



Women's Knowledge and Experience of Abnormal Vaginal Discharge Living in Estates in Colombo District, Sri Lanka

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Abstract

Objectives: Awareness about the causes for excessive vaginal discharge is very important to detect pathological entities from physiological forms in early stages to prevent associated complications. This study was aimed to describe knowledge and experience related to vaginal discharge among females aged 18 to 49 years living in estate communities in the Colombo District, Sri Lanka.

Materials and Methods: This was a community based cross-sectional study of 550 females using an interviewer-administered questionnaire. Both descriptive and chi square analysis were used for data analysis.

Results: Nearly 78% of the participants were Tamil (n=428) and the mean age was 33.8 (SD: ± 8.15) years. For the knowledge on vaginal discharge, 98.5% had obtained <50% and only 8 (1.5%) had a score between 50%-75%. A significant difference in knowledge score was observed with respect to the family type ($P=0.031$). Main cause for excessive vaginal discharge was high body temperature (64.7%). Fifty-four percent reported that they have experienced excessive vaginal discharge and only 30% had sought medical advice (n=165). Those who had other accompanying symptoms such as itchiness and scratching, lower abdominal pain, burning sensation and pain during intercourse had sought treatment from a general practitioner ($P<0.05$). There was poor treatment seeking behavior among the females aged below 35 years ($P=0.027$). Main reason for not seeking medical advice was feeling uncomfortable in discussing the issue with a male doctor (87.8%).

Conclusion: Majority of the study participants had poor knowledge on vaginal discharge displaying the inability to differentiate normal from abnormal. It is recommended to increase awareness to improve health seeking behaviour towards excessive vaginal discharge.

Keywords: Health, Knowledge, Vaginal discharge

Introduction

Being a healthy woman is important to have good reproductive health and to have a healthy baby. Reproductive health problems constitute the leading cause of ill health in women of reproductive age group worldwide especially in developing countries (1,2). Ignoring these preventable and treatable conditions can lead to distressful situations among many women.

An initial symptom of most reproductive tract diseases is abnormal vaginal discharge, which can be physiological or pathological (3). Pathological causes for vaginal discharge are due to genital tract malignancy, fistulae, allergic reactions, atrophic vaginitis (menopausal) and reproductive tract infections (4). The most common causes of vaginal discharge are physiological causes, bacterial vaginosis, and candidiasis (5). Reproductive tract infections can be a threat to women's health and lead to severe consequences such as infertility, ectopic pregnancy, chronic pelvic pain, abortion and an increased risk of HIV transmission (6,7).

Women living in the estate sector of Sri Lanka are considered as a socially marginalized community and are vulnerable to many unhealthy practices and lifestyles. They have poor health and education outcomes relative to the rest of the country (8). They live in congested and unsanitary housing with little access to social services due to the isolated nature of the locations of the estates and linguistic differences (9). The pattern and the frequency of reproductive tract infections depend heavily on the socio-cultural setting in which the women live (10) and has shown an increasing prevalence among the lower socio-economic class (11). In contrast, women with higher standards of living show significantly lower levels of prevalence of reproductive health problems due to better nutrition, sanitation and hygienic conditions (12). Further, women living in rural areas have a higher chance of getting diseases associated with vaginal discharge due to lack of knowledge on diseases related to reproductive tract and their symptoms (13). Furthermore, these infections may be due to lack of hygiene or adoption of risky behaviors

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such as not using condoms or having multiple sexual partners (14). Women from low educational backgrounds seem to be silent regarding their reproductive and sexual health issues (12) than women from urban communities.

Health education for women of reproductive age regarding infection prevention, proper use of health services and self-care methods is essential in reducing disease transmission in many societies (15). It is important to develop health education interventions according to the educational needs of the relevant community. Hence, this study aimed to assess the level of knowledge and experiences of excessive vaginal discharge among women living in estate communities in order to design a health education intervention.

Materials and Methods

This community based descriptive cross-sectional study was conducted in estates in the Colombo District, Sri Lanka from August to December 2015. Females aged 18-49 years living in the estate sector for more than 6 months prior to the study were included. Females who were cognitively impaired at the time of the study were excluded.

Expected proportion of females who had good level of knowledge on vaginal discharge was taken as 0.5 and the sample thus required was estimated at 384. Accounting for the multistage cluster sampling technique and for non-response, the final sample required was 550 females. Sample was distributed among the estates according to the female population among each estate received from the Plantation Human Development Trust (PHDT), with proportional allocation. Number of clusters was taken as 30 according to the World Health Organization (WHO) guidelines (16) and decided cluster size from each estate.

Data were collected using a self-developed, validated, pretested Interviewer Administered Questionnaire (IAQ). The judgmental validity of the instrument was assured by a panel of experts in the field of reproductive health. IAQ consisted of socio-demographic characteristics of the females, close and open ended questions to assess knowledge and practices related to vaginal discharge. In assessing knowledge each correct answer was given a score of 1 and an incorrect response 0. Knowledge was specified as adequate knowledge – >75%, moderate knowledge between 50%-75% and inadequate knowledge <50% (17).

Data were coded and double entered in to SPSS software version 16. Descriptive statistics was applied to obtain percentage and means and relevant inferential statistics was performed. Chi squared test was carried out to determine the association between the knowledge score and other factors. A P value of 0.05 or less was considered significant.

Results

Socio-Demographic Characteristics

Five hundred fifty females participated in this study. Majority of them (78%) were Tamils (n=428) and the age of females ranged from 18 to 49 years and the mean

age was 33.8 (SD: ± 8.15) years. The majority has had primary education or less (n=332, 60.4%) and were employed (60.4%). More than 88% were married (n=487) and nearly half of them had a nuclear type family (53.1%) with the mean average monthly income of Rs. 8484.55 (US\$58). The mean duration of living in estate sector was 21 (SD ± 13.60) years (Table 1). The main sources of information regarding the topic for the present community were friends (n=309, 56.2%), relatives (n=228, 41.5%), general practitioner (n=81, 14.7%), clinics (n=78, 14.1%) and television (n=69, 12.5%).

Knowledge Regarding Vaginal Discharge

Majority of the study participants stated that any type of vaginal discharge is normal (n=405, 73.6%). The colour of the vaginal discharge was mentioned as clear (12.5%, n=69), white (80.4%, n=442) or yellow (4.2%, n=23). The consistency of the normal vaginal discharge was identified as thin (n=313, 56.9%), thick white (n=147, 26.7%) or mucoid (n=90, 16.4%). Ninety four percent of the participants agreed that the odor of the normal vaginal discharge is non-offensive (n=515).

Further, majority of the participants (88.0%) agreed that “a clear, non-offensive discharge that varies with the menstrual cycle is a normal physiological secretion” and 77% agreed that “women aged between 15-49 years have a normal physiological vaginal secretion.” Majority of them (60.2%) were not aware that “the most common cause of vaginal discharge is sexually transmitted disease (STD)” (Table 2).

Awareness of Sexually Transmitted Diseases and Causes of Excessive Vaginal Discharge

Responding to the question on STDs, nearly 59% of the participants (n=234) mentioned HIV as a STD. Very few of them mentioned other STDs such as gonorrhoea, syphilis and herpes. High body temperature was mentioned as a main cause for excessive vaginal discharge by 64.7% of the study participants (Table 3).

Overall Knowledge Score on Vaginal Discharge and Sexually Transmitted Diseases

The mean knowledge score regarding overall knowledge on vaginal discharge and STDs was 27.01 (SD: ± 8.61) out of the maximum score of 100, 98.5% of participants had obtained <50% and 1.5% had obtained a score between 50%-75%. A significant statistical difference was noticed between knowledge score and the family type of the participants ($P=0.031$; Table 1).

Health Seeking Behaviours

Fifty-four percent of the participants reported that abnormal vaginal discharge has been a concern for them (n=297, Table 1). From those who had experience excessive vaginal discharge, only 30% had taken treatment from a general practitioner (n=165) and others have taken other steps or have ignored the symptom. Sixty-six participants, who had consulted a general practitioner,

Table 1. Distribution of Socio-Demographic Characteristics and Knowledge Score (N = 550)

Characteristics		Knowledge Score (n, %)			P Value
		Moderate (n, %)	Inadequate (n, %)	Total (n, %)	
Ethnicity	Sinhalese	1 (12.5)	109 (20.1)	110 (20.0)	0.123
	Tamils	6 (75.0)	422 (77.9)	428 (77.8)	
	Others	1 (12.5)	11 (2.0)	12 (2.2)	
Religion	Buddhist	1 (12.5)	110 (20.3)	111 (20.2)	0.148
	Hindu	5 (62.5)	324 (59.8)	329 (59.8)	
	Christian	0 (0.0)	73 (13.5)	73 (13.5)	
	Others	2 (25.0)	35 (6.5)	37 (6.7)	
Age categories	Below 35 years	4 (50.0)	315 (58.1)	319 (58.0)	0.664
	Above 36 years	4 (50.0)	227 (41.9)	231 (42.0)	
Highest educational level	Below primary	4 (50.0)	328 (60.5)	332 (60.4)	0.546
	Above primary	4 (50.0)	214 (39.5)	218 (39.6)	
Employment status	Employed	5 (62.5)	327 (60.3)	332 (60.4)	0.901
	Unemployed	3 (37.5)	215 (39.7)	218 (39.6)	
Marital Status	Married	8 (100.0)	479 (88.4)	487 (88.5)	0.592
	Single	0 (0.0)	43 (7.9)	43 (7.8)	
	Separate/widow	0 (0.0)	20 (3.7)	20 (3.6)	
Family type	Nuclear	2 (25.0)	290 (53.5)	292 (53.1)	0.031
	Extended	3 (37.5)	198 (36.5)	201 (36.5)	
	Joint	3 (37.5)	54 (10.0)	57 (10.4)	
Experience with abnormal vaginal discharge	Yes	4 (50.0)	293 (54.1)	297 (54.0)	0.819
	No	4 (50.0)	249 (45.9)	253 (46.0)	

Table 2. Knowledge related to vaginal discharge

Responses	True (n, %)	False (n, %)	Don't Know (n, %)
A clear, non-offensive discharge that varies with the menstrual cycle is a normal physiological secretion.	440 (88.0)	32 (5.8)	78 (14.2)
Vaginal secretions vary with menstrual cycle.	352 (64.0)	67 (12.2)	131 (23.8)
The most common cause of vaginal discharge is STDs.	130 (23.6)	89 (16.2)	331 (60.2)
Women aged between 15-49 years have a normal physiological vaginal secretion	424 (77.1)	21 (3.8)	105 (19.1)
White or colored vaginal discharge may be a sign of reproductive tract infections.	315 (57.3)	34 (6.2)	201 (36.5)
Candida infection is a sexually transmitted infection.	43 (7.8)	56 (10.2)	451 (82)

have done it within a month of appearance of excessive discharge.

The majority (n=379, 68.9%) mentioned that consultation with a general practitioner is the common health seeking behavior of other known females. The majority (73.8%) have sought medical advice when the condition has got worse. Most of the participants (87.8%) stated “feeling uncomfortable in discussing with a male doctor” is the reason for not seeking medical advice for excessive vaginal discharge (Table 4).

Treatment Seeking From a General Practitioner and its Associated Factors

Most of the participants who had lower education level have sought treatment for excessive vaginal discharge. Majority of the married women sought treatment for excessive vaginal discharge compared to others. Treatment seeking behavior from a general practitioner was not statistically significant with the educational level ($P=0.223$), religion ($P=0.075$), ethnicity ($P=0.328$), employment status ($P=0.648$) and marital status ($P=0.509$). But there was

a statistically significant association between treatment seeking behaviors and age of the participants ($P=0.027$; Table 5).

Other symptoms experienced with abnormal vaginal discharge

Other symptoms experienced with abnormal vaginal discharge were itchiness and scratching (n=135, 24.5%), lower abdominal pain (n=79, 14.4%), burning sensation (n=62, 11.3%), pain during intercourse (n=13, 2.4%) and backache (n=12, 2.2%). The accompanying symptoms with abnormal vaginal discharge such as itchiness and scratching ($P=0.000$), lower abdominal pain ($P=0.000$), burning sensation ($P=0.000$) and pain during intercourse ($P=0.012$) had a statistically significant association with seeking treatment from a general practitioner (Table 6).

Discussion

This study was done with the objective of assessing knowledge and experience related to vaginal discharge among females aged 18 to 49 years. The study population

Table 3. Awareness of Sexually Transmitted Diseases and Causes of Excessive Vaginal Discharge

Responses	No (%)
Awareness of sexually transmitted diseases	
AIDS	234 (58.9)
Gonorrhoea	17 (3.1)
Syphilis	5 (0.9)
Herpes	4 (0.7)
Causes for excessive vaginal discharge^a	
High body temperature	356 (64.7)
Vitamin deficiency	182 (33.1)
Heaty food	131 (23.8)
Bone melting	63 (11.5)
Infections	57 (10.4)
Pregnancy	54 (9.8)
Poor personal hygiene	39 (7.1)
Body weakness	35 (6.4)
Stress	20 (3.6)
Sexually transmitted Infections	14 (2.5)
Family planning methods	13 (2.4)
Melting veins	12 (2.2)
Cancer	11 (2.2)
Heavy working	10 1.8)

was a low-income estate community where women do not generally use health services and mainly work on estates fulltime. Study sample mainly consisted of an ethnic Tamil population and have been educated only up to primary education level or below. It is a proven fact that educated women report significantly lower levels of prevalence of reproductive morbidity compared to illiterate women

as they have more exposure to print and electronic media (12).

The main sources of information regarding vaginal discharge were friends and relatives which indicate the lower access to other sources in the present study population. Similar results have been reported in another study where family members and friends have been identified as the main source of information on vaginal discharge (18,19). In contrast, a study done in Nigeria reported that health professionals as a source of information than friends and relatives in some communities (20).

Women's education seems to be an important factor which helps in prevention of complications of reproductive health disease (12). The high body temperature followed by vitamin deficiency and body weakness were stated by participants as the main causes for excessive vaginal discharge and very few mentioned that infections, STDs, cancer and pregnancy as causes for excessive discharge. Similarly a study conducted in an urban slum community in Dhaka, Bangladesh found that body weakness being mentioned as a cause of abnormal vaginal discharge (21). It was mentioned in other studies that internal gynecological problems (22), body weakness (22,23), melting bones (24), illness (24) and infertility (24) as causes for vaginal discharge.

Further, in our study majority of the participants had inadequate level of knowledge on vaginal discharge. The women from estate community mainly provide estate labour which limits them from exposure to awareness programmes and other outside health services. The structure of the living environment, lack of access for sources of information and the poor educational level can lead to many unhealthy practices among this community.

Table 4. Health Seeking Behaviours Related to Vaginal Discharge

	Responses ^a	No. (%)
Health seeking behaviours of the study participants	Consulted a general practitioner	165 (30)
	Discuss with friend or relatives	46 (8.4)
	Used home remedies	13 (2.4)
	Discuss with PHM	11 (2)
	Consulted Ayurvedic Doctor	7 (1.3)
Health seeking behaviours of known others	Consulted a general practitioner	379 (68.9)
	Consulted Ayurvedic Doctor	42 (7.6)
	Used home remedies	40 (7.3)
	Use over the counter products	12 (2.2)
The reasons for seeking medical advice at the end	The condition has got worse	406 (73.8)
	Fear of serious disease	316 (57.5)
	Vaginal discharge is intolerable	261 (47.5)
	Fear of sexually transmitted infection	70 (12.7)
	Previous good experience with medical treatments	53 (9.6)
The reasons for females not to seek medical advice	Feeling uncomfortable in discussing with male doctor	483 (87.8)
	Less knowledgeable about vaginal discharge	253 (46)
	Considering vaginal discharge as normal	179 (32.5)
	Afraid of internal examination because of being unmarried	142 (25.8)
	Busy with household activities and ignore it	129 (23.5)
	Cultural view of vaginal discharge	56 (10.2)
	It relieves with the home remedies	45 (8.2)

^a Multiple responses were allowed.

Table 5. Treatment Seeking From a General Practitioner and Associated Factors

Characteristics		Consulted a General Practitioner			P Value
		Yes (n, %)	No (n, %)	Total (n, %)	
Educational levels	Below primary education	106 (64.2)	226 (58.7)	332 (60.4)	0.223
	Above primary education	59 (35.8)	159 (41.3)	218 (39.6)	
Religion	Buddhist	39 (22.6)	72 (18.7)	111 (20.2)	0.075
	Hindu	96 (58.2)	233 (60.5)	329 (59.8)	
	Christian	25 (15.2)	48 (12.5)	73 (13.3)	
	Others	5 (3)	32 (8.3)	37 (6.7)	
Ethnicity	Sinhalese	38 (23)	72 (18.7)	110 (20)	0.328
	Tamil	125 (75.8)	303 (78.7)	428 (77.8)	
	Others	2(1.2)	10 (2.6)	12 (2.2)	
Employment status	Employed	102 (61.8)	230 (59.7)	332 (60.4)	0.648
	Unemployed	63 (38.2)	155 (40.3)	218 (39.6)	
Marital Status	Married	146 (88.5)	341 (88.6)	487 (88.5)	0.509
	Single	11 (6.7)	32 (8.3)	43 (7.8)	
	Separate/widow	8 (4.8)	12 (3.1)	20 (3.6)	
Family type	Nuclear	96 (58.2)	196 (50.9)	292 (53.1)	0.284
	Extended	53 (32.1)	148 (38.4)	201 (36.5)	
	Joint	16 (9.7)	41 (10.6)	57 (10.4)	
Age categories	Below 35 years	84 (50.9)	235 (61.0)	319 (58.0)	0.027
	Above 36 years	81 (49.1)	150 (39.0)	231 (42.0)	

Table 6. Other Symptoms Experienced With Abnormal Vaginal Discharge

Accompanying Symptoms	Consulted a General Practitioner			P Value
	Yes (n, %)	No (n, %)	Total (n, %)	
Burning sensation	51 (30.9)	11 (2.9)	62 (11.3)	0.000
Lower abdominal pain	57 (34.5)	22 (5.7)	79 (14.4)	0.000
Itchiness and scratching	85 (51.5)	50 (13)	135 (24.5)	0.000
Pain during intercourse	8 (4.8)	5 (1.3)	13 (2.4)	0.012

Similarly, studies done in Vietnam and Istanbul reported that identification of vaginal discharge as a symptom associated with suspected reproductive tract infections was poor among women (25,26). Further, another study revealed that most of the participants had no prior factual knowledge about vaginal discharge and its nature (24). Overall knowledge of the respondents about the symptoms of reproductive tract infections was poor in another research and nearly half agreed that vaginal discharge as a symptom of reproductive tract infections (20). In the present study, majority mentioned HIV as a STD and very few of them mentioned other STDs such as gonorrhoea, syphilis and herpes which indicate lack of awareness on sexually transmitted infections. In contrast, a study done by Payne et al showed that African-American women had basic knowledge of associated factors of bacterial vaginosis, linking occurrence to sexual activity, tub bathing and douching (27). Educational level, religion and ethnicity were not significantly associated with the knowledge levels regarding vaginal discharge in the present study.

More than half of the study participants reported experiencing excessive vaginal discharge in the present study. It was found that 24.6% had presented with vaginal discharge in a similar community (22). Oliveira et al. stated that out of women who complained about abnormal

vaginal discharge, less than 25% had pathological discharge (10). In contrast, another study stated that from 6% who were not reporting excessive vaginal discharge, the physician found moderate or substantial discharge (28). These findings indicate the possibility of untreated reproductive tract infection among women in reproductive age group due to inability of differentiating pathological and physiological vaginal discharge. Zurayk et al further emphasized that discharge itself is not a good predictor but highlighted the necessity to elicit further information on characteristics of the discharge and the women's perception of its abnormality (28). But, in contrast, it is stated that vaginal discharge is a good predictor to diagnose reproductive tract infections or STDs (20). Therefore, the ability to differentiate abnormal vaginal discharge from normal and seeking medical advice where necessary would be imperative to early diagnosis and treatment of reproductive tract infections and other reproductive health problems.

In a study conducted in poor urban communities in Mumbai, India it was found that majority of women believe that vaginal discharge is an unavoidable and a natural consequence of womanhood (23). Even in the present study among women living in the estate community, women delayed treatment thinking that any type of vaginal discharge is normal. Further, these women

have not taken treatment from a medical practitioner due to feeling uncomfortable in discussing the condition with a male doctor. Similar results were reported from other studies where women were reluctant to seek treatment because of cultural inhibitions and feeling ashamed in consulting a male doctor (29,30). In our study cultural views on vaginal discharge was mentioned by a few as a reason for females not seeking medical advice. However, Rashid reported that women are worried that people would mix up any vaginal discharge with discharge that is caused by STDs leading to stigmatization (21). In contrast, African-American women in United States reported that most women consulted medical advice within one week of onset of symptoms and especially, over half of these women were comfortable in consulting male health care providers (27).

Majority of the study participants of the present study mentioned that they have sought treatment at the end because the condition got worse or fear of serious disease consequences. Treatment seeking behavior was not significantly associated with the educational level, religion, ethnicity, employment status and marital status in the present study. However, older women were found to have better health seeking behavior compared to younger women. Similar findings were reported by Gulati et al in which older women were more likely than younger women to seek treatment for reproductive tract infections (12). Another study reported that the prevalence of STDs, particularly of HPV, gonorrhoea and chlamydia in adolescents was higher among younger age group when compared to older age groups (10) which indicates the importance of interventions to improve health seeking behaviours in the younger age group.

It was significant that having other accompanying symptoms such as itchiness and scratching, lower abdominal pain, burning sensation and pain during intercourse with abnormal vaginal discharge were positive predictors to seek medical advice in this community. Similarly, having other symptoms with pathological vaginal discharge has been found to be a motivating factor to seek treatment in other populations as well (12,20).

Conclusion

Reproductive health problems affect millions of women around the world and there are many misconceptions and myths related to these morbidities. Vaginal discharge is a common complaint among women at reproductive age group and it is one of most common symptoms of gynecological disorders. Around 54% of females aged 18-49 in estate communities were found to be suffering from vaginal discharge with accompanying symptoms such as itchiness and scratching, burning sensation, lower abdominal pain and pain during intercourse. It was concluded that among women suffering from excessive vaginal discharge, majority (70%) did not seek any advice or treatment. The level of knowledge was inadequate among majority (98.5%) of the study participants indicating the need for enhancing awareness regarding

the importance of seeking medical advice.

According to the study of Ebrahimi Tavani et al, "consultation and education for efficient preventive healthy behaviors is one of the hottest topics in sexual and reproductive health" (7). Health education should be directed towards younger women to empower them to recognize abnormal vaginal discharge as early as possible. Furthermore, it is important to educate this community on common gynecological disorders and associated serious health outcomes considering their socio-economic background. Improving knowledge and awareness play a significant role in changing individuals' attitude, behavior and practice (7). Thus, this effort should be targeted to improve this socially marginalized community's awareness regarding causes of abnormal vaginal discharge specially focusing on reproductive tract infections which can be prevented, managed in such a way as to prevent recurrence and cross transmission.

Ethical Issues

Ethical clearance was obtained from the Ethics Review Committee, Faculty of Medical Sciences, University of Sri Jayewardenepura, Sri Lanka. Recruitment of all participants for the study was strictly voluntarily. Informed written consent from participants was obtained prior to the enrolment to the study. The procedures followed were in accordance with the ethical standards of the Declaration of Helsinki of the World Medical Association.

Conflict of Interests

Authors declare that there is no conflict of interest.

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