0.9–1.9	
Muslim	15 (21.7)	4.19	2.4–7.5	
Occupation				
Homemaker	94 (6.4)	1		0.15
Employed	41 (8.8)	1.44	1.0–2.1	
Other	16 (6.1)	0.94	0.5–1.6	
Income (Indian Rupees)				
<2000	55 (7.3)	1		0.20^t
2000–2999	28 (7.5)	1.03	0.6–1.6	
3000–4999	39 (7.2)	0.99	0.7–1.5	
5000–9999	22 (6.2)	0.85	0.5–1.4	
>10000	7 (4.1)	0.55	0.3–1.2	
Housing				
Own home	130 (6.6)	1		0.13
Rented	21 (9.2)	1.46	0.9–2.3	

Table 1 continued

	N (%) with complaint	OR	95% CI	P^t (trend)
Toilet in home				
In house	57 (6.3)	1		0.32
Outside house	94 (7.3)	1.19	0.8–1.7	
Tap-water in house				
Yes	62 (6.4)	1		0.39
No	89 (7.3)	1.16	0.8–1.6	
In debt				
No	94 (6.6)	1		0.66
Yes	55 (7.5)	1.13	0.8–1.6	
Hunger in past 3 months				
No	142 (6.8)	1		0.57
Yes	9 (8.0)	1.23	0.6–2.4	
Difficulty managing financially				
No	102 (6.8)	1		0.80
Yes	49 (7.1)	1.05	0.7–1.5	

avoiding unwanted sexual intercourse or the permission to receive personal attention from a health professional and obtain medical treatment. Even if they do serve such a purpose, somatoform complaints typically do cause distress and varying degrees of disablement.

Our study's methodological strengths include its population base, the high follow-up rates, the use of gold standard and quality monitored laboratory tests, and the use of gold standard measures of mental health. Limitations include selection bias at recruitment and systematic loss of younger migrant women during follow up. Furthermore, we did not measure all STI exposures or other possible causes of the complaint such as nutritional factors; however, the RTI we did measure are those that are clinically considered as the major infectious causes of vaginal discharge. Furthermore, our study is not able to explore the causal pathways between some of the risk factors and the complaint; for example, although our finding that Muslim women are at greater risk may be attributable to their disadvantaged status in the context of the study setting, further research is needed to study what specific sociocultural factors play a role on the causal pathway.

Our study is, to the best of our knowledge, the first population-based cohort study investigating the aetiology of one of the most common, and disabling, reproductive and sexual symptoms affecting women in developing countries. The aetiology of the complaint is multifactorial with BV and psychosocial disadvantage being independent risk factors. While some of these factors may not be remediable, at least in the context of health policy, others can be targeted for prevention and treatment. Thus, reproductive health programmes must put emphasis on reaching out to women who are disadvantaged, for example those who are poor (and illiterate) and those who belong to marginalized communities. Our findings highlight the gap between the person's subjective experience of illness and the biomedical causal category (the 'disease') used to attribute medical significance to the

Table 2 Association of psychosocial factors with 151 incident complaints of abnormal vaginal discharge among 2196 women

	N (%)	Adjusted OR[a]	95% CI	P[t] (trend)
Age at marriage[a] (years)				
<18	16 (12.4)	1		0.53[t]
18–20	26 (6.8)	0.62	0.3–1.2	
21–24	37 (6.5)	0.75	0.4–1.5	
≥25	26 (5.3)	0.66	0.3–1.4	
Husband verbal abuse[b]				
No	83 (6.2)	1		0.10
Yes	22 (9.7)	1.53	0.9–2.5	
Husband physical abuse[b]				
No	88 (6.2)	1		0.13
Yes	17 (11.2)	1.57	0.9–2.7	
Husband sexual abuse[b]				
No	98 (6.5)	1		0.08
Yes	7 (13.0)	2.24	1.0–5.0	
Concern about husband's habits[b]				
No	78 (6.3)	1		0.43
Yes	27 (8.1)	1.21	0.8–1.9	
Concern about husband's affairs[b]				
No	100 (6.4)	1		0.01
Yes	5 (27.8)	4.48	1.6–12.6	
Social integration				
High	56 (7.8)	1		0.16
Medium	39 (5.5)	0.67	0.4–1.0	
Low	56 (7.3)	0.90	0.6–1.4	
Autonomy				
High	50 (6.8)	1		0.97[t]
Medium	66 (7.0)	1.01	0.7–1.5	
Low	35 (6.8)	0.94	0.6–1.5	
Violence (from someone other than spouse/ partner)				0.04
No	137 (6.6)	1		
Yes	14 (12.0)	1.89	1.1–3.3	
CISR (mental health) score				0.001[t]
0	71 (5.7)	1		
1–2	18 (7.6)	1.02	0.6–1.8	
3–4	8 (4.5)	1.53	0.9–2.8	
≥5	30 (9.2)	2.19	1.4–3.4	
Lifetime suicidal attempts				0.04
No	120 (6.1)	1		
Yes	7 (18.9)	3.27	1.2–8.6	
Somatoform symptom score				<0.001
0	11 (2.9)	1		
1–3	41 (5.9)	2.50	1.4–4.6	
4–7	42 (7.2)	2.18	1.1–4.1	
≥8	33 (9.7)	3.72	2.0–6.9	

[a] Adjusted for age, literacy and religion.
[b] Among 1570 married women only of whom 105 had the outcome.

Table 3 Association of reproductive and sexual health factors with 151 incident complaints of abnormal vaginal discharge among 2196 women

	N (%)	Adjusted OR[a]	95% CI	P
Ever pregnant				
Ever	104 (6.7)	1		0.75
Never	47 (7.3)	0.87	0.4–2.0	
Pregnant in past year				
No	134 (6.8)	1		0.57
Yes	17 (7.3)	0.85	0.5–1.5	
Age at first pregnancy[a]				
<20	21 (9.3)	1		0.87
20–29	77 (6.5)	1.01	0.6–1.8	
30–39	6 (4.3)	0.80	0.3–2.2	
Number of pregnancies[b]				
1	51 (7.4)	1		0.90
2	44 (6.2)	1.03	0.7–1.6	
3+	9 (5.8)	0.86	0.4–1.9	
Induced abortion[b]				
No	76 (6.2)	1		0.10
Yes	28 (8.4)	1.49	0.9–2.3	
Infertility in past year[a]				
No	99 (6.9)	1		0.30
Yes	6 (4.3)	0.65	0.3–1.5	
Main method of contraception[c]				
None	31 (5.9)	1		0.97
Sterilized	29 (7.0)	1.16	0.7–2.0	
IUCD	4 (6.2)	1.24	0.4–3.6	
Condom	12 (8.9)	1.32	0.7–2.6	
Other	25 (6.9)	1.24	0.7–2.1	
Contraceptive use currently[c]				
Yes	70 (7.0)	1		0.89
No	25 (5.6)	1.10	0.7–1.7	
Undergone hysterectomy/ menopause	6 (6.1)	0.92	0.3–2.5	
Any STI (NG/CT/TV)				
No	117 (6.3)	1		0.31
Yes	2 (4.7)	1.68	0.7–4.3	
Bacterial vaginosis				
No	91 (5.7)	1		0.008
Yes	26 (9.2)	1.82	1.2–2.8	
Candidiasis				
No	105 (6.0)	1		0.24
Yes	12 (10.1)	1.41	0.8–2.5	

[a] Adjusted for age, marital status, literacy and religion.
[b] Among 1550 ever-pregnant women of whom 58 had the outcome.
[c] Among 1552 married women only of whom 52 had the outcome.

experience.[29] Health care providers need training on consultation skills to address illness experiences, on assessment of mental health and other physical complaints, and the routine testing for bacterial vaginosis, paving the way for an

Table 4 Final multivariate model of factors associated with incident complaints of vaginal discharge

	Adjusted OR[a]	95% CI	p[t] (trend)
Age group (years)			
18–24	1		0.0001[t]
25–29	0.50	0.3–0.9	
30–34	0.58	0.3–1.1	
35–39	0.25	0.1–0.5	
40–49	0.26	0.1–0.5	
Marital status			
Married	1		0.72
Single	1.03	0.1–7.6	
Divorced/Widowed/Separated	1.41	0.2–11.6	
Change from Single to Married	3.36	0.2–62.1	
Change from Married to Divorced/Widowed/Separated	3.45	0.4–28.5	
Literate			
Yes	1		0.10
No	1.48	0.9–2.4	
Religion			
Hindu	1		0.002
Christian	1.55	1.0–2.3	
Muslim	3.15	1.7–6.0	
Concern about husband's affairs[b]			
No	1		0.04
Yes	3.46	1.2–10.0	
Somatoform symptom score			
0	1		0.003[t]
1–3	2.51	1.3–4.7	
4–7	2.10	1.0–4.2	
≥8	3.30	1.7–6.5	
Mental health (CISR score)			
0	1		0.10[t]
1–2	0.90	0.5–1.7	
3–4	1.28	0.7–2.4	
≥5	1.55	0.9–2.6	
Current BV infection			0.006
No	1		
Yes	1.87	1.2–2.9	

[a]Adjusted for age, marital status, literacy, and religion.
[b]Among married women.

aetiological treatment algorithm. There is a growing body of evidence demonstrating that simple, and affordable, treatments are available both for somatoform complaints and CMDs in developing countries.[30,31] This evidence must be used as the basis for strengthening the mental health skills of reproductive and sexual health practitioners. This dual approach, targeting both the infectious and psychosocial risk factors for the complaint, may offer the most effective public health strategy to reduce the burden of reproductive and sexual health complaints in the region.

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