Brief Report

Non-venereal genital dermatoses and their impact on quality of life—A cross-sectional study

N. Vinay, P. S. S. Ranugha, Jayadev B. Betkerur, Veeranna Shastry, P. K. Ashwini

Department of Dermatology, Venereology and Leprosy, JSS Academy of Higher Education and Research, Mysore, Karnataka, India

Abstract

Background: Lesions on the external genitalia could be venereal or non-venereal. Non-venereal genital dermatoses are common and may cause considerable anxiety to patients, particularly if noticed after sexual intercourse. However, this aspect has not been studied much till now.

Objectives: Our study proposes to describe the profile of non-venereal genital dermatoses and determine their impact on quality of life both social and sexual, using the dermatology life quality index questionnaire.

Methods: We recruited patients aged 18 years and above, who were diagnosed to have non-venereal genital dermatoses during the study period. A detailed history was obtained and clinical examination done with relevant investigations when necessary. The dermatology life quality index was assessed and graded in all patients using Finlay dermatology life quality index questionnaire.

Results: A total of 293 patients with non-venereal genital dermatoses were seen and 25 different dermatoses were observed. Men 242(82.6%) outnumbered women. The commonest age group affected was 31–50 years 144(50%). Chronic inflammatory dermatoses 135(41.6%) constituted the majority of cases. Scrotal dermatitis 46(15.7%), lichen simplex chronicus 37(12.6%), vitiligo 31(10.6%) were seen most frequently. In the study group, 111(37.9%) patients had moderate and 133(45.4%) had large impact on the quality of life. Erectile dysfunction was seen in 48(19.8%) men and 9(3.7%) had premature ejaculation. A significant effect on dermatology life quality index was found with increasing age ($P = 0.007$), positive marital status ($P = 0.006$), history of unprotected sex ($P < 0.001$), history of recurrences ($P = 0.002$) and venereophobia. ($P = 0.008$).

Limitations: The number of women in the study group was less compared to men and we could not ascertain the type of sexual dysfunction in them.

Conclusion: Non-venereal genital dermatoses are common, more so among men. They have a significant impact on the quality of life of the individual. Recognizing and addressing this problem will help in managing these patients effectively.

Key words: Dermatology life quality index, genital psoriasis, genital vitiligo, non-venereal genital dermatoses, scrotal dermatitis, venereophobia

Introduction

A number of developmental, physiological, infective (venereal and non-venereal) / noninfective, traumatic or tumorous conditions can affect the genitalia.[1] Non-venereal genital dermatoses may cause considerable anxiety to patients, particularly if noticed after sexual intercourse.[1] Assessing the effect of these dermatoses on quality of life can help in providing appropriate treatment and counseling services. Our study describes the profile of non-venereal genital dermatoses and tries to determine their impact on quality of life both social and sexual, using the dermatology life quality index questionnaire.

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Corresponding author: Dr. P. S. S. Ranugha, Department of Dermatology, Venereology and Leprosy, JSS Academy of Higher Education and Research, MG Road, Mysore - 570 004, Karnataka, India. renukaderm@gmail.com

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Methods

This is a descriptive study done from November 2015 to May 2017 after institutional ethical committee approval. Consecutive new cases aged 18 years and above, attending the dermatology outpatient department of our hospital with genital complaints and clinically diagnosed to have dermatoses involving the genitalia were included after informed written consent. Patients with sexually transmitted infections were excluded. A detailed history regarding the evolution of lesions, treatment and sexual contact was taken. Clinical examination findings were noted on a preformed pro forma. Relevant investigations were done as and when necessary. We assessed the dermatology life quality index in all patients using Finlay dermatology life quality index questionnaire and graded it as shown in Figure 1.[2]

Statistics

The data were tabulated as mean, median, standard deviation and proportions. Inferential statistics were done using one-way ANOVA. We used SPSS version 22 for statistical analysis. $P < 0.05$ was considered statistically significant.

Results

Out of 93,015 dermatology out-patients examined during the 18-month study period, the total number of patients, who came with genital complaints was 517, of which 166 (32.1%) were sexually transmitted infections, 293(56.7%) non-venereal genital dermatoses and 58 were inconclusive. Two hundred and ninety-three non-venereal genital dermatoses cases were included in the study. There were 242 (82.6%) males, who formed the majority of the study group with a men to women ratio of 4.8:1. The demographic details are given in Table 1. History of sexual contact with a non-regular partner was positive in 105(35.8%) (10 unmarried and 95 married) patients. Of these 105 cases, a history of sexual contact with a known person and commercial sex worker was present in 63(60%) and 42(40%) cases, respectively. Forty-one (39%) cases gave a history of contact with multiple partners. Of the 293 patients, 128(77.5%) were treated outside with inadequate or no response to treatment while 37(22.5%) gave a history of recurrences. The majority of our cases had isolated genital involvement 271(92.5%). In males, the scrotum was the most common site involved 131(54.1%), followed by penis in 82(33.9%) and both in 29(12%). Labia majora was the commonest site involved in women. Among 242 men with non-venereal genital dermatoses, 48(19.8%) had erectile dysfunction and 9(3.7%) had premature ejaculation. This was attributed to the skin lesion by the patient. A few females reported sexual difficulties; however, the type of sexual dysfunction could not be ascertained.

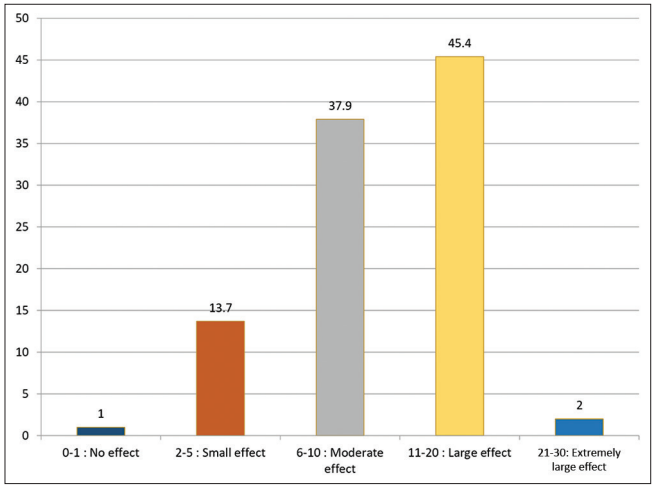

Figure 1: Grading of dermatology life quality index in study subjects

We diagnosed 25 different non-venereal genital dermatoses in the study subjects as shown in Table 2 and Figures 2 and 3. They were categorized into inflammatory dermatoses (acute and chronic), tumors and others for the sake of convenience and a better understanding of results. Chronic inflammatory dermatoses 135(46.1%) formed the largest category, followed by other dermatoses 98(33.4%). Scrotal dermatitis 46(19%) [Figure 2a] was the most common non-venereal genital dermatoses among men and genital pruritus 19(37.3%) in women.

In the study group, 111(37.9%) patients had moderate and 133(45.4%) had large impact on the quality of life. The median dermatology life quality index score was 10. Mean dermatology life quality index scores in patients with various dermatoses are presented in Table 2. The mean dermatology life quality index of each non-venereal genital dermatosis was compared with others within every category. Irritant contact dermatitis, Zoon's balanitis, steatocystoma multiplex and traumatic ulcer patients had significantly higher scores than other dermatoses within the group of acute inflammatory, chronic inflammatory,

Table 1: Patient demographics

	Number of cases, *n* (%)
Gender	
Male	242 (82.6)
Female	51 (17.4)
Age (years)	
18-30	58 (19.8)
31-50	144 (49.1)
51-70	83 (28.3)
>70	89 (2.7)
Area	
Urban	117 (39.9)
Rural	176 (60.1)
Occupation	
Agriculture	75 (25.6)
Housewives	42 (14.3)
Self-employed	70 (23.9)
Laborers	25 (8.5)
Office/desk job	57 (19.5)
Students	24 (8.2)
Marital status	
Married	257 (87.7)
Unmarried	36 (12.3)

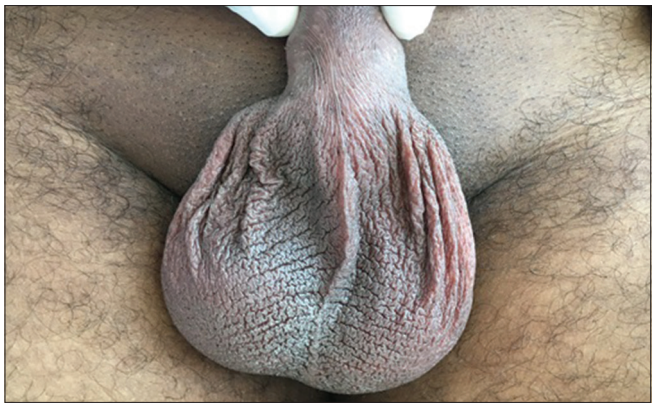

Figure 2a: Scrotal dermatitis with erythema and thickening of scrotal skin

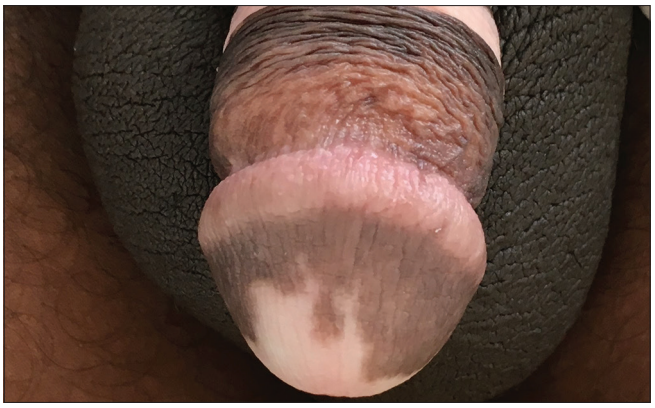

Figure 2b: Genital vitiligo

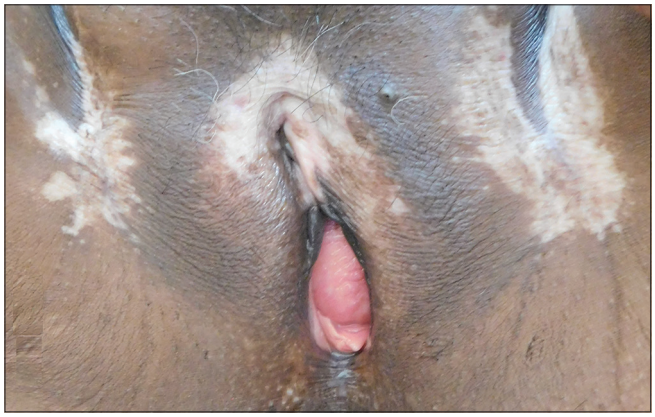

Figure 2c: Lichen sclerosus et atrophicus affecting the labia majora and groin

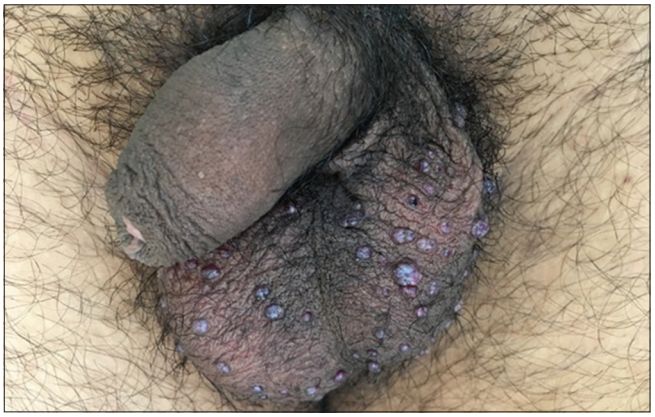

Figure 2d: Angiokeratoma of Fordyce

benign tumors and others, respectively [Table 2] The mean dermatology life quality index score of each category/group was calculated and compared. Malignant tumor (squamous cell carcinoma) had the highest dermatology life quality index score when group means were compared [Table 2]. The mean dermatology life quality index was significantly higher in those with increasing age ($P = 0.007$), in married patients ($P = 0.006$), in those who had unprotected sex ($P < 0.001$), those with recurrences ($P = 0.002$), venereophobia ($P = 0.008$) and in those who noticed lesions after an act of sex ($P = 0.01$) [Table 3]. Individuals with a positive sexual contact history and those with multiple sex partners had a higher mean dermatology life quality index, though it was not statistically significant.

Discussion

Large-scale studies on the prevalence of non-venereal genital dermatoses are lacking. Karthikeyan *et al*. reported the prevalence in males to be 14.1 per 10,000.[3] In our study, it was 31.5 per 10,000 dermatology outpatients. Men were most commonly affected (82.6%) as has been observed by others[4] We had a relatively lesser number of women which could be due to social inhibition and consultation in other departments like gynecology. Maximum number of our patients belonged to the age group of 31–50 years (49.1%), most authors have found these dermatoses to be more common in 21–40 years group.[4-7] The larger surface area of scrotum might explain the higher frequency of scrotal involvement found by us, similar to others.[3,5] Puri and Puri, however, found penis to be more commonly involved.[4]

There is a paucity of data on sexual contact history in patients with non-venereal genital dermatoses. Sampath *et al*. reported 46% of their patients as having a positive history of sexual exposure, but they have not described whether it was marital/ contact with a regular partner or extramarital/ contact with a non-regular partner.[6] In the present study, 35.8% of cases, including seven women gave positive sexual contact history with a non-regular partner. The majority (83.9%) noticed these dermatoses after an act of intercourse.

A total of 25 different dermatoses were observed in this study of which, scrotal dermatitis (19%) followed by lichen simplex chronicus (10.3%) and steatocystoma multiplex (9%) were found to be common among men. Scrotal dermatitis was the commonest followed by vitiligo and fixed drug eruptions in a study.[4] Saraswat *et al*. found vitiligo to be more common (18%) followed by pearly penile papules and fixed drug eruptions.[5] Scabies was the most common genital dermatosis (15 %) in another report.[7] However, only 2.7 % had scabies in our study. This might be because we included patients with genital complaints only. Genital pruritus (37.3%) was the commonest non-venereal genital dermatoses in women followed by lichen simplex chronicus (23.5%), vitiligo

Table 2: Non-venereal genital dermatoses and their dermatology life quality index scores

Type	Diagnosis	Number of cases			Percentage	Mean DLQI	95% CI		Mean DLQI of the group, mean±SD (95% CI)
		Men	Women	Total			Lower bound	Upper bound	
Inflammatory dermatoses acute	Irritant contact dermatitis	3	0	3	1.0	20.33±2.30	14.597	26.070	15.33±5.17 (12.76-17.90)
	Angioedema	3	0	3	1.0	17.33±8.33	13.095	19.238	
	Pyoderma	5	1	6	2.0	16.16±2.92	7.426	14.574	
	FDE	6	0	6	2.0	11.00±3.41	12.764	17.903	
Inflammatory dermatoses chronic	Zoon's balanitis	8	0	8	2.7	15.00±2.98	12.512	17.488	11.62±4.11 (10.92-12.32)
	Scrotal dermatitis	46	0	46	15.7	13.91±3.82	12.778	15.048	
	LSC	25	12	37	12.6	12.08±3.39	10.952	13.210	
	Lichen planus	14	2	16	5.5	9.06±2.52	7.722	10.403	
	Psoriasis	15	1	16	5.5	8.94±1.57	8.101	9.774	
	LSEA	0	6	6	2.0	7.83±2.23	5.495	10.172	
	BXO	3	0	3	1.0	6.00±1.73	1.697	10.302	
	Lichen nitidus	2	0	2	0.7	3.50±2.12	−15.559	22.559	
	Lichen striatus	1	0	1	0.3	2.00			
Benign	Skin tags	1	0	1	0.3	10.00			6.56±3.83 (5.35-7.77)
	Steatocystoma multiplex	22	0	22	7.5	8.27±3.76	6.607	9.938	
	Angiokeratoma	10	0	10	3.4	5.80±2.44	4.054	7.546	
	Nevi	8	0	8	2.7	2.38±1.41	1.198	3.552	
Malignant	SCC	1	0	1	0.3	25.00			25
Other dermatoses	Traumatic ulcer	6	0	6	2.0	15.83±4.79	10.804	20.863	10.21±4.81
	Chronic nonspecific ulcerative disease	3	0	3	1.0	15.33±3.79	5.929	24.738	
	Genital Pruritus	9	19	28	9.6	13.57±3.71	12.134	15.009	
	Venereophobia	7	0	7	2.4	13.45±4.08	12.934	13.923	
	PPP	15	0	15	5.1	8.73±4.69	6.132	11.335	
	Vitiligo	21	10	31	10.6	6.55±2.66	5.574	7.523	
	Scabies	8	0	8	2.7	10.25±2.71	7.982	12.518	

DLQI: dermatology life quality index, CI: confidence interval, FDE: fixed drug eruption, LSC: lichen simplex chronicus, LSEA: Lichen sclerosus et atrophicus, BXO: Balanitis xerotica obliterans, SCC: squamous cell carcinoma, PPP: pearly penile papule, SD: standard deviation

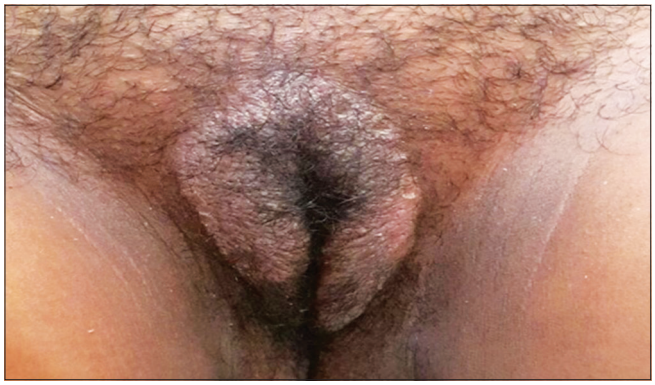

Figure 3a: Vulval psoriasis

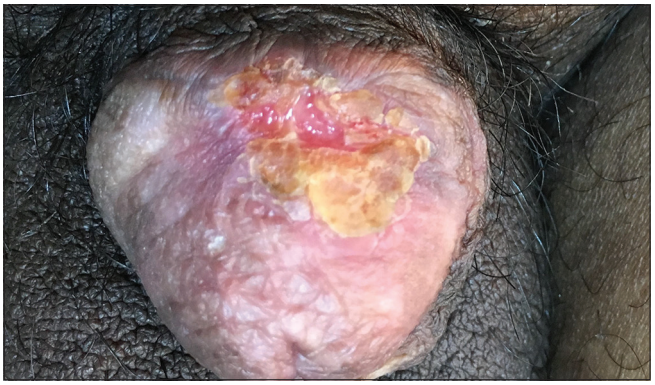

Figure 3b: Squamous cell carcinoma of the glans penis

(19.6%) and lichen sclerosus et atrophicus (11.8%). Very few have studied non-venereal genital dermatoses in females, and one study reported lichen sclerosus et atrophicus to be the commonest.[4] Whether the hot, humid climate and clothing habits of south India have any role in a higher incidence of genital pruritus needs to be evaluated further.

Dermatology life quality index is a validated tool to measure health-related quality of life and has been used in various studies to assess changes in quality of life.[8] In a recent multicenter study on quality of life in dermatology patients, it was concluded that even the most localized or asymptomatic skin lesion leads to disruption of patient's wellness at some level.[9] Although several studies have been done on the quality of life in sexually transmitted infections and human immunodeficiency virus cases,[10-16] there is a lack of data on the impact of non-venereal genital dermatoses on quality of life. There was an extremely large effect on the quality of life in 2%, a large effect in 45.4% and moderate effect in 37.9% cases. The mean dermatology life quality index score was significantly high among married than unmarried. A genital condition may cause pain or discomfort during intercourse or it may remove the desire of having intercourse for fear or shame, particularly when it is thought that the condition might be venereal in origin and also due to a fear that the regular sexual partner might be affected.[17] Little or no impact of marital status on quality of life

Table 3: Dermatology life quality index in relation to various parameters

Parameter (number of cases)	Mean DLQI±SD	P_{γ}
Age (years)		
18-30 (58)	8.76±4.44	0.007
31-50 (144)	11±4.92	
51-70 (83)	11.28±4.91	
>70 (89)	12.63±3.85	
Gender		
Male (242)	10.6±5.04	0.5
Female (51)	11.04±4.07	
Area		
Rural (176)	10.49±4.72	0.4
Urban (117)	10.95±5.11	
Occupation		
Agriculture (75)	11.29±5.55	0.06
Housewife (42)	11.10±4.15	
Self-employed (70)	10.69±5.07	
Laborer (25)	11.36±4.64	
Office/desk job (57)	10.37±4.35	
Student (24)	8.04±4.16	
Marital status		
Married (257)	10.97±4.83	0.006
Unmarried (36)	8.58±4.77	
Pre/extramarital sexual contact history		
Yes (105)	11.05±4.91	0.35
No (188)	10.47±4.87	
Multiple partners		
Yes (41)	10.98±4.77	0.7
No (64)	10.63±4.91	
Person known/CSW		
Known (63)	11.27±4.54	0.5
CSW (42)	10.71±5.47	
Barrier contraceptives used		
Yes (141/275)	10.43±4.88	<0.001
No (134/275)	11.37±4.82	
Not applicable (18)	-	
Duration of dermatoses		
Acute (<1 month) (34)	12.09±3.46	0.9
Chronic (>1 month) (259)	10.18±7.49	
Previously treated		
Yes (128)	12.69±4.26	<0.001
No (165)	9.12±4.77	
History of recurrences		
Yes (37)	12.95±4.24	0.002
No (256)	10.35±4.89	
Erectile dysfunction		
Yes (48/242)	10.9±4.56	0.6
No (194/242)	10.5±5.13	
Premature ejaculation		
Yes (9/242)	7.89±4.76	0.2
No (233/242)	10.70±5.02	
Venereophobia		
Yes (20)	13.45±4.08	0.008
No (273)	10.48±4.88	
Noticed lesions after sex		
Yes (26/275)	11.23±3.89	0.01
No (249/275)	10.88±4.92	

γ: One-way ANOVA test with post hoc, DLQI: dermatology life quality index, SD: standard deviation

was found in patients having other dermatological disorders like psoriasis.[18] Genital localization of the lesions could explain our observation. Higher dermatology life quality index scores in our patients having unprotected sexual contact might be due to anxiety of having contracted sexually transmitted infections or human immunodeficiency virus infection.

Many genital dermatoses have a chronic course with periods of remissions and exacerbations. Lack of response to treatment or recurrence may instill a fear of being affected by an incurable disease which may be the reason for a significant effect on the quality of life in these cases, as observed by us.

We also assessed the dermatology life quality index in relation to various dermatoses. Among the chronic inflammatory dermatoses, scrotal dermatitis, lichen simplex chronicus, Zoon's balanitis had a large effect on the quality of life. Itching may be a confounding factor in worsening the quality of life in some of these dermatoses. Acute conditions like angioedema, irritant contact dermatitis had a large effect on the quality of life though their prevalence was low. The acute symptoms and signs, causing severe disability in daily activity might explain this. A large effect on the quality of life was also seen in patients with nonspecific genital pruritus and nonspecific ulcerative disease. Among tumors, benign tumors viz. steatocystoma multiplex and skin tags had a moderate effect, whereas an extremely large effect on the quality of life was seen in penile squamous cell carcinoma (mean dermatology life quality index-25). The knowledge of having cancer and the increasing size of the lesion might explain this finding. The mean dermatology life quality index in psoriatics with genital lesions was found to be 8.94 +/− 1.5 by us which is comparable to the values found by Meeuwis *et al*.[19] It has been observed that quality of life and sexual health are more affected in psoriasis and vitiligo patients with genital lesions compared to those without.[19-23] However, comparison with patients without genital lesions was beyond the scope of our study.

Venereophobia is an exaggerated or irrational fear of contracting a venereal disease following an isolated or multiple episodes of sexual intercourse that is observed exclusively in men.[24] Patients with venereophobia had a higher mean dermatology life quality index score in our study. It is believed that patients attending a venereal disease clinic may have a sexual problem or develop

one later.[17] There are studies on erectile dysfunction in males with human immunodeficiency virus/acquired immunodeficiency syndrome.[25,26] There is a lack of literature on non-venereal dermatoses causing sexual dysfunction. We observed erectile dysfunction in 19.8% and premature ejaculation in 3.7% cases. Genital psoriasis has a significant impact on sexual health in both men and women.[20] Genital localization of lesions does not provoke worse sexual function in itself, but may probably have an impact on the subjective experience.[27]

Limitations

The number of women is relatively less compared to men and the type of sexual dysfunction in them could not be ascertained. Comparison of dermatology life quality index among patients with different dermatoses was not done by us due to the diverse presentations of conditions and interplay of several factors like age, marital status, the severity of itching and attitude of a spouse to the problem.

Conclusion

Non-venereal genital dermatoses are common, more so in men. As dermatologists, we need to be aware that they can have a significant impact on the quality of life. Hence, obtaining sexual contact history and assessment of the dermatology life quality index is essential. Better communication and proper counseling can increase patient's acceptance of the disease and enhance the therapeutic outcome, thereby, improving their quality of life.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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