



### Research Article

## Psychological Morbidity and Quality of Life in Patients with *Shwitra* (Vitiligo): A Comparative Cross-Sectional study with Healthy Controls

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### Abstract

**Background:** *Shwitra* [Vitiligo] may become a psychologically devastating disorder. The present study focuses on the assessment of quality of life and level of depression in patients with *Shwitra* [Vitiligo] and compares them with a matched control population. **Methods:** A hospital-based, comparative, cross-sectional, case-control study was conducted at Parul Ayurved Hospital, Vadodara, Gujarat [IEC approval PU/PIA/IECHR/2019/88; CTRI/2019/12/022567]. Convenience sampling technique was used. 200 previously diagnosed patients of *Shwitra* and 200 apparently healthy, age-matched volunteers were enrolled. The age range was 20–59 years [mean age 34.9 years in each group]; 120/200 participants were female and 80/200 male in each group. Depression was measured using the Hamilton Depression Rating Scale [HAM-D], quality of life using the Dermatology Life Quality Index [DLQI], and disease extent using the Vitiligo Area Scoring Index [VASI]. Group comparisons used the independent-samples t-test for mean HAM-D scores, and the chi-square test of independence for categorical associations. **Results:** HAM-D scores were normal in 13/200, mild in 96/200 and moderate in 91/200 patients, while normal in 191/200, mild in 6/200 and moderate in 3/200 controls. DLQI was unaffected in 3/200, small effect in 91/200, moderate effect in 95/200, and large effect in 11/200 patients. Mean HAM-D scores were significantly higher in patients than in controls [ $p = .000$ ]. HAM-D and DLQI were strongly associated [Cramer's  $V = 0.571$ ,  $p = .000$ ]. **Conclusion:** Vitiligo is associated with substantially higher depression and poorer quality of life than in matched healthy controls.

**Keywords:** DLQI, HAM-D, Leucoderma, *Shwitra*, VASI, Vitiligo.

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## Introduction

*Ayurveda* – a timeless discipline of wellness focuses on the physical, mental, and spiritual health of individuals, addressing every facet of human existence. It is more than just a science of material things; it embodies a philosophical truth that has been enriched by our ancient sages through their insights, reasoning, and profound wisdom.

The desire to become beautiful is closely linked to becoming white, and over time, the importance of beauty also increases. Though white colour reflects cleanliness, peace and calmness, as per the rule of nature, 'always avoid excessiveness', excess in whiteness disturbs the physical as well as psychological homeostasis of a human being. *Shwitra* or Vitiligo doesn't possess

much internal pathology/morbidity, but it causes cosmetic disfigurement, leading to psychological trauma to the patients.

Skin is a mirror that reflects external and internal pathology. It is the first organ of the body to interact with environmental stimuli, and the body's natural ability to deal with these factors results in spontaneous remissions and relapses. Interaction with these factors results in a specific reaction pattern producing characteristic skin lesions in different body parts. Large community prevalence studies have demonstrated that about 20 – 30 % of the world population has various skin problems requiring attention (1). Skin diseases affect all ages, from neonates to the elderly and cause harm in several ways, such as discomfort, disfigurement, disability, etc.

*Shwitra* – a soul-harrowing disease is one among various skin diseases. It is a very distressing disease both for the patients and the physicians. It is a major problem for patients, especially unmarried females, because of its ugly appearance and presentation of the body, which may disturbs his personal, familial and social life. For physicians, *Shwitra* is troublesome because there is a lack of a particular remedy for a radical cure and its poor prognosis.

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All the skin diseases in *Ayurveda* have been described under the heading of *Kushtha*. *Kushtha* is divided into *Maha Kushtha* and *Kshudra Kushtha*. However, *Shwitra* has not been counted among the various types of *Kushtha* in *Brihatrayi*. *Shwitra* is mentioned along with other types of *Kushtha*, but the difference between *Shwitra* and *Kushtha* is based on the non-secretory and non-infectious nature of the disease, involvement of *twak* only, peculiarity of *nidana*, *asadhya lakshana* and chronicity. According to modern dermatology, *Shwitra* can be correlated with Vitiligo and leucoderma.

Vitiligo is not a disease of today's era, but has caused a lot of suffering to human beings for a long time. Normal skin colour is dependent on haemoglobin [in both the oxygenated and reduced state], carotenoids and melanin pigment (2). Vitiligo is a common disorder of unknown etiology even today (3). Worldwide prevalence of Vitiligo is observed as 1 % of the population (4). Based on dermatological outpatient records, it is estimated between 0.25-2.5 % in India (5), although an incidence as high as 8.8% in Gujarat and Rajasthan states has also been reported (6).

Vitiligo may become a psychologically devastating disorder when it typically occurs in exposed areas [face and hands] and has a major impact on self-esteem and perception of the self. In some societies, women with Vitiligo have difficulty getting married and finding educational and vocational opportunities according to their skills. Many patients worry about the disease worsening, have their social life affected, and feel embarrassment, depression and shame (7). Vitiligo on the face is ranked 17<sup>th</sup> by WHO in the world's most disabling diseases.

#### Recent epidemiological burden of depression among vitiligo patients

Recent global studies show that vitiligo causes a heavy mental health burden.

A large 2024 review combined data from 30 different studies [13 case-control, 17 cross-sectional] and found that 31% of people with vitiligo experience depression or depressive symptoms. This means people with vitiligo are over 10 times more likely to get depressed than healthy individuals (71).

Another study using the Hamilton Depression Rating Scale found that about 56% of vitiligo patients showed signs of depression when using this tool, making them nearly 5 times more likely to be depressed than those without the condition. These findings match the high depression rates seen in the current group of patients being studied (72).

A 2024 cross-sectional study from Saudi Arabia [340 adult patients, simple random sampling] found a major depressive disorder prevalence of 58.8%, with depression severity ranging from mild to severe and female gender independently associated with higher chances of severe depression (73).

A 2022 Iranian study found that 63% of vitiligo patients experienced moderate-to-severe stigmatisation, which correlated significantly with quality-of-life impairment and was more pronounced in women and in facial or hand involvement (74).

#### Current evidence on quality of life

A 2024 cross-sectional study on quality of life and clinical severity in patients with skin of colour found that higher VASI scores were generally associated with lower DLQI scores, and that lesions on cosmetically exposed sites had a disproportionately large effect on quality of life irrespective of total body surface area involved (75).

A 2023 observational study from a tertiary-care Indian hospital described a mean DLQI of  $11.73 \pm 0.80$ , equivalent to a moderate-to-large effect on quality of life (76).

The present study focuses on the assessment of quality of life and level of depression in patients with vitiligo and compares it with that of the matched control population.

#### Research Gap

Most Indian studies to date have not used a validated depression instrument along with a validated dermatology-specific Quality of Life instrument in the same cohort, and have rarely examined the association between depression / Quality of Life and Ayurvedic constitutional variables such as Manas Prakriti and *Satva*. This represents a gap that the present study was designed to shed light on by directly comparing a large, age-matched trial and control group using the HAM-D, DLQI and VASI tools simultaneously.

#### Study Hypothesis

**Null Hypothesis (H0):** Reduced Quality of Life and Depression are not related to *Shwitra* [Vitiligo].

**Alternate Hypothesis (H1):** Reduced Quality of Life and Depression are related to *Shwitra* [Vitiligo].

#### Aim of the Study

- To study the effect of *Shwitra* [Vitiligo] on Quality of Life and Depression.

#### Objectives of the Study

- To compare the frequency and the level of depression using the Hamilton Depression Rating Scale [HAM-D] in patients of *Shwitra* [Vitiligo] with that of a matched control sample.
- To assess the quality of life using the Dermatology Life Quality Index [DLQI] in patients with *Shwitra* [Vitiligo].
- To compare the symptoms of *Vishad* present in the control and trial groups.

## Materials And Methods

#### Study Design

This was a hospital-based, observational, analytical, comparative [case-control] cross-sectional study, conducted at a single Ayurvedic teaching hospital.

*Shwitra* patients and apparently healthy individuals defined the two comparison groups, and depression [HAM-D] and quality of life [DLQI] outcomes were measured once, at a single time point, in each participant.

The study was conducted at Parul Ayurved Hospital, Vadodara, Gujarat, after approval from the Institutional Ethics Committee [PU/PIA/IECHR/2019/88] and registration with the Clinical Trials Registry of India [CTRI/2019/12/022567]. Written informed consent was obtained from every participant before enrolment.

#### Sampling Technique

- Sampling method: Non-probability convenience sampling.
- Recruitment period: 2020-2021
- Number screened for eligibility: 435
- Number excluded: 35 [20 did not meet inclusion criteria and 15 declined consent].

- Number finally enrolled and analysed: 200 patients [trial group] and 200 apparently healthy volunteers [control group].
- Response rate: 91.95

#### Source of Data

- Trial group: 200 previously diagnosed patients of *Shwitra* [Vitiligo] from Vadodara district.
- Control group: 200 apparently healthy, age-matched volunteers from Vadodara district.

#### Method of Collection of Data

Detailed demographic variables [age at onset, disease duration, disease course] and family history were recorded for trial-group participants. Clinical examination documented the type of *Shwitra*, site and extent of involvement; the VASI score was used to grade disease severity.

English-language versions of the DLQI and HAM-D-17 questionnaires were translated into Gujarati by two independent bilingual translators; forward and backward translation were performed by different translator pairs, and the translated versions were validated by a panel of three members before use.

#### Hamilton Depression Rating Scale (HAM-D) — Administration Details

- Language of administration: Gujarati [forward-backwards translated and panel-validated version]; an English version was available for participants literate in English.
- Administered by: Dr. Ketki Arun Aurangabadkar
- Training of investigators: As HAM-D was administered by the researcher itself, no separate training was taken.

The HAM-D form lists 21 items, of which scoring is based on the first 17: eight items are scored on a 5-point scale [0 = not present to 4 = severe] and nine on a 3-point scale [0–2]. Scores were graded as normal [0–7], mild depression [8–13], moderate depression [14–18], and severe depression [19–22].

Quality of life was assessed with the 10-item Dermatology Life Quality Index [DLQI] questionnaire after informed consent. DLQI was introduced by Prof. A. Y. Finlay. It is a valid questionnaire including 10 items on patients' symptoms, feelings, routine activities, kind of clothes, social or leisure activities, physical exercise, educational activities, sexual activities, interpersonal relationships, and treatment options, with a 0-30 point score (8,9,10). Grading was no effect [0–1], small effect [2–5], moderate effect [6–10], very large effect [11–20], and extremely large effect [21–30].

Hamzavi et al. (11) have introduced a quantitative parametric score, named VASI for Vitiligo Area Scoring Index, which is conceptually derived from the PASI score widely used in psoriasis assessment (12). The total body VASI is calculated using a formula that includes contributions from all body regions [possible range, 0–100]. One hand unit, which encompasses the palm plus the volar surface of all the digits, is approximately 1% of the total body surface area (13) and is used as a guide to estimate the baseline percentage of Vitiligo involvement in each body region. The body is divided into five separate and mutually

exclusive regions: hands, upper extremities [excluding hands], trunk, lower extremities [excluding feet], and feet. The axillary region is included with the upper extremities, while the buttocks and inguinal areas are included with the lower extremities. The extent of residual depigmentation is expressed by the following percentages: 0, 10%, 25%, 50%, 75%, 90%, or 100%.

#### Inclusion Criteria

##### Trial group (*Shwitra* / Vitiligo patients)

- Age 20–59 years, of either gender, resident of Vadodara district.
- Clinically diagnosed *Shwitra* [Vitiligo] patients, irrespective of type [*Vataj/Pittaj/Kaphaj*], site, or extent of involvement.
- Willing and able to provide written informed consent and to complete the HAM-D and DLQI questionnaires in Gujarati or English.
- No restriction by caste, religion or socio-economic status.

##### Control group (Apparently healthy volunteers)

- Age and sex comparable to the trial group, residents of Vadodara district.
- No clinically apparent dermatological disease, in particular no vitiligo or other pigmentary disorder, on examination.
- Willing to provide written informed consent and complete the HAM-D questionnaire.

#### Exclusion Criteria

- Leukoderma occurring strictly following physical trauma [cut, burn, or ulceration] — to distinguish from idiopathic vitiligo.
- Personal or family history of mental illness.
- Any other major systemic disorder [Systemic Lupus Erythematosus, Diabetes Mellitus, Acquired Immune Deficiency Syndrome] or congenital brain/spinal cord anomaly.
- Any other obvious/organic cause of depression not attributable to *Shwitra*.

#### Assessment Criteria:

##### Subjective Parameters:

Assessment of depression: Hamilton Depression Scale [HAM-D]

- 0 – 7: Normal
- 8 – 13: Mild depression
- 14 – 18: Moderate depression
- 19 – 22: Severe depression

Assessment of quality of life in *Shwitra* [Vitiligo] patients: Dermatology Life Quality Index [DLQI]

- 0 – 1: No effect at all on the patient's life
- 2 – 5: Small effect on the patient's life
- 6 - 10: Moderate effect on the patient's life
- 11 – 20: Very large effect on the patient's life
- 21 – 30: Extremely large effect on the patient's life

**Objective Parameters**

| Symptoms               | Gradation (VASI Score)                                                                                                                                                                                                                                                                                                    | Observation |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Whitish discoloration  | 1: 10 %, Only specks of depigmentation are present<br>2: 25 %, The pigmented area exceeds the depigmented area<br>3: 50 %, Depigmented and pigmented areas are equal<br>4: 75 %, Depigmented area exceeds the pigmented area<br>5: 90 %, Specks of pigment are present<br>6: 100 %, Depigmentation; no pigment is present |             |
| Area of <i>Shwitra</i> | Exposed / Unexposed / Both                                                                                                                                                                                                                                                                                                |             |

**Type of *Shwitra***

| Type          | Symptoms           | Gradation | Description                                                                                   | Observation |
|---------------|--------------------|-----------|-----------------------------------------------------------------------------------------------|-------------|
| <i>Vataj</i>  | Blackish           | ----      | ----                                                                                          |             |
|               | May Disappear      | ----      | ----                                                                                          |             |
|               | Dry                | 1         | No line when scrubbing with a nail                                                            |             |
|               |                    | 2         | Faint line when scrubbing with a nail                                                         |             |
|               |                    | 3         | Lines and even words can be written with a nail.                                              |             |
|               |                    | 4         | Excessive dryness leading to itching                                                          |             |
| <i>Pittaj</i> | Reddish like lotus | 5         | Dryness leading to crack formation                                                            |             |
|               |                    | ----      | ----                                                                                          |             |
|               |                    | 1         | No burning                                                                                    |             |
|               |                    | 2         | Occasional localised burning sensation                                                        |             |
|               | Burning            | 3         | Localised mild burning sensation in a particular hour of the day                              |             |
|               |                    | 4         | Burning throughout the day – tolerable and relieved after cold medications                    |             |
| <i>Kaphaj</i> | Whitish            | 5         | Intolerable burning sensation throughout the day, which can't be relieved by cold medications |             |
|               |                    | ----      | ----                                                                                          |             |
|               |                    | 1         | No thickness                                                                                  |             |
|               | Thick              | 2         | Mild thickening                                                                               |             |
|               |                    | 3         | Moderate thickening                                                                           |             |
|               |                    | 4         | Very thick thickening                                                                         |             |
|               |                    | 5         | Very thick with indurations                                                                   |             |
|               | Itching            | 1         | No itching                                                                                    |             |
|               |                    | 2         | Mild/occasional itching                                                                       |             |
|               |                    | 3         | Moderate/frequent itching                                                                     |             |
|               |                    | 4         | Severe frequent itching                                                                       |             |
|               |                    | 5         | Very severe itching that disturbs sleep and routine activities                                |             |
|               | Oily               | 1         | No oiliness                                                                                   |             |
|               |                    | 2         | Occasional oiliness                                                                           |             |
|               |                    | 3         | Oiliness in a particular hour of the day (after getting up from sleep)                        |             |
|               |                    | 4         | Oiliness throughout the day – tolerable                                                       |             |
|               |                    | 5         | Intolerable oiliness throughout the day                                                       |             |

**Statistical Analysis:**

Categorical variables [e.g., gender, area of *Shwitra*, *manas prakriti*, *satva*] were summarised as frequencies and percentages and compared using the chi-square ( $\chi^2$ ) test of independence of attributes.

The standard assumptions for the chi-square test are: **Both variables are categorical, all observations are independent, Cells in the contingency table are mutually exclusive, and the expected value of cells should be 5 or greater in at least 80% of**

**cells.** Strength of association for each significant chi-square result was quantified using Cramer's V as the effect-size measure.

The mean HAM-D score of the trial and control groups and the between-group difference in mean HAM-D score were tested using the independent-samples t-test [Levene's test for equality of variances]. Normality testing passed before independent t-test.

All statistical analyses were performed using IBM SPSS Statistics Version [26].

## Results

### HAM-D Score

Trial group: Normal in 13/200 [6.5%], mild in 96/200 [48%], moderate in 91/200 [45.5%].

Control group: Normal in 191/200 [95.5%], mild in 6/200 [3%], moderate in 3/200 [1.5%]; 9/200 [4.5%] controls had depressive symptoms overall.

Mean HAM-D scores were significantly higher in patients than in controls [ $p = .000$ ].

### DLQI Score

Not affected in 3/200 [1.5%], small effect in 91/200 [45.5%], moderate effect in 95/200 [47.5%] and large effect in 11/200 [5.5%] patients.

### Chi-Square Associations (Trial Group)

- Gender \* DLQI: Cramer's V = 0.394,  $p = .000$ ; DLQI scores were higher in females.
- *Vyayam shakti* \* DLQI: Cramer's V = 0.420,  $p = .000$ .
- *Manas prakriti* \* DLQI: Cramer's V = 0.426,  $p = .000$ .
- *Satva* \* DLQI: Cramer's V = 0.426,  $p = .000$ .
- VASI \* DLQI: Cramer's V = 0.469,  $p = .000$ .
- Area of *Shwitra* \* DLQI: Cramer's V = 0.394,  $p = .000$ ; exposed or combined exposed/unexposed involvement was associated with poorer quality of life.
- Gender \* HAM-D: Cramer's V = 0.439,  $p = .000$ ; depression prevalence was higher in females.
- *Agni* \* HAM-D and *Aahar shakti* \* HAM-D: Cramer's V = 0.293,  $p = .000$ ; depression prevalence was higher in patients with *mandagni* and *Avara aahar shakti*.
- *Vyayam shakti* \* HAM-D: Cramer's V = 0.383,  $p = .000$ .
- Sleep \* HAM-D: Cramer's V = 0.375,  $p = .000$ .
- *Manas Prakriti* \* HAM-D and *Satva* \* HAM-D: Cramer's V = 0.834,  $p = .000$ . The strongest associations were observed, indicating that *Rajasika/Tamasika manas prakriti* and *Avara satva* were strongly linked to greater depression.
- VASI \* HAM-D: Cramer's V = 0.383,  $p = .000$ .
- DLQI \* HAM-D: Cramer's V = 0.571,  $p = .000$ . HAM-D and DLQI were strongly associated. Poorer quality of life co-occurred with greater depression.
- Area of *Shwitra* \* HAM-D: Cramer's V = .303,  $p = .000$
- No significant association was observed between *Agni*, *Ahara shakti*, Sleep, *Sharir prakriti* or family history and DLQI in the trial group.
- No significant association was observed between *Sharir prakriti*, family history of *Shwitra* and HAM-D in the trial group.

### Chi-Square Associations (Control Group)

- Gender \* HAM-D: Cramer's V = 0.181,  $p = .038$ ; depression prevalence was higher in females.

- *Agni* \* HAM-D and *Aahar shakti* \* HAM-D: Cramer's V = 0.306,  $p = .001$ ; depression prevalence was higher in patients with *mandagni* and *Avara aahar shakti*.
- *Vyayam shakti* \* HAM-D: Cramer's V = 0.582,  $p = .000$ .
- Sleep \* HAM-D: Cramer's V = 0.423,  $p = .000$ .
- *Manas prakriti* \* HAM-D and *Satva* \* HAM-D: Cramer's V = 0.944,  $p = .000$ . The strongest associations were observed, indicating that *Rajasika/Tamasika manas prakriti* and *avara satva* were strongly linked to greater depression.
- No significant association was observed between *Sharir prakriti* and HAM-D in the control group.

## Discussion

### Rationale for Topic Selection

Disorders of pigmentation impact the social interactions of an individual. They must deal not only with the disease itself but also with the responses of other people. Vitiligo is considered a major medical and social problem in India because of the risk of social exclusion it carries. *Shwitra* is moreover of interest because it is a *Sharir vyadhi* [somatic disorder] with a predominantly *Manas hetu* [psychological causation]. Its major *Upadrava* [complication], i.e. *Vishad/Avasada* [depression], is itself a *Manas vyadhi*. It makes the disease a useful model for studying the *Sharir–Manas* relationship.

### Interpretation of findings

The trial group shows markedly higher HAM-D scores than the control group. In the trial group, 93.5% of patients [mild + moderate] show some depressive symptomatology compared with only 4.5% of the control group. In the trial group, 99% of patients reported some degree of DLQI impairment.

These findings support the alternative hypothesis [H1] that reduced quality of life and depression are related to *Shwitra* [Vitiligo].

The strong DLQI–HAM-D association was observed [Cramer's V = 0.571], indicating that impaired quality of life and depressive symptoms tend to co-occur rather than being independent consequences of the disease.

### Comparison with Recent International Studies

In this study, 45.5% of the patients had moderate depression. This number is a bit higher than a large 2024 global review of 30 studies, which found that 31% of vitiligo patients had depression. Both studies show that people with vitiligo are much more likely to experience depression than healthy people (71).

Another study using the same tool [the HAM-D scale] found a 56% depression rate (72). This is closer to the 93.5% rate [combining mild and moderate depression] found in this study. This suggests that using self-filled forms in Indian hospitals might catch a wider range of mild or early-stage depression symptoms.

Similarly, a 2024 study in Saudi Arabia found an even higher major depression rate of 58.8% (73). Just like this study, it showed that women tend to experience more severe depression.

This study also found that having vitiligo on visible areas [like the face or hands] severely affects a patient's quality of life. This matches research from 2022 and 2024, which showed that visible spots hurt quality of life and increase social stigma, especially for women, regardless of how much of the body is affected (74)(75).

## Biological Mechanisms

It is believed that vitiligo and depression are linked by actual biological changes in the body, not just by the emotional stress of skin changes.

Two main physical pathways connect the two conditions:

- **Oxidative Stress [Cell Damage]:** People with vitiligo have less protection against cell damage [antioxidants] and higher levels of cell stress. This cell stress is causing major depression. This shared biological problem might cause both conditions to happen at the same time (77).
- **Brain and Nerve Signals:** Vitiligo alters how the body responds to stress through the brain and skin nerves. The skin releases specific chemical messengers [neuropeptides] that damage skin color cells and cause inflammation. Since these same chemical pathways control stress and mood in the brain, this nerve inflammation may directly cause symptoms of depression (78).

## Ayurvedic interpretation

*Ayurveda* considers *Sharir* [body] and *mana* [mind] as the two pathways for the manifestation of disease. Mind has three constituents: *satva* [balance], *raja* [arrogance] and *tama* [indolence]. The latter two are reactive tendencies, which vitiate the mind, leading to emotional and psychological disturbances. Therefore, they are termed as two *doshas* of the mind. The three bio humours, *Vata*, *Pitta* and *Kapha*, are termed as *doshas* of the body. They vitiate the body, leading to metabolic disturbances and somatic disturbances. The body and mind have a separate set of etiopathological agents, and hence all are categorised under two basic Groups – somatic and psychological. Psyche and soma are always interrelated. They interact and influence each other and manifest in a large Group of disorders known as psychosomatic disorders.

*Acharya charak* has mentioned 140 *nanatmaja vikara*. Among those *vikaras*, some *manas vikaras* are also mentioned, which are: *Ashabda Shravana* [auditory hallucination], *tama* [fainting], *bhrama* [vertigo], *vishad* [depression], *atipralapa* [delirium], *asvanpna* [insomnia], and *anavasthita chitta* [unstable mind] – originated due to *Vata dushti*, *tandra* [stupor] and *nidradhikya* [hypersomnia] – originated due to *kapha dushti* (14).

*Acharya Charaka* explains that *kama*, *shoka* and *bhaya* vitiate *Vata*, and *krodha* vitiates *Pitta* (15, 16). *Ayurvedic* classics have mentioned many *sharir vyadhi* [somatic disorders], which are caused by *manas hetu* [psychological factors], which are as follows:

- *Vataj Jwara* (17), *Vataj Gulma* (18), *Vataj Prameha* (19): *Shoka*
- *Pittaj Jwara* (20), *Pittaj Gulma* (21), *Pittaj Prameha* (22), *Pittaj Kasa* (23), *Pittaj Atisar* (24), *Vatarakta* (25): *Krodha*
- *Kustha* (26): *Bhaya*
- *Sannipatika Atisar* (27): *Bhaya*, *Shoka*, *Chittodvega*
- *Vataj Chhardi* (28): *Shoka*, *Bhaya*
- *Trushna* (29): *Bhaya*, *Shoka*, *Krodha*
- *Arochaka* (*Sannipatika*) (30): *Shoka*, *Bhaya*, *Lobha*, *Krodha*
- *Hrudroga* (31): *Chinta*, *Bhaya*
- *Vata Vyadhi* (32): *Chinta*, *Shoka*, *Krodha*

In *Shwitra*, also *Acharya* mentioned specific *hetu*: *Vachansi atathyani*, *Krutaghna bhava*, *Suranam ninda*, *Guru gharshanam* and *Papa kriya* (33) which are mainly *manasika*. *Shwitra* [Vitiligo] causes cosmetic disfigurement, leading to psychological trauma [depression] in patients. Antidepressant therapy may be needed in moderate/extreme cases.

Depression or *Vishad* may worsen the disease condition in Vitiligo because *Vishad* is the main factor that aggravates the existing disease condition, as per *Acharya Charaka* (34). Treatment of *Vishad* may not only help to prevent the deterioration of the existing disease condition of Vitiligo, but also help in the treatment success.

The same principle can be applied to all the diseases mentioned in the above list.

## Social impact of the study

*Shwitra* [Vitiligo] have distinct importance in patients in India because depigmentation is noticeable on darker skin, and a huge stigma is associated with the disease in Indian culture. Vitiligo patients from India suffer more social problems, as compared to other countries (68).

In this study, we have observed that there is significant depression in patients with Vitiligo. It has also been observed that Vitiligo patients had lower self-esteem as compared with the control Group. Women had a greater quality of life impairment and depression than men. It was also observed that Vitiligo is a serious illness in view of its possible adverse effects on marriage, securing a job, stigma and desirable appearance. Problems at work place or difficulty in getting jobs of their choice were also observed. Many patients were looking after other carriers not of their choice on account of Vitiligo. Few patients were forced to get married at an early stage of their disease or depigmentation for the fear that Vitiligo would spread all over and mar their prospects of marriage if delayed. The first reaction of most of the patients on seeing their patch was to ignore it. It was attributed by them to another illness, such as allergy, dryness, leprosy, calcium deficiency, worms, fungal infections, burns, insect bites and trauma. This leads to delayed seeking of expert opinions and treatment.

Considering all the above observations, we can state that Vitiligo affects patients in diverse ways. In spite of educational background, misconceptions of patients were similar for all people. Such misconceptions can be avoided by educating people / awaking people about the etiopathology of this disease and the curable aspects of this disease. Counselling at the initial stage can prevent depression or *Vishad*. Counselling can increase the *satva* [mental strength] of the patient and can enhance the response to the treatment, as stated by *Acharya Charaka* – *Vishad* is responsible for aggravation of the disease. This study tries to put emphasis on this important aspect of *Ayurveda* in vivo in vitiligo. Counselling treatment will be of tremendous use to avoid aggression of the disease since the detection of Vitiligo as early as possible. Management of Vitiligo should include evaluation of the psychological and social factors along with the dermatological factors (69, 70). A multidisciplinary approach can be adapted for treating Vitiligo. A psychologist can treat depression through cognitive-behavioral therapy and a stress management program.

## Conclusion

- The mean HAM-D score differed significantly between the trial and control groups [ $p = .000$ ], supporting a real association

between *Shwitra* [Vitiligo] and depression. This result is consistent with the pooled odds ratio of 10.25 for depression in vitiligo versus controls reported in the 2024 international meta-analysis (71).

- Both the percentage and severity of depression were greater in the trial group than in the control group. This result matches the elevated HAM-D-based depressive-symptom prevalence [~56%] reported internationally when this specific instrument is used (72).
- DLQI was affected in almost 99% of patients, confirming a significant adverse effect of Vitiligo on dermatology-specific quality of life. This result is consistent with recent [2023–2024] Indian and international data showing moderate-to-large DLQI impairment and a disproportionate impact of exposed-site lesions (75, 76).
- These findings support the *Ayurvedic* principle that *Vishad* [depression] can aggravate an existing *Sharir Vyadhi*, and indicate a role for *Ayurvedic* management of *Shwitra* associated depression through *Yukti Vyapashraya* and *Daiva Vyapashraya Chikitsa*, used along with conventional dermatological care.
- An empathetic, supportive doctor–patient relationship, early treatment, accurate information about the disease, good social support, and psychotherapeutic intervention where indicated can help patients live with *Shwitra* and manage the associated psychological comorbidity.

#### Limitations of the Study

- This study was conducted at a Single-hospital using a convenience sampling design, which may limit generalizability to the wider population.
- HAM-D was administered as a self-completed/interviewer-scored questionnaire rather than through a structured clinical psychiatric interview.
- Additional clinical evaluation by a psychiatrist is recommended to confirm the diagnosis of depression rather than relying on HAM-D score alone.
- Participants were informed in advance that they were being assessed for depression and quality of life, which may have introduced response bias.

#### Further Scope of the Study

Comparative study of Vitiligo treatment outcomes with and without psychological counselling.

Effect of depression on treatment success/response in Vitiligo.

Effect of depression on treatment success in other dermatological conditions.

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