

A Cross Sectional Study of Psychiatric Morbidity and Quality of Life in Vitiligo Patients

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Abstract – Introduction: Vitiligo is a chronic disorder of skin pigmentation caused by the selective destruction of melanocytes. It causes psychological distress and affects quality of life. Materials and method: An institution based case control study with 55 cases and 55 controls with vitiligo and without vitiligo was undertaken. They were assessed using the Vitiligo area severity index (VASI), Vitiligo Disease Activity Scoring (VDAS), Hamilton Depression Scale (HAMD) and Dermatology life quality index (DLQI). Results: In our study sample 29.1 % had vulgaris, 27.3 % had focal type of vitiligo, and 32.7 % had acro-facial vitiligo, 5.5 % mixed and 5.5 % segmental type of vitiligo was respectively seen. 76.4 % of the cases scored for mild depression and 16.4 % of the cases scored for moderate degree of depression. 23 (41.8 %) of the cases had mild degree of anxiety and 2 (3.6 %) had moderate degree of anxiety. Acro-facial and vulgaris group scored more for anxiety. Significant difference between two groups on WHO Quality of Life scale BREF and DLQI scores. Discussion: Psychiatric morbidity and Quality of Life was found to be significant in patient group with vitiligo than normal controls. There was a higher positive correlation between QOL and VASI scores, denoting the poor quality of life in patients attributable to the severity of the lesions. Conclusion: Psycho-dermatological services will help to mitigate the sufferings and improve the quality of life of patients with vitiligo.

Key words: vitiligo; depression; anxiety; quality of life

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Introduction

Vitiligo is a pigmentary disorder resulting in white macules with a prevalence of about 0.38 to 3.2 % as reported from the world literature. In India it is referred to as “Venkush-tam” meaning ‘white leprosy’ [1]. It is an ac-

quired chronic disorder of skin pigmentation caused by the selective destruction of melanocytes [2]. Vitiligo is a psychologically devastating disorder in itself. The fact that it typically occurs in exposed areas leads to various psychiatric morbidities and following which it affects the quality of life in vitiligo patients [3]. Many patients worry about the disease worsening which affects their physical, psychological, social and environmental [4].

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The sense of being stigmatized may affect a person's interpersonal and social behaviour, which in turn increases the risk of depression and other psychosocial disorders [5]. Vitiligo has underlying mental illness but mostly not diagnosed and never used psychiatric medication [6]. Vitiligo may not lead to physical disability per se, but psychosocially, the picture is different. Patients with this disorder are liable to suffer from issues such as poor body image, lowered self-esteem, and substantial overall disability [7]. The visibility of the lesions as well as the unpredictability of their appearance and spread can lead to negative emotions such as depression and insecurity [8]. Those with more visible lesions, naturally, experience more stigmatization than those without [9]. The intersection between "psyche and vitiligo" thus appears to be important but so far has been sub-optimally analysed [10].

Quality of Life (QoL) can be defined as "a broad concept that encompasses physical health, psychological status, and level of independence, social relations, beliefs and relationship to the environment" [11]. It involves several important aspects, including mental health, functionality, sense of being well, interaction with society, financial status, job status, and physical health. A patient's perception of their quality of life is an important indicator of their ability to take care of themselves adequately. In those afflicted with vitiligo, their perception of their quality of life can be an important indicator of the state of their mental and overall well-being. There have been few studies focusing on the psychosocial aspects of well-being in vitiligo, especially considering that it is one among the common causes for disfigurement resulting from dermatological conditions [12]. Dermatological conditions may manifest in multiple ways that include physical discomfort such as itching or pain, difficulty in daily functioning, psychological effects such as low self-esteem, impairment of social life, occupational difficulties, strained family relations, as well as the lengthy and

costly treatment process. Each of these can affect an individual to various extents depending on factors such as their age, sex, occupation, culture and personality type [13].

Our aim was to study the prevalence of psychiatric morbidity of vitiligo in our sample of patients and compare the Quality of Life with the healthy controls. Our study objective was (a) to assess the prevalence of psychiatric morbidity in vitiligo patients, (b) to determine factors related with Quality of life in vitiligo patients compared with healthy controls and (c) to assess the impact of clinical and socio-demographic variables that affect the generic and dermatological health related quality of life.

Subjects and Methods

Study Settings and Participants

This study took place at SRM medical college and research centre, Kattankalanthur, Tamil Nadu, India between April 2017 and October 2018. This was a cross sectional study on patients who attended the outpatient section of the Department of Dermatology with vitiligo. After obtaining their consent for participation in this study, they were assessed for their psychiatric morbidity and quality of life. Healthy volunteers who consented for the study were taken up as control group. After sample size calculation, a sample size of 55 cases and 55 controls with and without vitiligo were chosen for the study. The inclusion criteria for cases were consenting patients who were > 12 years of age and were able to read and write in Tamil / English language. Healthy subjects without any dermatological and psychiatric illness who gave informed consent were taken as control group. MINI was used to screen for major mental illness in both the groups. Patients with mental retardation, psychiatric disorder, dementia, delirium and other amnesic disorders were excluded from the study.

Study Instruments

Participants name, age, sex marital status, religion, occupation, address, education were ob-

tained using the socio-demographic Performa. We used the Vitiligo Area Severity Index (VASI) to assess the extent of the illness. Vitiligo Disease Activity Scoring (VIDA) to assess the severity of disease activity, Hamilton Depression Rating Scale (HAM-D) to assess depression, Hamilton Anxiety Rating Scale (HAMA-A). Who Quality of life – Brief (WHO QOL-BREF) to assess the generic quality of life and the Dermatology Life Quality Index (DLQI) for specific assessment of quality of life in patients with dermatological conditions.

Vitiligo area severity index (VASI)

It is a quantitative tool to measure vitiligo [14]. In this tool, the body is considered in five separate regions, namely the hands, the upper extremities, lower extremities, trunk, and feet. One “hand unit” is the palm of the hand and the volar surface of the all of the fingers, and it equals roughly 1 % of the body surface area. Depigmented areas in each region were represented as percentages closest to: “0, 10 %, 25 %, 50 %, 75 %, 90 %, or 100 %”. At 100 % depigmentation, no pigment is present; at 90 %, specks of pigment are present; at 75 %, the de-pigmented area exceeds the pigmented area; at 50 %, the de-pigmented and pigmented areas are equal; at 25 %, the pigmented area exceeds the de-pigmented area; and at 10 %, only specks of depigmentation are present. For each of the five aforementioned areas, the VASI is calculated by multiplying the area of the lesion (as measured in hand units) with the percentage of depigmentation within each hand-unit. Then the following formula is utilized to arrive at the VASI (possible range, 0 - 100). $VASI = \text{all the body sites} \times \text{residual depigmentation}$.

Vitiligo Disease Activity Scoring (VIDA)

It is a 6 point scale used for assessing vitiligo activity, scoring involves both subjective and objective measures. The scoring is based on disease activity and time duration. Grading ranges from - 1 to + 4, based on pigmentation, size and time period. A high score on VIDA indicates greater activity [15].

Dermatology Life Quality Index (DLQI)

Quality of life in vitiligo is measured by Dermatology Life Quality Index (DLQI) [16,17]. It consists of ten questions, each with four possible answers. All questions are scored 0-3. The final score is arrived at by adding the scores of the individual questions, with a maximum possible score of 30. Higher scores on this questionnaire indicate a lower quality of life. Interpretation of the score is as follows: Scoring interpretation - 0 - 1: No effect at all on patient’s life, 2 - 5, small effect on patient’s life, 6 – 10, moderate effect on patient’s life, 11 - 20, very large effect on patient’s life, 21 - 31 extremely large effect on patient’s life.

Hamilton Depression Rating Scale

A standardized rating scale for depression. It consists of 21 items on depressive symptoms rated by a clinician. It is a widely used scale for assessment of depressive symptom and severity. Inter-rater reliability for the total score ranges from 0.87 to 0.95. This may be improved upon slightly with two experienced raters working together. Validity of this scale appears high. Average time taken to administer the scale is 20 to 30 minutes [18].

Hamilton Anxiety Rating Scale

It is a commonly used scale to measure anxiety. It has been used in both clinical and research settings. It is a clinician rated scale, which consists of 14 items measuring both somatic and psychic anxiety. It has very good internal consistency and inter rated reliability. Average time taken to administer the scale is 20 to 30 minutes [19].

Mini International Neuropsychiatric Interview (M.I.N.I)

It consists of 11 domains (yes/no) type like – major depressive episode, dysthymia, suicidality, etc. It is used as a screening for the domains [20].

Who Quality of Life - Bref (WHOQOL - BREF)

The World health organization quality of life project was started in 1991. The aim was to develop an international cross- culturally comparable quality of life assessment instrument. It determines a person's perceptions in the context of their culture and value systems, their personal goals, standards and concerns. It comprises of 26 items which measures the following broad domains: physical health, psychological health, social relationships and environment. The Whoqol-Bref is a shorter version of the original instrument that would be more convenient for use in large research studies [21].

Statistical Analysis

Frequency and percentages, Mean and Standard Deviation were used in summary statistics to report demography and clinical conditions. The quantitative variables across the groups were compared using the Students t-test and the categorical variables using the Chi-square test. Pearson's correlation coefficient was used to measure the association between the measured variables. Statistical analyses were done using SPSS 16.

Results

In our study sample, the mean age of the case group was 31.33 (sd 11.88) and for the controls the mean age was 34. 84 (sd 11). Among cases 28(50.9%) were males and 27 (49.1 %) were females. In controls 23 (41.8 %) were male and 32 (58.2 %) were female (Table 1). There was no statistical difference between the case and control groups and were comparable.

Among patient's, 44 (80 %) were Hindu, 8 (14.5 %) were Muslims and 3(5.5 %) were Christians. In control group, 44 (80 %) were Hindu, 7(12.7%) were Muslims and 4 (7.3 %) were Christians. Among the case group 30 were married (54.5 %) and 25 (45.5 %) were unmarried. In controls 35 (63.6 %) were married and 20 (36.4 %) were unmarried. In the case group, 32 (58.2 %) were skilled and 11 (20 %) were highly skilled. In controls 28 (50.9 %) were semi-skilled, 16 (29.1 %) were skilled and 11 (20 %) were highly skilled. The controls were more from semi-skilled occupations whilst cases are represented more in skilled professions.

When education was considered, among cases 4 (7.3 %) had primary school education,

Table 1. Sociodemographic characteristics of the investigated population

Grouping		Cases (%)	Controls (%)
Gender	Male	28 (50.9)	23 (41.8)
	Female	27 (49.1)	32 (58.2)
Religion	Hindu	44 (80)	44 (80)
	Muslim	8 (14.5)	7 (12.7)
	Christian	3 (5.5)	4 (7.3)
Marital Status	Married	30 (54.5)	35 (63.6)
	Unmarried	25 (45.5)	20 (36.4)
Occupation	Semi Skilled	12 (21.8)	28 (50.9)
	Skilled	32 (58.2)	16 (29.1)
	Highly Skilled	32 (58.2)	11 (20)
Education	Illiterate	1 (1.81)	NONE
	Primary School	4 (7.3)	4 (7.3)
	Secondary School	3 (5.5)	2 (3.6)

3 (5.5 %) had finished secondary school. 21 (38.2 %) had senior secondary school education. 20 (36.4 %) of them were graduates and 6 (10.9 %) has attained post graduate qualification or above. In controls 4 (7.3 %) had primary school education, 2 (3.6 %) had secondary education. 25 (45.5 %) had finished secondary school, 19 (34.5 %) were graduates. 5 (9.1 %) had post graduate qualifications or above. Majority in both the groups had senior secondary schooling or graduate level of education.

On comparing the types of vitiligo in our study sample 29.1 % had vulgaris, 27.3 % had focal type of vitiligo, and 32.7 % had acro-facial vitiligo, 5.5 % mixed and 5.5 % segmental type of vitiligo. The acro-facial, vulgaris and the focal were the most predominant subtypes of vitiligo, constituting for nearly 90% of all cases.

Both the groups were administered Hamilton depression rating scale to identify depression scale. Mean score in Hamilton rating scale was 11.40 (SD = 2.35) for cases and 4.91 (SD = 1.49) for the controls. This shows that all the cases scored for depression, whereas none of the controls had scores of above 7, the cut off for the presence of mild depression. The difference between these two groups is statistically highly significant.

Among those who had vitiligo and depressive symptoms, 42 (76.4 %) of the cases scored for mild depression and 9 (16.4 %) of the cases scored for moderate degree of depression based on HAMD scores. None of those who were controls had any significant score in HAMD. This showed that depression was associated with vitiligo. When comparison were made for the types of lesions which were associated with depression, there was presence of mild to moderate depression in all the three major sub types – Acro-facial, Vulgaris and Focal.

When a comparison was made between these groups for anxiety as assessed by Hamilton rating scale for anxiety (HAM-A), the overall score was statistically significant between the groups. Mean score in Hamilton

Table 2. Comparison of different aspects of QoL quality of life with types of vitiligo

Aspects of qol	Types of vitiligo					P Value
	Vulgaris	Focal	Acrofacial	Mixed	Segmental	
Physical (D1)	< 60	< 60	< 60	< 60	< 60	X ² = 16.587 df = 4 p value = 0.002**
	> 60	> 60	> 60	> 60	> 60	
Psychological (D2)	< 60	< 60	< 60	< 60	< 60	X ² = 6.550 df = 4 p value = 0.162
	> 60	> 60	> 60	> 60	> 60	
Social (D3)	< 60	< 60	< 60	< 60	< 60	X ² = 18.547 df = 4 p value = 0.001
	> 60	> 60	> 60	> 60	> 60	
Environmental (D4)	< 60	< 60	< 60	< 60	< 60	X ² = 9.961 df = 4 p value = 0.041
	> 60	> 60	> 60	> 60	> 60	

Values given in Percentage (N)

Table 3. Comparison of Dermatology life quality index (DLQI) severity with types of vitiligo

Dlqi	Vul	Focal	Acro-F	Mixed	Seg
Small effect	0	7	1	0	2
Moderate effect	2	6	6	2	0
Very large effect	14	2	11	1	1

$\chi^2 = 28.925$ df = 8, p - value = 0.0001***

DLQI = Dermatology Life Quality Index; VUL = Vulgaris; Acro-F = Acro-Facial; Seg = Segmental

anxiety rating scale was 13.2 (SD = 2.22) for cases and 8.9 (SD = 1.12) for the controls. The difference between these two groups was statistically significant, showing that patient's with vitiligo suffered from anxiety.

Among those who had vitiligo and anxiety symptoms, 23 (41.8 %) of the cases scored for mild anxiety and 2 (3.6 %) of the cases scored for moderate degree of anxiety based on HAM-A scores. This showed that anxiety was associated with vitiligo. When comparison were made for the types of lesions that were associated with anxiety, the Acro-Facial and the Vulgaris group had scored for more anxiety. However, this was not statistically significant.

When the mean score on quality of life scale (Whoqol-Bref) was compared between two groups, there was a statistically significant difference between these two groups. It showed that the overall general quality of life as measured by the WHO quality of life scale is lesser in people who have vitiligo as compared to those who do not have the disease (Table 2). As shown in Table 2, when the sub domains of the Who Qol Bref were analysed, the physical, social and environmental aspects showed difference among the groups, which was statistically significant.

Dermatological life quality index (DLQI) measures the quality of life and is more suited for patients with dermatological disease. The

total score obtained divides the group in to having small effect, moderate effect, very large effect and extremely large effect on patient's life. Comparison was made between the vitiligo sub-types and DLQI. There was a statistically significant difference between the groups on the DLQI scores (Table 3). This shows that the QOL is affected more in types where the severity of the disease is more, that is, by both the area affected and presence in exposed parts of the body. The quality of life is less in those cases where more area affected and in exposed regions.

Pearson product moment correlation calculation (Table 4) was carried out with the following variables. HAM-D, HAM-A, QOL-BREF, DLQI, VDAS AND VASI. In our sample the presence of both depression and anxiety correlated with the presence of vitiligo, showing a positive correlation. This showed that the more severe the vitiligo, the psychiatric morbidity was more.

VASI measures the area that is affected by vitiligo, whilst VDAS measures the duration of the condition vitiligo and it also scores for progression or regression of the disease with scores. Both depression (HAMD) and anxiety (HAM-A) when co-related showed moderately high correlation to the extent of the area affected. The duration of illness as assessed by VDAS was not correlated to either depression or anxiety. Possibly, it is the extent of the

Table 4. Pearson's product moment correlation matrix between Anxiety and Depressions Scales, quality of life scales, and vitiligo types and severity

		Pearson Correlations					
		HAM-D	HAM-A	QOL	DLQI	VDAS	VASI
HAM-D	Pearson Correlation	1	0.406**	-0.348**	0.373**	-0.016	0.389**
	Sig. (2-tailed)		0.002	0.009	0.005	0.907	0.003
	N	55	55	55	55	55	55
HAM-A	Pearson Correlation	0.406**	1	-0.349**	0.089	0.063	0.312*
	Sig. (2-tailed)	0.002		0.009	0.519	0.649	0.020
	N	55	55	55	55	55	55
QOL	Pearson Correlation	-0.348**	-0.349**	1	-0.635**	-0.266*	-0.888**
	Sig. (2-tailed)	0.009	0.009		0.000	0.050	0.000
	N	55	55	55	55	55	55
DLQI	Pearson Correlation	0.373**	0.089	-0.635**	1	0.295*	0.606**
	Sig. (2-tailed)	0.005	0.519	0.000		0.029	0.000
	N	55	55	55	55	55	55
VDAS	Pearson Correlation	-0.016	0.063	-0.266*	0.295*	1	0.283*
	Sig. (2-tailed)	0.907	0.649	0.050	0.029		0.036
	N	55	55	55	55	55	55
VASI	Pearson Correlation	0.389**	0.312*	-0.888**	0.606**	0.283*	1
	Sig. (2-tailed)	0.003	0.020	0.000	0.000	0.036	
	N	55	55	55	55	55	55

** . Correlation is significant at the 0.01 level (2 - tailed).

* . Correlation is significant at the 0.05 level (2 - tailed).

HAM – D = Hamilton Depression Rating Scale; HAM - A = Hamilton Anxiety Rating Scale; QOL = Quality of Life; DLQI = Dermatology Life Quality Index; VDAS = Vitiligo Disease Activity Scoring; VASI = Vitiligo Area Severity Index

area affected at the material time which causes emotional distress more.

When levels of significance are assessed for QOL scores on correlation matrix it can be observed that there is a higher level of significance between QOL and VASI scores and it is a positive correlation. This means that the poor quality of life may be more due to the severity of the illness as assessed by VASI rather than the presence of depression and anxiety.

Discussion

Patients with chronic dermatological conditions have a poor quality of life. Indian studies showed a mean age of 25.59, but in our case the mean age was higher which might be due selection of cases, who were diagnosed earlier and were already on treatment. The mean age between the cases and controls were not different statistically. However, the mean age was different from other quoted studies but

they were from different countries and possibly, our cases were on treatment for some time rather than seen on their first visit. Generally, vitiligo occurs at a young age [3].

Studies from Nigeria show a slight preponderance of females which is seen in many other studies, but study from India showed a preponderance of males which seen in our study also [22]. Kent and associates study showed a higher female incidence in their study [23]. According to the study done by Gopal and associates in India showed that males were affected more than females [22]. Higher proportion of females were seen suffering from vitiligo compared to males in a study done by Kent and associates [23]. They reported that 73 % of the patients were married in the study done by Kent and associates while only 28.2 % of the patients were married in Borimnejad's study [24].

Gopal and associates from South India reported 48% of their study population to had generalized vitiligo, acro-facial in 22.7%, focal in 16% and segmental in 13.3 % which is different from our study sample [22]. Some studies reported that facial lesions led to more of psychiatric morbidity than the covered ones [25]. This could be due to differences in the country and region studied.

Kent and associates study showed a higher prevalence of psychiatric morbidity in the form of high scores in GHQ. In India there is a higher level of stigma attached to disfiguring and visibly prominent dermatological conditions. Hence understandably there is a higher psychiatric morbidity in these patients.

There is a uniformly high prevalence of psychiatric morbidity in studies from India. This has been replicated in many studies over time and from various regions of India. In a study carried out in Gulbarga, Karnataka 63.8 % had major depression [26]. Osinubi and associates have carried out systematic review of psychiatric morbidity in patients with vitiligo and they have concentrated on depression and

anxiety. They have noted a pooled prevalence of 0.29 (CI 95 % 0.21 - 0.38) and anxiety of pooled prevalence of 0.33 (CI 95 % 0.18 - 0.49). This study shows a higher prevalence of depression and anxiety [27]. Our study was in contrast to the study done in Gulbarga were 63.8 % had severe depression.

There is a high incidence of anxiety in cases as compared to controls. As said earlier anxiety is about future events and it is possible that people with vitiligo have some trepidation about their progress of the disease. Study done in Mumbai showed a lesser incidence of anxiety compared to other studies [28].

Many studies have assessed the quality of life in patients with vitiligo. There seems to be a uniform finding of poor quality of life being associated with vitiligo. Since the controls are relatives and friends of the patients, it can be presumed to be from same or similar socio-economic background. Hence, the perception of the poor quality of life can possibly be from the difference of having a disease Vitiligo. Many studies on vitiligo state that nearly half their sample believed that their illness had a major impact on their life [29]. This condition apart from causing physical discomfort also affects the patient's personal life, social life daily functioning and psychological status as noted by Jayaprakasham and Harlow [13,30].

Dermatology life quality index is a validated scale to assess the quality of life in dermatological patients. Patients who are diagnosed with large effect on this scale have lesser quality of life as compared to moderate and small effect. The quality of life was compared with vitiligo affected areas. Though these various sub divisions denote anatomical areas, it also gives some indication about exposed vs. non exposed areas. There has been a statistically significant difference between these groups on the DLQI scores. It is affected more in types where the severity of the disease as measured by the area affected and on exposed areas also.

The quality of life is less in those cases where more area affected and in exposed regions. This result may be due to stress caused by the severity of the disease, the stigma of having obvious lesions and the attendant social embarrassment.

Mishra and associates in their study have addressed this issue and their results show that vitiligo affects the quality of life negatively [31]. Sangma and associates have addressed this aspect in their study on quality of life and psychiatric morbidity in patients with vitiligo and have shown that the quality of life in patients with vitiligo was very poor [32]. Dolatshahi and associates have studied the quality of life in vitiligo patients and have shown that severe affection in DLQI is associated with visibility of lesions [33]. In our sample the presence of both depression and anxiety correlated the presence of vitiligo showed a positive co-relation. They are positively correlated which means that more severe the illness the psychiatric morbidity is more.

QOL was measured against depression as assessed by HAM-D and HAM-A. Quality of life measurements assess the person's perception and opinion about his life. A cut off point of 60 divides the score as good or poor quality of life. For the purpose of correlation assessment, assumption was made to consider the QOL score as a continuous variable and subjected to Pearson-moment correlation. There was a negative correlation between the scores of HAM-D, HAM-A on one hand and QOL. This makes the inference that a reduction in QOL score is seen with increase in HAM-D, HAM-A scores. A higher score on these variables which shows pathology is correlated to reduced score on QOL which denotes a poor quality of life. Being depressed and anxious is associated with negative cognition. The presence of vitiligo which is a stigmatizing illness and psychological issues will lead to a poor quality of life as well as perception of poor quality. A study carried out is

Saudi Arabia reported a direct relationship between vitiligo, psychiatric morbidity and poor quality of life. This study showed a positive correlation between quality of life, MADRS depression scores and HAM-A anxiety scores [34]. Study from India have shown a positive relationship between lower quality of life and higher psychiatric morbidity supporting the findings of this study [35]. There is a highly significance of difference statistically between the groups as for as physical quality of life is concerned. The extent of the lesion and the anatomical area affected is bound to cause distress in the physical aspect of the quality of life. Harlow and Jeyaprakasham and associates have remarked that the physical discomfort and inconvenience have led to disruption of poor quality of life [13,30]. The psychological distress was milder in terms of physical social and environmental distress.

Vitiligo is affects social aspect of a person's life. The sufferer is unable to be comfortable because of the disfigurement and unsightly lesions. Other members of the society also may show revulsion which is perceived by the patient. Onunu and associates also have reported that patients who have vitiligo in exposed areas of the body have social stigmatization due to the false impression that it might be leprosy [3]. There is a very highly statistical difference between various types of vitiligo and the quality of life. There seems to be a poor quality of life in vulgaris and acro-facial group as compared to focal and segmental group. Ongenae and associates have also noted this in their study of quality of life and types of vitiligo [36]. It stands to reason that when the lesions are in the exposed areas of the body there is bound to be repercussions in the psychological social and physical spheres.

The dermatological quality of life as assessed by DLQI is more specific for dermatological cases. This divides the group in to having small effect, moderate effect and very large effect in the quality of life. This aspect

was compared with the scores on VASI which measures the area affected in vitiligo. There is a relationship between the area affected and the quality of life. This may be due to the exposed areas affected along with the extent affected. Ongenae and associates have noted this aspect and have stated that the extent of vitiligo moderately involved was significantly associated with increasing DLQI scores [36]. Increasing scores on this scale types the disease in to vulgaris, acro-facial segmental etc. Vitiligo disease activity scoring assesses the duration of illness. When this factor is analysed along with vitiligo activity severity score, psychiatric morbidity and quality of life they do not show any relationship in this study. Though it is a pragmatic way of assessing the duration of the illness it doesn't seem to have any relationship with the above mentioned factors.

This is a cross sectional study carried out on hospital attending patients whose treatment variables and response also may have a bearing on mental health and quality of life. A larger sample of untreated patients will provide a clearer picture on the illness variables

causing mental morbidity and poorer quality of life. Some of the dermatological illnesses have a larger impact on the person not because of the life threatening nature of it but due to the stigma attached to it. This relationship needs to be further studied with larger sample including similar diseases as comparison. The cases that need to be included as comparison may similar dermatological illnesses like Psoriasis and Hansen's disease or other stigmatizing illnesses like psychiatric illnesses where the comparison could be persons with dermatological illnesses with less incidence of psychiatric disease.

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Conflict of interest

None to declare.

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