Influence of Chronic Skin Disease on Male Sexual Function: A Hospital-Based Study in Upper Egypt

Original Article

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ABSTRACT

Purpose: Decrease of sexual function in many chronic diseases has recently attracted attention owing to its impact on quality of life. Many studies focused on erectile dysfunction in other specialties of medicine, but there are only few studies in dermatological diseases. The aim of this study was to evaluate the erectile function in males with psoriasis and vitiligo diseases in Upper Egypt.

Methods: A total of 100 male patients with chronic dermatological diseases (psoriasis or vitiligo) and 100 healthy volunteers as control group were enrolled in this case-control study. All subjects completed the validated Arabic version of International Index of Erectile Function (IIEF) questionnaire to assess male sexual function.

Results: This study included 100 patients (70 with vitiligo and 30 with psoriasis), their age ranged from 23 to 50 years with mean ± SD 41.2 ± 6.3 and 100 healthy control their age ranged from 20 to 50 years with mean ± SD 38.1 ± 8.6. The mean IIEF score among psoriasis patients was 18.1 ± 5.7, and among vitiligo patients was 20.6 ± 2.8, while it was 22.4 ± 3.04 among controls. By comparing IIEF, there was significant decrease among patients (61%) versus control (22%) ($p<0.0001$). There was no statistical significant correlation between duration of the disease and IIEF score. Regarding the extent of the dermatological disease, there was significant negative correlation with IIEF score among psoriatic patients ($P= 0.046$), with no significant correlation among patients suffering from vitiligo.

Conclusion: Sexual function is affected in males suffering from vitiligo and psoriasis vulgaris.

Key Words: Erectile dysfunction, psoriasis, skin diseases, vitiligo.

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INTRODUCTION

Sexual activity remains important for almost all men throughout their lives; erectile dysfunction usually leads to a worsening of their sexual activity and can cause significant personal and interpersonal distress at any age[1] According to the World Health Organization, sexual health is a state of physical, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled[2]. Sexuality is a basic demand and an aspect of human beings that cannot be separated from other needs, and extremely important in maintaining good mental health[3]. Chronic systemic diseases may cause psychosocial problems and may affect the quality of life and sexual functioning of patients[4].

The coexistence of erectile dysfunction (ED) with different diseases has gained interest in recent years. It has been found that the development of ED is associated with cardiovascular diseases, diabetes, obesity, chronic obstructive pulmonary disease, and chronic liver disease[5-9] .Although the coexistence of ED with different diseases has become more popular and important health concern, the subject is still considered new as regards the dermatologic interest[10]. Skin diseases can have psychosocial impacts on the patients' quality of life. Apart from the clinical severity of the disease, skin diseases may cause a variety of problems, including poor self-esteem, anxiety, depression, difficulties at work, social phobia, sexual dysfunction and suicidal ideation[11,12].

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Psoriasis not only generates high economic burden but also causes major physical and psychological burden to patients. Common comorbidities of psoriasis include psoriatic arthritis, cardiovascular diseases, metabolic syndrome, and psychiatric diseases[13]. Moreover, sexual activity has been shown to be especially impaired in patients with severe psoriasis and patients with psoriatic arthritis[14]. Vitiligo severely affects the quality of life of most patients[15]. It also has a negative impact on sexual life[16], marital relationships[17]. and relationships with the opposite gender. [18] Most vitiligo patients felt trouble and shame when beginning a sexual or emotional relation with a new partner, or reported that their sexual lives had been directly affected[19].

The aim of this study is to investigate the effect of some chronic dermatological diseases as vitiligo and psoriasis vulgaris on the sexual function of those patients.

MATERIALS AND METHODS

Data sources

This case control study was conducted in the dermatology outpatient clinic at Assiut University Hospital, Assiut, Egypt between January 2014 and December 2014. The experimental design was approved by the Institutional Ethics and Research Committee of the Faculty of Medicine, Assiut University, Egypt. It included 100 patients suffering from either vitiligo (70 patients) or psoriasis (30 patients), and 100 healthy subjects who served as control group. Although this study was unmatched case control one, however, for each case, one control was recruited where all cases and controls were males and with age range of 18 – 50 years. All subjects gave informed consent after the purpose and objectives of the study were explained to them.

The eligibility criteria included: male patients; aged between 18 and 50 years; married, having a sexually active partner and able to give consent. Subjects known to be suffering from hypogonadism, pulmonary, cardiac, hepatic, hematological or renal disease, endocrine diseases such as diabetes mellitus or thyroid dysfunction, and inflammatory diseases like rheumatoid arthritis were all excluded from the study. Subjects receiving medications that may interfere with sexual function such as antidepressants or antiandrogens were also excluded from the study. Subjects who are only receiving topical therapy such as topical steroid and narrow band UVB are included. The selection of controls relied on the absence of vitiligo or psoriasis as well as any chronic dermatological or medical conditions.

Patients with ED.

For sexual function evaluation, all subjects completed the validated Arabic version of abridged form of International Index of Erectile Function (IIEF). A score of[22–25] indicated no erectile dysfunction (ED); a score of 21 or less indicated erectile dysfunction.20

Exposure Assessment

The diagnosis of psoriasis and vitiligo was based on the finding of the physical examination and on review of the patient's medical history. However, there was no laboratory or histological findings to confirm the clinical diagnosis. In order to increase the diagnostic validity we only selected patients who had received diagnosis by at least 2 expert dermatologists. The extent of the lesions was expressed relative to the body surface area BSA (1 patient's palm= 1% BSA)[21,22] .

Statistical analysis

Descriptive statistics were used to explore extent and duration of the dermatological diseases among the cases. Bi-variate analysis was done to compare the characteristics of cases with dermatological diseases versus controls using Chi-square test with a 95% confidence level (significance was set at p value <0.05). Logistic regression was used to determine relationship between sexual dysfunction and dermatological diseases. The dependent variable was whether the study participant had sexual dysfunction or not. The dependent variable was a dichotomous variable coded 0where no erectile dysfunction was diagnosed based on the IIEF score and coded 1 when IIEF score < 22). Main covariate was disease status which was coded into nominal variable with 3 categories. Other independent variables which were controlled for included age as a continuous variable and residence, occupation and smoking status as qualitative variables. Variables related to other risk factors e.g. having pulmonary, cardiac, hepatic, hematological or renal disease, diabetes mellitus or thyroid dysfunction, and inflammatory diseases like rheumatoid arthritis were all excluded from the analysis from the beginning through the eligibility criteria. Hardly, there was any missing data as the number of variables included in the analysis is small besides that data collection and examination of the cases and controls were done by the 2 dermatological researchers themselves. Data were analyzed using SPSS for Windows version 16(SPSS Inc., Chicago, Illinois, USA).

RESULTS

The characteristics of 100 male patients with chronic dermatological diseases (psoriasis and vitiligo) compared to the 100 male controls are presented in Table 1. The mean age of dermatological patients was 41.2 ± 6.3 years while the mean age for controls was 38.1 ± 8.6. Nearly all the study participants were working at the time of the study. Most of them were manual workers and some were employees or teachers with no statistical significant difference between dermatological patients and controls. Nearly two third of the study participants

were rural residents. Smoking status was reported in less than half of the study participants with no statistical significant difference between dermatological patients and controls.

Chi-square test showed that the dermatological patients had higher proportion reporting Erectile dysfunction (61 [61.0%]) (60% among patients with vitiligo =42 patients and 63.3% among patients with psoriasis =19 patients) compared to controls (22 [22.0%]) with a statistical significant difference ($P < 0.001$). The mean score denoting of IIEF was 18.1 ± 5.7 among psoriasis patients with a minimum score of 6 and a maximum score of 25, while among vitiligo patients, the mean score denoting ED was 20.6 ± 2.8 with a minimum score of 12 and a maximum score of 25.

The mean duration and mean extent were both higher in psoriasis patients than in vitiligo patients. The mean duration of psoriasis was 10.1 ± 7.2 with a minimum of one month to a maximum of 28 months. On the other hand, the mean duration of having vitiligo was 9.9 ± 7.8 with a minimum of one month and a maximum of 30 months. Almost 70% of dermatological disease patients were presented at the clinic with a history of the disease for one year (Table 2).

As for the extent of the dermatological disease (BSA), the mean extent for psoriasis patients was 21.4 ± 15.7 whereas for vitiligo patients, the mean extent was 8.3 ± 8.3. All dermatological patients reported that they received topical drug treatment.

There was negative correlation between duration and extent of dermatological disease and score indicating sexual function as shown in Figures 1 and 2. As for duration of the dermatological disease, increase in the duration of psoriasis and vitiligo was correlated to decrease in IIEF score (r = - 0.225, P= 0.231 and r = - 0.104, P= 0.392 respectively, however, results were not statistically significant, (Figure 1 a,b). The same finding was observed concerning the extent of the dermatological disease, where increase in the extent of psoriasis and vitiligo was correlated to increase in ED, (Figure 2 a,b). Although there was no statistical significance in vitiligo cases (r = - 0.015, P= 0.903), but a statistical significance was observed in psoriasis cases (r = - 0.367, P= 0.046).

The multivariate logistic regression analysis showed that the probability of having ED increased with having psoriasis (OR: 4.64, 95% CI: 1.87 – 11.55) and vitiligo (OR: 5.76, 95% CI: 2.77 – 11.95) and with increase in age (OR: 1.74, 95% CI: 1.04 – 2,91). In addition, being an urban resident and smoker had higher probability of ED, however, the results were not statistically significant, (Table 3).

Table 1: Profile of dermatological diseased patients and controls

Characteristics	Dermatological disease cases (N= 100)		Controls (N= 100)		P value
	No	%	No	%	
Age					
• < 30 years	**3**	**3.0**	20	20.0	0.001
• 30-	**37**	**37.0**	31	31.0	
• 40 +	**60**	**60.0**	49	49.0	
Mean ± SD	**41.2 ± 6.3**		38.1 ± 8.6		
Occupation					
• Manual worker	**51**	**51.0**	65	65.0	0.128
• Employee teacher	**47**	**47.0**	34	34.0	
• Not working – retired	**2**	**2.0**	1	1.0	
Residence					
• Rural	**64**	**64.0**	60	60.0	0.662
• Urban	**36**	**36.0**	40	40.0	
Smoking status					
• Non-smoker	**56**	**56.0**	53	53.0	0.777
• Smoker	**44**	**44.0**	47	47.0	
IIEF Score					
• Normal	39	39.0	78	78.0	0.000
• Dysfunction	61	61.0	22	22.0	
Mean ± SD	19.9 ± 4.1		22.4 ± 3.04		

Table 2: Duration and extent of dermatological disorders among patients

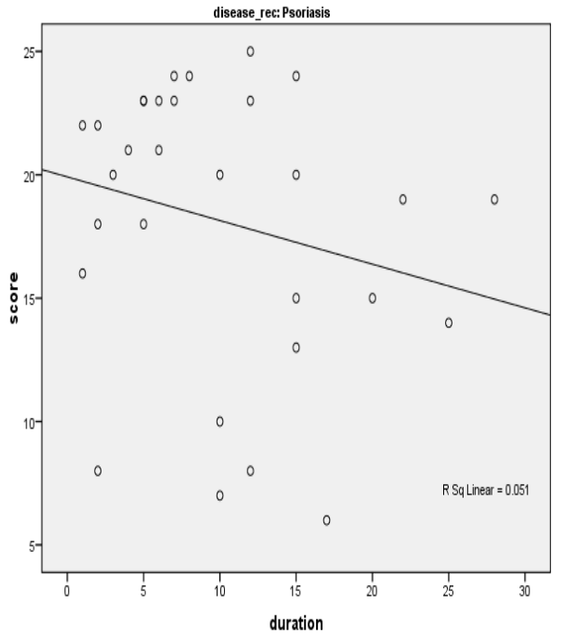
Variable		Psoriasis (N= 30)		Vitiligo (N= 70)	
		No	**%**	**No**	**%**
Duration					
•	< 7 months	12	40.0	35	50.0
•	7 – 12 months	9	30.0	14	20.0
•	1 year	7	23.3	15	21.4
•	2+ years	2	6.7	6	8.6
Mean ± SD		10.1 ± 7.2		9.9 ± 7.8	
Extent					
•	< 10 %	7	23.3	46	65.7
•	10 -	7	23.3	18	25.7
•	20 -	10	33.3	5	7.1
•	40 +	6	20.0	1	1.4
Mean ± SD		21.4 ± 15.7		8.3 ± 8.3	

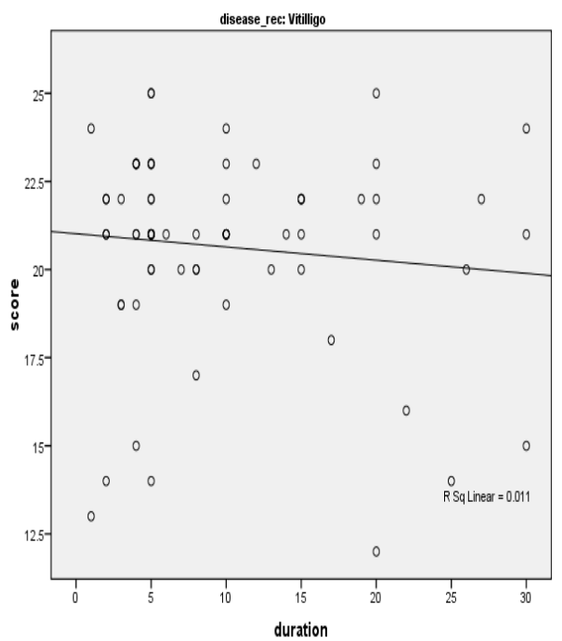
Table 3: Determinants of sexual dysfunction among patients with dermatological problems

Variable		Unadjusted OR	Adjusted OR	CI for adjusted OR 95%
Disease status				
• Controls (reference)		***6.12		
•	Psoriasis	***5.31	**4.64	11.55 – 1.87
•	Vitiligo	**2.05	***5.76	11.95 – 2.77
Age			*1.74	2.91 – 1.04
Occupation				
• Not working - retired (reference)				
•	Employee – teacher	0.33	0.38	5.53 – 0.02
•	Manual worker	0.36	0.57	7.82 – 0.04
Residence				
•	Rural (reference)			
•	Urban	0.87	1.11	2.18 – 0.56
• Non-smoker (reference)				
•	Smoker	1.26	1.19	2.29 – 0.62

*P< 0.05, **P< 0.01, ***P< 0.001

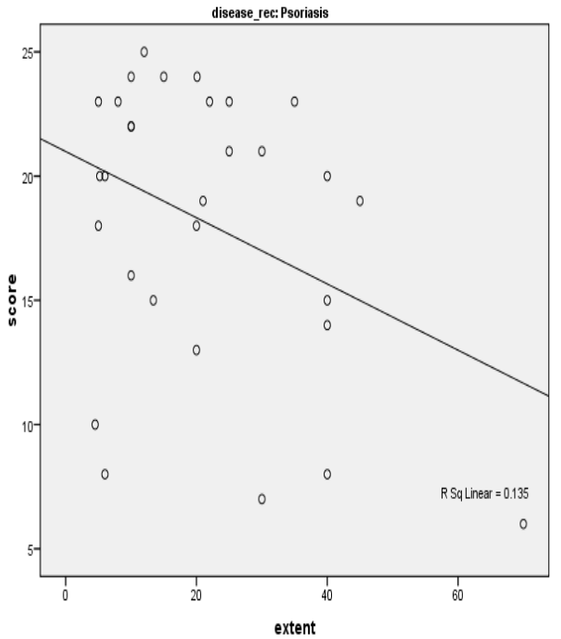
Figure 1: Correlation of duration of psoriasis (a) and vitiligo (b) with ED.

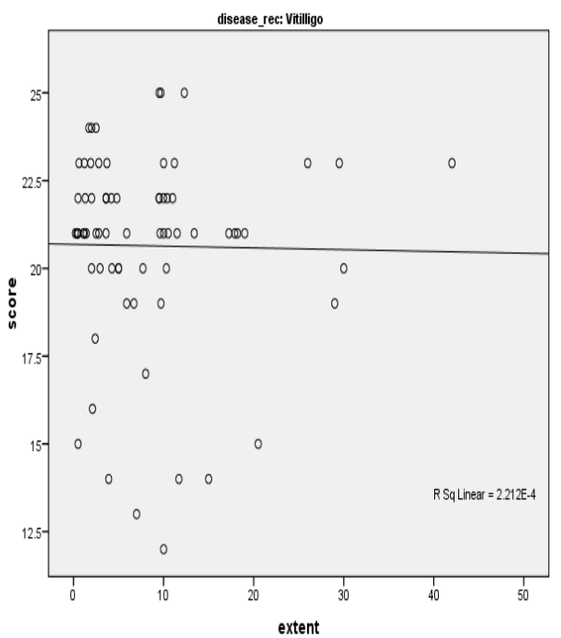




(a): r = - 0.225, *P*= 0.231
(b) r = - 0.104, *P*= 0.392

Figure 2: Correlation of extent of psoriasis (a) and vitiligo (b) with ED.





(a): r = - 0.225, *P*= 0.231
(b): r = - 0.104, *P*= 0.392

Discussion

Up to our knowledge, there are no published studies in Egypt that address the relationship between dermatological diseases and male erctile function. ED may be caused by organic (e.g. vascular, endocrine, neurogenic and drug induced), psychogenic causes or combination of both[23].

It has been explored that skin diseases can negatively affect the patients' sexual life[15,24-27]. In the present study, we assessed the influence of psoriasis and vitiligo on male sexual function in Upper Egypt.

Our results showed that among the patients with dermatological diseases, 61% proved to have erectile dysfunction versus only 22% among the control. By comparing the IIEF, there was significant decrease among patients (61%) versus control (22%) ($p<0.001$). There was no statistical significant difference between duration of the disease or extent of involvement and erectile function.

Few studies have evaluated the relationship between vitiligo and male sexual function. Ahmed *et al*., investigated the frequency and pattern of psychiatric disorders in 100 patients with vitiligo, they reported that sexual dysfunction was one of the most frequent disorders in those patients[28] However, Sukan and Maner[27] and Jonathan and Nanette[29]. found no significant decrease in sexual function among males suffering from vitiligo.

Previous studies have revealed a negative effect on sexual function in psoriasis patients[30-32.] Chen *et al*., found a significantly higher incidence of sexual dysfunction among psoriasis male patients versus control[33]. Also, Ermertcan *et al.*, found that the total IIEF score was significantly decreased in psoriasis patients with or without associated depression[26]. Molina-Leyva *et al*., stated that genital involvement followed by chest involvement have the greatest impact on male sexual interest[34].

In the present study, the increase in the extent of psoriasis and vitiligo was correlated to increase in ED. Although there was no statistical significance in vitiligo cases ($r = - 0.015$, $P= 0.903$), but a statistical significance was observed in psoriasis cases ($r = - 0.367$, $P= 0.046$). However, in logistic regression model, both psoriasis and vitiligo were significant predictors of ED. Jonathan and Nanette stated that increased extent of vitiligo is associated with poorer QOL, including pruritus and/or burning of skin and sexual dysfunction[29]. Sampogna *et al*., observed that the more the severity of psoriasis the more the association with sexual dysfunction[14].

The etiology of ED in chronic dermatological diseases may be attributed to different pathogenesis. Psychological distress through feeling of stigmatization, shame of body image, poor self-esteem as a result of disfiguring skin diseases is likely to affect patients' sexual life.

In addition, endothelial dysfunction, cytokines involvement, alteration in the reactive oxygen species and TNF-alpha that play role in the pathogenesis of psoriasis can affect the vascular function leading to ED[34].

There were some limitations in our study. First, certain patient information and life style data were not obtained such as detailed family history, level of physical activity and body mass index. Second, we did not evaluate the impact of distribution pattern of skin lesion on sexual function. Third, the study did not include any laboratory data that may contribute to the etiology of sexual dysfunction (e.g. hormonal profile, blood sugar and lipid profile). Finally, the study included patients who visited Andrology and Dermatology out clinics at Assiut university hospital. Given that many patients may choose to pay for treatment in private practice, this could contribute to selection bias.

CONCLUSION

This study suggests that patients suffering from chronic skin diseases such as psoriasis and vitiligo are at higher risk of developing sexual dysfunction. . The results of this study give an idea about this relationship especially in Upper Egypt and act as a basis for other studies. Physicians should give proper attention to the impact of these diseases on sexual health in order to provide a better quality of life.

CONFLICT OF INTEREST

There are no conflicts of interest.

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