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Original Research Article

Influence of literacy on abnormal white discharge in women of reproductive age group in a metropolitan city

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ABSTRACT

Background: White vaginal discharge is a physiological process in women, depicting various stages of the menstrual cycle, but when accompanied with an infection of the vagina or cervix, it can present as an abnormal, excessive discharge accompanied with odour, irritation, and a variation in colour. Certain perceptions in women and lack of their knowledge pertaining to genital hygiene play a role on their reproductive health. This study was taken up to find the influence of education (literacy) on the abnormal white discharge.
Methods: Total 350 women staying in a slum of a metropolitan city were interviewed for the study. A predesigned semi structured questionnaire was prepared for all the study subjects. Voluntary consent was taken for the study in the language understood by the subjects.
Results: The association between literacy (education) and abnormal white discharge was not found to be statistically significant with the p value of 0.819.
Conclusions: Literacy was not found to have an influence on the abnormal white discharge in the married women of reproductive age group.

Keywords: Literacy, Urban slum, Leucorrhoea, White discharge

INTRODUCTION

White vaginal discharge (Leucorrhoea) is characterized into physiological and pathological.

Types of leucorrhoea

Non-pathological or normal: Caused by congestion of the vaginal mucosal membranes due to hormonal stimulation.[1] The normal vaginal pH ranges from 3.8 to 4.2. e.g., Menstrual cycle, during ovulation, pregnancy, breastfeeding, stress related, sexual arousal.[1] Pathological or abnormal: Caused due to infections of the upper and lower female genital tract. The sexually transmitted pathogens commonly linked with leucorrhoea are Chlamydia trachomatis, Neisseria gonorrhoeae, and Trichomonas vaginalis. The only presenting sign in women infected with these pathogens may be Leucorrhoea.[1-3] The imbalance in the vaginal pH or flora which can affect the smell, colour, or discharge texture. e.g., Infections, vaginitis, pelvic inflammatory disease, pelvic infection post- surgery, cervical cancer, sexually transmitted diseases, vaginal atrophy. The complaints of discharge were influenced by socio-economic factors, which had a major role to play in it. Since there were lesser studies highlighting the role of literacy with genital hygiene, we decided to document our study findings to create a change in the hygiene practices in these women.

METHODS

The cross-sectional study was conducted only after the necessary approvals of the Institutional Ethical

committee. The study period was from January 2017 to December 2017. It included only those women who gave consent for the study, who were married and belonging to age group 18-49 years and having a discharge for more than 2 weeks. Those women not willing to participate or had discharge which was any other colour apart from white or had any existing medical or surgical conditions affecting the reproductive system were excluded.

Sample size was calculated using the formula;

$$n = p(1-p)(Z/E)2$$

The prevalence of 28.7% of pathological white discharge among women of reproductive age-group from a previous study was used for calculating the present study sample size.[4] The responses given by the subjects were entered in Microsoft Excel sheets and analysed using the statistical software PSPP.

RESULTS

A total of 350 women were studied and the distribution of white discharge based on literacy (education) was found to be as depicted in study results.

Table 1: Association among subjects of education (literacy) with discharge type.

Education	Discharge Type		Chi square X^2 (p value)
	Pathological, N (%)	Non-pathological , N (%)	
Uneducated	26 (60.5)	17 (39.5)	1.54, (0.819), df=4
Primary	29 (69.0)	13 (31.0)	
Secondary	123 (67.2)	60 (32.8)	
Higher secondary	47 (70.1)	20 (29.9)	
Graduate	9 (60.0)	6 (40.0)	
Total	234 (69.9)	116 (33.1)	

Based on education, most subjects i.e., 183 (52.30%) had attained education up to secondary level, while the proportion of graduates were a handful 4.3% (15). Those who had attained primary level education were 12% (42) while 19.1% (67) had attained higher secondary level education. There were 12.3% subjects who were illiterate. (Figure 1). The education scenario in the urban slum did seem better, as most women residing in the vicinity were migrants from the southern states of India, mainly Tamil Nadu and Andhra Pradesh, having inheritably high female literacy rate. Also, the study site had 7 schools (2 municipal and 5 private) which catered to a population of 92,596.

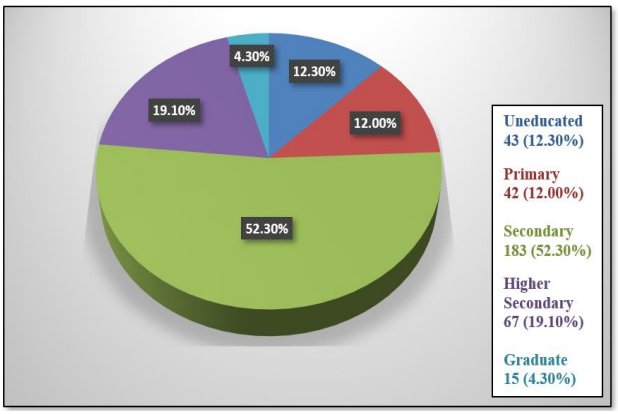

Figure 1: Distribution of discharge based on literacy.

Education-wise, the distribution of type of discharge of pathological or non- pathological variety, indicated miser influence of education on medical condition like pathological discharge. There was hardly any difference between an illiterate (uneducated) subject and graduate subject when it came to them suffering from an abnormal type of discharge, while the other levels of education showed roughly a variation of 10%. The association between education and type of discharge was statistically not significant (p value = 0.819) (Figure 2).

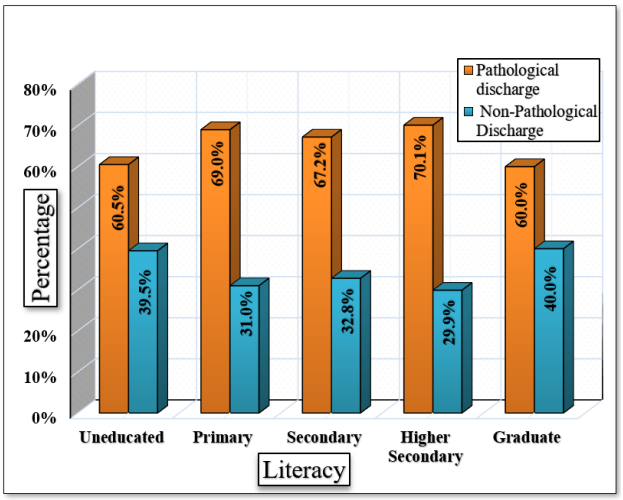

Figure 2: Distribution of discharge type by literacy.

The distribution of various other socio-economic factors did not show a significant association with discharge type except for Religion. Association of age with discharge type showed that Subjects aged between 23 to 27 years had highest proportion of pathological discharge (62 out of 84 (73.8%)) followed by 18 to 22 years old Subjects (42 out of 57 (73.7%)), which could be because of the stated age-groups being more sexually active as compared to the other older age groups.

Table 2: Association among subjects of various socio-economic variables with discharge type.

Parameters	Discharge type		Chi square X^2 (p value)
	Pathological, N (%)	Non-pathological, N (%)	
Age (years)			
18 to 22	42 (73.70)	15 (26.30)	9.324, (0.097), df=5
23 to 27	62 (73.80)	22 (26.20)	
28 to 32	49 (58.30)	35 (41.70)	
33 to 37	42 (72.40)	16 (27.60)	
38 to 42	28 (60.90)	18 (39.10)	
43 to 47	11 (52.40)	10 (47.60)	
Total	234 (66.90)	116 (33.10)	
Religion			
Muslim	179 (69.10)	80 (30.90)	11.93, (0.00055), df=1
Hindu ^	53 (59.60)	36 (40.40)	
Others ^	2 (100.0)	0 (0.00)	
Total	234 (66.90)	116 (33.10)	
Subject in occupation			
Yes	56 (65.9)	29 (34.1)	0.008, (0.931), df=1
No	178 (67.2)	87 (32.8)	
Total	234 (66.9)	116 (33.1)	
Type of family			
Nuclear	135 (65.90)	70 (34.10)	0.129, (0.72), df=1
Joint	99 (68.30)	46 (31.70)	
Total	234 (66.90)	116 (33.10)	
Socio-economic class			
Class I	11 (68.8)	5 (31.3)	1.707, (0.789), df=4
Class II	32 (74.4)	11 (25.6	
Class III	61 (64.2)	34 (35.8)	
Class IV	80 (65.0)	43 (35.0)	
Class V	50 (68.5)	23 (31.5)	
Total	234 (66.9)	116 (33.1)	

$ 2 cells (33.3%) have expected count less than 5. ^ Row data pooled & Chi-Square test reapplied with continuity correction.

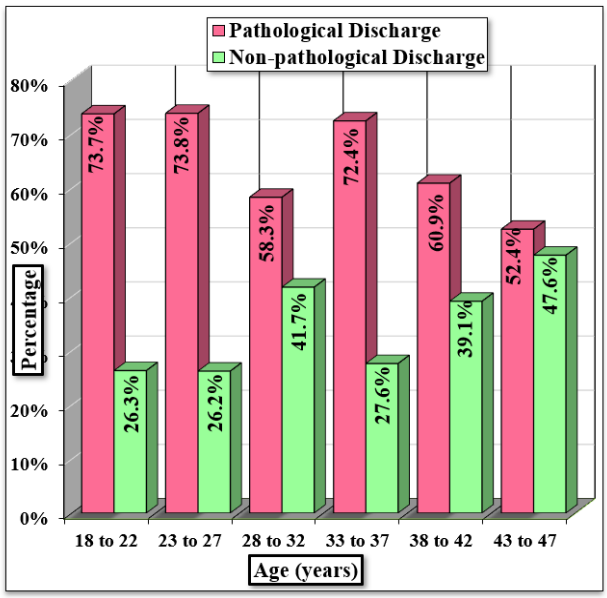

Figure 3: Age wise distribution of discharge.

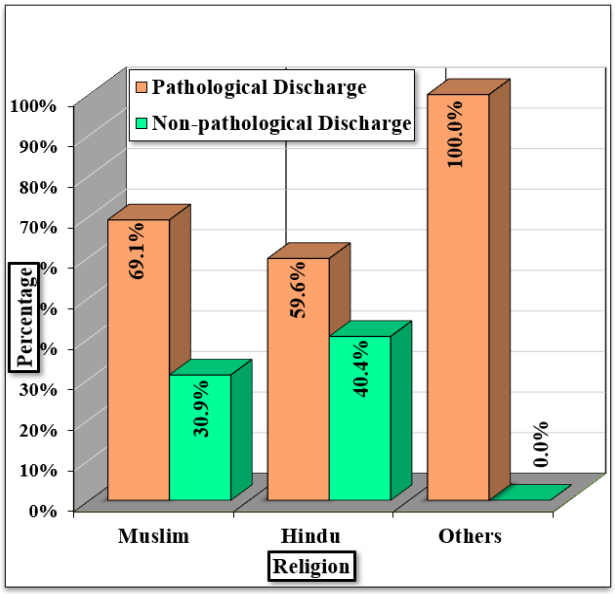

Figure 4: Religion wise distribution of discharge.

The non-tabulated cross tabulations showed women of age-group 18 to 22 years to be most sexually active with frequency of 3 to 4 times (14%) followed by Subjects 23 to 27 years and 27 to 32 years. Overall, these two age groups had allied factors contributing to pathology and abnormal white discharge. However, association between age and discharge type was found to be statistically not significant (p value=0.097) (Figure 3). Religion wise association with discharge type showed that Muslim Subjects had approximately 10% higher percentage of pathological white discharge as compared to Hindu Subjects. (69.1% v/s 59.6% respectively). Association between religion and discharge type was found to be statistically significant (p value = 0.00055) (Figure 4).

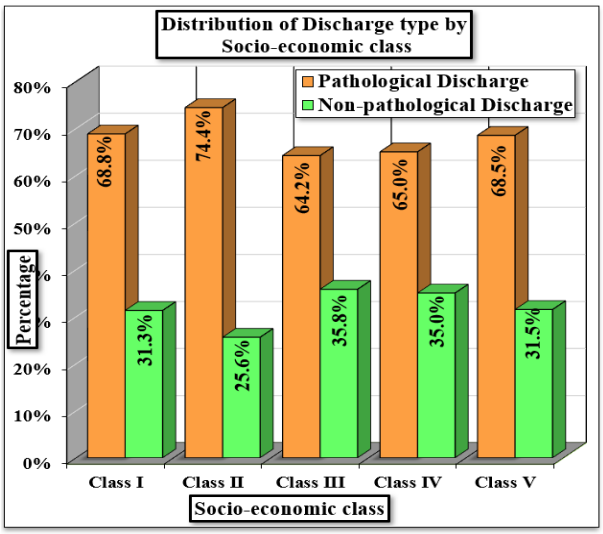

Figure 5: Distribution of discharge type by socio economic class.

Why religion had a contributary influence could be explained in terms of history of white discharge being more in Muslim Subjects as compared to Hindu Subjects (64.1% as compared to 56.2% respectively) The present scenario could be an overflow of this past infection as well as sexual intercourse during menstruation, which was higher in Muslim women (Non tabulated data). This also would be a reason why religion had a significant association with type of discharge. 259 (74.0%) subjects were Muslims, 89 (25.4%) were Hindus while the rest belonged to different religions. The area under study was an urban slum in a Metropolitan city and it had predominantly migration of a Muslim population from the Southern states of India, which could be reflecting in the study. Similarly, as seen with education, association of occupation and pathological white discharge was not statistically significant, with Subjects in profession having marginally low proportion of pathological discharge than in those not in any profession 56 (65.9%) versus 178 (67.2%) (p=0.931). Association of type of family with discharge type showed that those with joint family had a little higher percentage of pathological discharge with 99 out of 145 living in joint family having pathological discharge (68.3%) as compared to 135 out of 205 Subjects residing in nuclear family (65.0%). The association between type of family and discharge type was found to be statistically not significant (p=0.720). Socioeconomically too pathological discharge did not follow any trend. Though class II had higher proportion of pathological discharge (32 out of 234 Subjects i.e.,74.4%), with the second highest seen in socio-economic class I Subjects i.e., 11 (68.8%). The association between occupation and discharge type was statistically not significant (p=0.789) (Figure 5). Thus, neither age, education nor occupation nor income or type of family directly influenced occurrence of pathological discharge.

DISCUSSION

Out of the total 350 enrolled women belonging to the age group between 18-49years, it was found that most women were educated up to secondary level 183 (52.3%), only 15 (4.3%) women had graduated, while 12.3% were illiterate. In the study conducted in Harayana by Kataria et al on the causes of vaginal discharge among sexually active females of 20-45 years, majority of patients (44%) had primary education, 18% were illiterate, 28% were having secondary education, 6% were graduate and only 4% were post graduate. It appeared that the less educated patients had less practice of hygiene etc hence developed the illness.[5]It was found that the discharge was more among illiterate (60.1%) women in the study, Prevalence and determinants of vaginal discharge among women of reproductive age group in tertiary care hospital of Northern India, by Varsha Chaudhary.[6] In a study, Reproductive tract infections: a self-reported community-based study in urban training health centre area of a tertiary care in a hospital in Kottayam, Kerala, India by Ramesh et al it was found that, higher the female literacy, lower was the prevalence of RTI.[7] The distribution of type of discharge of pathological or non- pathological, education wise indicated minor influence on the type of discharge. There was a meagre difference of 10% between the various levels of education amongst the subjects. The association between education and type of discharge was statistically not significant (p value = 0.819). Hence indicating that the influence of literacy on the genital hygiene did not pay a significant role. Most cases of pathological white discharge were aged between 23 to 27 years i.e., 62 (73.8%) followed by 18 to 22 years subject i.e., 42(73.7%). The mean age of pathological discharge being 29.55years. This could be because of the specified age groups being sexually more active with higher frequency of sexual intercourse as compared to the older age groups. The non-tabulated cross tabulations showed women of age groups 18 to 22 years more sexually active with frequency of 3 to 4 times (14%) in same followed by Subjects 23 to 27 years and 27 to 32 years. These two age groups had allied factors contributing to pathology and abnormal white discharge. Nevertheless, association between age and discharge type was found to be statistically not significant (p=0.097).

Association of religion with discharge type showed that Muslim Subjects had approximately 10% higher percentage of pathological white discharge as compared to Hindu Subjects. (69.1% v/s 59.6% respectively). Association between religion and discharge type was found to be statistically significant (p=0.00055).

This predominance of Muslim religion could be accounted to the influx of their population to this urban slum from Southern states of India since the last 5 decades. This could also be the reason why religion had a significant association with type of discharge. Occupation and pathological white discharge, the association was not statistically significant, with those, in profession having marginally low proportion of pathological discharge 56 (65.9%) v/s 178 (67.2%) those not in any profession (p=0.931). Similarly, those living in a joint family showed a little higher percentage of pathological discharge with 99 out of 145 living in a joint family having pathological discharge (68.3%) as compared to 135 out of 205 Subjects residing in nuclear family (65%).

The association between type of family and discharge type was found to be statistically not significant (p=0.720). The pathological discharge did not follow any trend based on socio-economic class. Though class II had a higher proportion of pathological discharge 32 out of 234 Subjects i.e.,74.4%. the second highest was seen in socio-economic class I Subjects i.e., 11 (68.8%). The association between occupation and discharge type was statistically not significant (p=0.789). Hence, all these socioeconomic factors did not show a significant association with discharge type except Religion which showed a statistically significant association. Contrary to our study findings, the study titled, Prevalence and determinants of vaginal discharge among women of reproductive age group in tertiary care hospital of Northern India, conducted by Chaudhary et al vaginal discharge was found to be more among married women (26.2%), illiterate (60.1%), Muslims (28.7%), housewife's (26.1%) and in women belonging to class V of B. G. Prasad classification of socioeconomic status, difference was found to be statistically significant in all the above variables (p<0.05).[6,8] Likewise in a study by Ramesh et al titled Reproductive tract infections: a self-reported community-based study in urban training health centre area of a tertiary care hospital in Kottayam, Kerala, reproductive tract infections were significantly associated with female education (p=0.001) and socioeconomic status (p=0.007).[7] Similar to our study findings, the study conducted on vaginal discharge in reproductive age groups by Basanta et al in Bhubaneshwar in a Tertiary Care Indian Teaching Hospital it was seen that educational level did not influence the infection rate.[9] But in contrast to the present study, a study conducted in Riyadh in a university primary care clinic by Al Quaiz et al only educational level was significantly related to infection (p<0.05).[10]

Limitations

We could not include all women having vaginal discharge in the study, i.e., those with a discharge apart from white coloured discharge due to our study inclusion and exclusion criteria.

CONCLUSION

Based on our study findings, considering the two factors education and occupation had a meagre role on discharge type while only religion played a more significant influence, health education and focussed group discussions could be more influential and beneficial towards prevention of discharge especially pathological discharge.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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