Abstract

Background: Vitiligo is an idiopathic acquired progressive de/hypopigmentary disorder of skin and mucosae. In Indian skin depigmentation is very much obvious and can cause psychological distress, low self esteem and social stigmatization.

Aims: The primary objective of this study was to evaluate the psychiatric morbidity in vitiligo patients and secondary objective was to assess the morbidity in all eight dimensions of psychosocial and physical aspects, i.e. cognitive, social, discomfort, limitations, depression, fear, embarrassment and anger.

Materials and Methods: An institution based case-control study with sixty-one patients of vitiligo and equal number of healthy age and sex matched controls was undertaken. The self-reporting questionnaire-24 (SRQ-24) and skindex (A 61-item survey questionnaire) were used to assess the psychiatric morbidity in both the groups.

Results: The SRQ-assessed psychiatric morbidity in the study group was 63.93%, compared with 24.59% in the control group (P<0.0001). Acral vitiligo had maximum association with psychiatric morbidity (86.67%) followed by vitiligo vulgaris (68%), mucosal vitiligo (62.5%) and others. According to the skindex, the most common psychiatric morbidity in vitiligo patients was depression (62.29%) followed by embarrassment (55.73%), social problem (54.09%), cognitive impairment (50.81%), physical limitation (47.54%), discomfort (40.98%), anger (36.06%) and fear (24.59%). The difference in Skindex scoring that marked the psychiatric morbidity among the case and control groups was statistically significant for depression, discomfort, social problem, cognitive impairment, embarrassment (P<0.0001) and physical limitation (P=0.0044).

Conclusion: Vitiligo has a high degree of psychiatric morbidity.

Key Words: Psychiatric morbidity, skindex, self‑reporting questionnaire‑24, vitiligo

Introduction

Vitiligo is an idiopathic, acquired, chronic dermatological disorder characterized by hypopigmentation or depigmentation of skin and mucosae. Skin being the outermost covering of the body and being exposed to environment, its appearance greatly influences body image and self-esteem. It affects 1%–2% of the world population. There is a possibility of development of vitiligo due to increased psychological stress that increases the level of neuroendocrine hormones which activate the immune system and increase the level of neuropeptides subsequently. These pathophysiological changes may be the triggering or precipitating factors for the pathogenesis of vitiligo. The sense of being stigmatized or being different from others is a common reaction and may affect an individual's interpersonal and social behavior. The chronic nature and unpredictable course of the disease along with lack of uniform effective therapy can be a cause of stress, anxiety, depression, and frustration. It influences the way we are perceived by others and can affect the social and marital life. The disease may provoke negative emotions such as shame or embarrassment, anxiety, lack of confidence, and even psychiatric diseases such as depression. About 75% of vitiligo patients have psychological disorder.
et al. have shown that counseling can help improve body image, self-esteem, and quality of life (QoL) of patients with vitiligo. At the present scenario, the field of psychodermatology has been more enriched as a result of our increased interest and understanding of the relationship between skin diseases and various psychological factors.

Depending on data available from different research work and focused discussion with patients and with clinicians who care for patients with skin diseases, Chren et al. constructed a conceptual framework for the subjective effects of skin disease on patients’ quality of life (QoL) [Figure 1]. These effects have two major domains: Psychosocial and physical. Within these domains, they identified five dimensions: Psychosocial effects that were cognitive, social or emotional and physical effects that were related to physical discomfort or limitations in physical functions. Within the emotional dimension, they included the sub-dimensions of depression, fear, embarrassment and anger. There are a lot of studies assessing the QoL in vitiligo patients in India and abroad. However, there is a paucity of studies comparing the prevalence and degree of impairment in QoL in patients who are suffering from vitiligo and in otherwise healthy individuals attending the dermatology outpatient department.

The present study was undertaken to assess and analyze the psychiatric morbidity among treatment-seeking patients of vitiligo with that of patients with other skin disorders and to evaluate the morbidity in all eight dimensions of psychosocial and physical aspects, i.e., cognitive, social, discomfort, limitations, depression, fear, embarrassment, and anger in a rural-based tertiary care center.

**Methodology**

An institution-based case–control study was undertaken in a tertiary care hospital of eastern India from January to December 2016, with 61 cases of vitiligo and a similar number of age- (±2 years) and sex-matched controls from other patients and from healthy accompanying persons.

**Inclusion criteria**
1. Vitiligo patients diagnosed by a consultant dermatologist
2. Patient’s age >18 year
3. Both sexes
4. Patients willing to provide informed consent
5. Age and sex matched controls
6. Must understand, read, and write Bengali.

**Exclusion criteria**
1. The patient should not have any other comorbid general medical illness other than minor skin ailment
2. In the patient group, any history of psychiatric illness before the onset of vitiligo
3. Patients who were unwilling to participate in the study
4. The control group should be free from vitiligo.

A detailed history and physical examination of each participant were undertaken. The self-reporting questionnaire-24 (SRQ-24, a psychiatric screener) and Skindex (a 61-item self-administered survey questionnaire to assess the QoL of patients of dermatological disorder on the aforementioned eight scales) were used as study tools. Data were collected in a predesigned case datasheet and were analyzed with MedCalc software version 10.2.0.0” by Acacialaan 22, B-8400, Ostend, Belgium. Chi-squared test or Fisher’s exact test or Monte–Carlo approximation was applied as a statistical tool.

**Results**

Over a period of 1 year, 61 patients of vitiligo and similar number of age- (±2 years) and sex-matched healthy controls were included in the study from the patients attending the dermatology outpatient department of a rural-based tertiary care institute of West Bengal, India.

The age of the vitiligo patients ranged from 20 year to 68 year with a mean of 43.8±12.48 years. In the control group, age ranged from 22 year to 70 year with a mean of 44.01±11.85. In both the groups, 31 (50.82%) patients were male and 30 (49.18%) were female. Most patients suffered from vitiligo vulgaris (40.98%), followed by acral type (24.59%), focal (16.39%), mucosal (13.12%), segmental (3.28%), and universal type (1.64%). Psychiatric screener (SRQ-24) was positive in 39 (63.93%) patients, while in the control group, it was positive in 15 (24.59%) patients; this difference was statistically significant (P<0.0001). It was observed that patients with acral vitiligo had the highest percentage of psychiatric screener (SRQ-24) positivity (86.67%), followed by vitiligo vulgaris (68%), mucosal vitiligo (62.5%), and segmental vitiligo (50%);
lowest psychiatric screener positivity was noted in focal vitiligo (30%) [Figure 2]. According to Skindex, the most common psychiatric morbidity noted among the vitiligo patients was depression (62.29%), followed by embarrassment (55.73%), social problem (54.09%), cognitive impairment (50.81%), physical limitation (47.54%), discomfort (40.98%), anger (36.06%), and fear (24.59%) [Figure 3]. In the control group, psychiatric morbidity observed was physical limitation (22.95%), followed by anger (21.31%), fear (11.47%), cognitive impairment (11.47%), embarrassment (11.47%), discomfort (3.27%), and social problem (1.63%). Excepting anger and fear, the observed differences were statistically significant [Table 1].

**Discussion**

Vitiligo is considered as a cosmetic problem. It affects an individual’s emotional and psychological well-being,[8] having major consequences on patient’s life.[9] The relationship between skin and brain is based on both being originated from the same ectodermal structure and being under influence of the same hormones and neurotransmitters.[1] Psychodermatology makes up a common area of interest based on the mutual relationship and interaction between psychiatry and dermatology.[10] In this study, we used SRQ-24 for screening purpose. This questionnaire is comparable to General Health Questionnaire (GHQ) 12 or 28 for assessing the psychiatric morbidity.[11] GHQ is commonly used by different studies to assess the dermatology quality life index, but this scale is unable to detect psychotic phenomena.[12] For measuring QoL in vitiligo patients, we used Skindex-61 questionnaire. This scale used eight dimensions for assessing QoL in a patient with dermatologic disorder.

The results of the present study showed that the mean age of vitiligo patients was 43.8 years and the mean age of control group was 44.01 years. This confirms that both the groups were age matched as the difference in mean age was negligible. The SRQ-assessed psychiatric morbidity was 63.93% in vitiligo patients in our study, which was higher than that in GHQ-assessed study done by Mattoo et al.[13] (25%). Sharma et al.[14] showed that GHQ assessed psychiatric morbidity in psoriasis and vitiligo patients were 53.3% and 16.2% respectively. However, few studies have found lower prevalence of psychological morbidity of 31%, 24%, 42%, and 10% using different assessment tools such as Structured Clinical Interview for Diagnostic and Statistical Manual-IV Axis I Disorders (SCID-1) and psychiatric assessment schedule.[15-18] Higher prevalence of psychiatric morbidity (79.2%) was found in a study done by Ramakrishna and Rajni using the Rosenberg self-esteem scale and Hamilton depression rating scale.[19] The use of different diagnostic tools may be the cause of the differences in the prevalence of psychiatric morbidity in different studies.

Skindex[7] was used to assess aforementioned eight subdomains of psychiatric disorder in our study. Skindex values of all dimensions are higher in vitiligo patients than in control group, but it is not significant for anger, and fear and significant for depression, discomfort, social, cognitive impairment, embarrassment and

**Table 1: Comparison of different psychiatric morbidities among the vitiligo patients and the controls**

| Parameters        | Case (n=61), n (%) | Control (n=61), n (%) | P       |
|-------------------|--------------------|----------------------|---------|
| Depression        | 38 (62.29)         | 4 (6.65)             | <0.0001 |
| Embarrassment     | 34 (55.73)         | 7 (11.47)            | <0.0001 |
| Social problem    | 33 (54.09)         | 1 (1.63)             | <0.0001 |
| Cognitive         | 31 (50.81)         | 7 (11.47)            | <0.0001 |
| Physical limitation| 29 (47.54)         | 14 (22.95)           | 0.0080  |
| Discomfort        | 25 (40.98)         | 2 (3.27)             | <0.0001 |
| Anger             | 22 (36.06)         | 13 (21.31)           | 0.1093  |
| Fear              | 15 (24.59)         | 7 (11.47)            | 0.1279  |
physical limitation. This result was highly predictable that psychiatric screener positivity detected by SRQ had poor Skindex value. Most of the studies conducted to assess the QoL of vitiligo patients mainly focused on depression, but few studies at the same time also considered poor self-esteem, anxiety, and social problem. In our study, depression (62.29%) was also the major psychiatric disorder in vitiligo patients. The presence of depression in vitiligo patients in our study was comparable with the study done by Sangma et al. [20] (59%), Ramakrishna and Rajni [19] (56.6%), and Balaban et al. [13] (33.33%). Among vitiligo patients, Mattoo et al. depicted adjustment disorder (56%), depressive episode (22%), and dysthymia (9%); Karia et al. reported depression (20%) followed by anxiety (8%); Potter et al. found 40% cases to be depressive and had low self-esteem; Sharma et al. found depression (10%) and anxiety (3.3%).

The prevalence of psychiatric illness was high in vitiligo group compared with that in the control group according to SRQ-24 screener. This difference was also statistically significant (P<0.0001). Among different types of vitiligo, acrofacial vitiligo was associated with maximum psychiatric comorbidity (86.67%), followed by vitiligo vulgaris, mucosal, segmental, focal, and universal vitiligo.

**Conclusion**

The present study showed higher degree of psychological comorbidity and major impairment in QoL associated with vitiligo, and the extent of this comorbidity is even greater than hitherto thought of. This study had addressed different factors that could influence the prevalence of psychiatric morbidity in this disorder. Taking care of these psychiatric morbidity along with specific vitiligo therapy may bring a favorable outcome.

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Nil.

**Conflicts of interest**

There are no conflicts of interest.

**What is new?**

- Vitiligo patients are subjected to different psychosocial and physical comorbidity.
- Depression, embarrassment, social problem, cognitive impairment, and discomfort are the predominant psychological comorbidities.

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