

A Cross-Sectional Study to Assess the Psychosocial impact of Skin Diseases

Ajay Singh Raghuwanshi¹, Sanjeet Diwan², Hritu Singh³, Kalyani Chandrakant Raghuwanshi⁴

¹Assistant Professor, Department of Skin & VD, RKDF Medical College Hospital & Research Center, Bhopal (MP)

²Assistant Professor, Department of Psychiatry RKDF Medical College Hospital & Research Center, Bhopal, (MP)

³Associate Professor, Department of Psychiatry, RKDF Medical College Hospital & Research Center, Bhopal (MP)

⁴Assistant Professor, Department of Radiology, RKDF Medical College Hospital & Research Center, Bhopal (MP)

Received: 29-07-2022 / Revised: 20-08-2022 / Accepted: 28-09-2022

Corresponding author: Dr Hritu Singh

Conflict of interest: Nil

Abstract

Background: Chronic skin disease has a devastating effect on a person's physical and psychological well-being. The contribution of psychological disorders to the burden of skin disease has been poorly explored.

Aim: The aim of the study was to Evaluate the psychosocial burden of skin disease among community-dwelling adults in Madhya Pradesh.

Methods and Materials: This cross-sectional study included 1000 participants interviewed on their history of thirteen skin diseases. The Patient Health Questionnaire (PHQ-9), Lubben Social Network Scale-6 (LSNS-6), University of California Los Angeles (UCLA) Loneliness Scale, and European Quality of Life-5 Dimensions- 5 Level (EQ-5D-5L) were used as measures for depressive symptoms, social isolation, loneliness and quality of life respectively. Multiple linear regression analysis was used to examine the association of skin diseases with each of the four measured outcomes.

Results: Participants with skin diseases reported significantly higher PHQ-9 and UCLA Loneliness scale scores, and lower LSNS-6 and EQ-5D-5L scores when compared to their healthy counterparts. The presence of skin disease was positively associated with depressive symptoms ($B = 0.409$, $SE = 0.22$), and negatively associated with quality of life ($B = -0.441$, $SE = 0.01$). As disease severity was not evaluated in this study, we were unable to ascertain the associations between disease severity and measured outcomes

Conclusion: Participants with skin diseases were more likely to have depressive symptoms, social isolation, loneliness and lower quality of life. Unemployed, single and elderly patients were at higher risk of developing depressive symptoms. More emphasis should be placed on the psychosocial aspect of care to reduce the burden of skin disease. Some considerations include monitoring patients for mood-related changes and implementing early psychosocial interventions

Keywords: Psychosocial Impact, Skin Diseases, Mental Health

This is an Open Access article that uses a fund-ing model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative

(<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

Introduction

The fourth most common source of non-deadly disease burden is skin disease, which makes up 1.79% of the worldwide disease burden. Its economic effects are widely known; in the United States of America, the cost of treating skin illnesses exceeds \$75 billion. Dermatologists have explored for various strategies to improve patient care and lessen the impact of skin disease, but the psychosocial component of management is still generally disregarded. Regardless of the fact that research has indicated that stress can make skin conditions worse this is the case [1,2]. The absence of opportunity for patients to voice their psychological needs has also been mentioned by patients themselves. Dermatological disease participants, particularly those who were separated or widowed, were much more inclined to be single. According to studies, being single makes you more likely to experience depression [3,4].

According to the supportive social model of marriage, one's spouse gives not just emotional support but also financial and physical support, leading to the hypothesis that marriage has a beneficial effect on mental health. According to a study conducted in the United States of America, elderly atopic dermatitis was linked to increased frequency of separation and divorce and it was hypothesised that the adverse behavioral effects of atopic dermatitis, including tiredness, anxiousness, depressed mood, and sleep problems, may be to blame. Some people may use unhealthy coping strategies, such as drinking alcohol, to deal with depression as well as loneliness [5,6].

Alcohol abuse is more prevalent among individuals with skin conditions than it is among healthy individuals. It was also observed in a study done in the UK, where it

was discovered that alcohol misuse disorders affected 30.6% of the study participants with psoriasis relative to 14.3 percent of the control group. Alcohol abuse increases the symptoms of depressive mood disorders and reduces the efficacy of certain systemic medications taken to treat skin diseases [7,8]. It's critical to first comprehend the psychosocial effects of skin disease in order to improve patient care. Even though the psychological costs of skin conditions are frequently discussed in Western populations, Asian populations have rarely had their consequences researched. Understanding of evidence is crucial in prevalence and incidence assessment and resource allocation because geographic and ethnic variance in cultural practises and resilience can increase the psychological impact of skin disease [9]. Therefore, in order to raise awareness about the significance of comprehensive management, we seek to study the psychological impact of dermatological diseases among a general population in Madhya Pradesh, India.

Methods and Materials

Study design and participants

One thousand individuals were interviewed for this cross-sectional study regarding their experience of thirteen skin illnesses. This longitudinal health study examined the wellbeing of an adult population living in a community. The following were the eligibility requirements: (1) Permanent residents of Madhya Pradesh who are above the age of 21, (2) have lived in the chosen home for at least six months, and (3) are capable of providing thoughtful responses to the survey questions. Data was gathered by face-to-face interviews conducted by a surveyor after receiving written informed consent. By specifically posing the question,

"Have you previously had any of the associated skin illnesses [a list of dermatological ailments]?" to the participants, the medical records of diseases of the skin were ascertained.

Instruments and measurements

Depression, social isolation, loneliness, and health-related quality of life were the outcomes assessed in this study (HRQOL).

Depressive symptoms

The nine-item Patient Health Questionnaire (PHQ-9), a widely accepted and well-validated tool for measuring depression, was used to evaluate depressive symptoms. The total depressive symptom score for the PHQ-9's nine items ranges from 0 to 27, with 0 meaning not at all, 1 meaning a few days, 2 meaning more than half the days, and 3 meaning almost every day. Each PHQ-9 item is scored on a four-point scale. In this investigation, the scale showed strong internal consistency reliability (Cronbach's alpha = 0.77).

Social isolation

The Lubben Social Network Scale-6 was utilised to measure social isolation (LSNS-6). The LSNS-6 gauges a participant's social network's size, closeness, and frequency of contacts in relation to how much assistance they feel they receive from family and friends. Each item is given a score between 0 and 5, adding up to a total score between 0 and 30. Lower values indicate greater isolation. In this investigation, the LSNS-6 showed strong internal consistency reliability with Cronbach's alpha = 0.80.

Loneliness

The three-item University of California Los Angeles (UCLA) Loneliness Scale was used to measure loneliness. The three questions are: "How often do you feel lonely?" "How often do you feel left out?" and "How often do you feel isolated from others?" Each has a three-point scale (1 being hardly ever, 2

being occasionally, and 3 being frequently). Higher scores indicate greater degrees of loneliness. The scores for each question were totaled up to give a score ranging from 3 to 9. With a Cronbach's alpha of 0.88, the UCLA Loneliness Scale's internal consistency in this study was good.

Health-related quality of life

Utilizing the EQ-5D descriptive system of the European Quality of Life-5 Dimensions-5 Level, HRQOL was evaluated (EQ-5D-5L). The five elements of the descriptive system are mobility, self-care, regular activities, pain or discomfort, and anxiety or depression. There are five possible responses that each participant can select from: no problems, minor difficulties, moderate difficulties, severe difficulties, or extreme difficulties. This choice reflects the level chosen for that particular component through a 1-digit number. The five components' numbers are then added together to create a five-digit figure that represents the patient's overall health. In this investigation, the scale showed strong internal consistency reliability (Cronbach's alpha = 0.78).

Statistical Analysis

The statistical analysis was performed using SPSS version 21. To evaluate group differences in sociodemographic traits, the diagnosis of specific skin diseases, the percentage of chronic diseases, and the results of various depression issues, social isolation issues, loneliness issues, and HRQOL—*independent-samples t-tests*, *Chi-square tests*, or *ANOVA statistical tests* were used. Multiple linear regression was employed to evaluate the relationship between the four outcomes that were evaluated and skin conditions.

Results

Eczema was the most prevalent skin condition among our subjects (9.9%), followed with bacterial and fungal infections

of skin with overall frequency of 8.1% and 4.1%, respectively). Table 1 lists the different skin conditions' distributions by age and gender. Psoriasis infections and fungal skin infections were more common in men than in women. In contrast to older persons (aged 75 years old), younger adults who were 22–39 years old were found to have higher frequency of acne vulgaris and an increased proportion of bacterial infections. 17.9% reported pruritus but no underlying skin disease was found to be present.

The mean±SD values for PHQ-9 in study participants having no history of skin diseases was 0.7±0.9 while mean±SD values for PHQ-9 in study participants having history of skin diseases was 2.1±1.2. The findings were significant statistically. (p=0.001). The mean±SD values for LSNS-6 in study participants having no history of skin diseases was 18.7±6.0 while mean±SD values for LSNS-6 in study participants having history of skin diseases was 16.1 ±

7.5. The findings were significant statistically. (p=0.012).

The mean±SD values for UCLA Loneliness scale in study participants having no history of skin diseases was 3.7±0.4 while mean±SD values for UCLA Loneliness scale in study participants having history of skin diseases was 4.1±0.2. The findings were significant statistically. (p=0.003). The mean±SD values for EQ-5D-5L in study participants having no history of skin diseases was 1.1±0.3 while mean±SD values for EQ-5D-5L in study participants having history of skin diseases was 0.92±0.9. The findings were significant statistically. (p=0.001). (Table 2).

The presence of skin disease was positively associated with depressive symptoms (B = 0.409, SE = 0.22), and negatively associated with quality of life (B = -0.441, SE = 0.01). As disease severity was not evaluated in this study, we were unable to ascertain the associations between disease severity and measured outcomes. (Table 3).

Table 1: Distribution of individual skin diseases by gender and age group(%).

Skin disease	All	Gender distribution			Age group distribution (years).				
		Men	Women	p-value	22-39	40-59	60-74	≥75	p-value
Eczema (%)	9.9	9.3	10.1	0.301	13.6	9.2	7.5	10.1	0.036
Acne(%)	4.0	4.9	3.9	0.414	8.6	3.8	2.8	0.6	< 0.001
Psoriasis(%)	2.6	3.2	0.9	0.021	0.7	3.6	0.7	2.7	0.026
Vitiligo (%)	0.6	0.6	0.6	0.109	0.4	0.3	2	0.6	0.443
Viral warts (%)	1.4	1.1	1.7	0.328	1.4	1.1	1.4	2.1	0.873
Scabies (%)	0.5	0.6	0.5	0.872	0.7	0.5	0.3	0.6	0.993
Fungal skin infections (%)	4.1	7.2	2.1	< 0.001	4.9	4.7	3.1	6.4	0.511
Chronic urticaria (%)	2.2	0.9	2.4	0.419	1.7	2.2	2	2.2	0.881
Bacterial skin infections (%)	8.1	10.2	7.6	0.072	5.7	7.7	9.7	14.9	0.002
Chronic ulcers (%)	2.7	3.1	2.1	0.111	1.1	0.6	4.4	3.2	0.002
Skin cancer	0.4	0.4	0.3	0.804	-	0.3	-	1.8	0.001
Alopecia areata	0.2	0.4	0.2	0.972	0.4	-	-	0.6	0.341
Unspecific symptom of pruritus	18.1	18.2	18.1	0.871	17.6	22.4	15.2	19.2	0.047

Table 2: Comparison of the mean±SD scores for the PHQ-9, LSNS-6, UCLA loneliness scale, and EQ-5D-5L index between participants who had and did not have any of the listed skin conditions.

	History of any skin disease		p-value
	No	Yes	
PHQ-9 (mean ± SD)	0.7 ± 0.9	2.1 ± 1.2	0.001
LSNS-6 (mean ± SD)	18.7 ± 6.0	16.1 ± 7.5	0.012
UCLA Loneliness scale(mean ± SD)	3.7 ± 0.4	4.1 ± 0.2	0.003
EQ-5D-5L (mean ± SD)	1.1 ± 0.3	0.92 ± 0.9	0.001

Table 3: Utilising multiple linear regressions, correlations between psychological, social well-being, and quality of life and history of any listed skin illness.

	Depressive Symptoms		Social Engagement		Loneliness		Quality of Life	
	B	SE	B	SE	B	SE	B	SE
History of any skin disease mentioned	0.409**	0.225	-0.515	0.458	0.217	0.066	-0.044**	0.006
Gender details	0.260	0.212	0.591	0.419	-0.082*	0.061	-0.021*	0.003
Widowed / Divorced status	0.002	0.281	0.591	0.627	-0.063*	0.093	0.002	0.022
Unemployed condition	0.619**	0.242	-1.596**	0.511	0.362**	0.074	-0.007	0.009

*p < .05; **p < .01

Discussion

Dermatologists have investigated a number of approaches to enhance patient care and minimise the effects of skin disease, but the psychosocial aspect of management is still frequently ignored. Despite the fact that studies have shown stress to aggravate skin issues, this is the case. Patients have also brought up the fact that they are not given the chance to express their psychological requirements. Participants with dermatological diseases were substantially more likely to be single, especially those who were divorced or widowed [10].

To improve patient care, it is essential to first understand the psychosocial implications of skin disease. Asian people have rarely had the psychological costs of skin diseases examined, despite the fact that they are routinely acknowledged in Western populations. Because geographic and ethnic differences in cultural practises and

resilience might exacerbate the psychological effect of skin disease, understanding the evidence is essential in prevalence and incidence assessment and resource allocation. We therefore aim to investigate the psychological effects of dermatological illnesses among a general population in order to raise awareness about the importance of comprehensive therapy [11-13].

In this study eczema was found out to be the most prevalent skin condition, followed with bacterial and fungal infections of skin with. Psoriasis infections and fungal skin infections were more common in men than in women. The findings were similar to the studies carried out by Abdin E *et al* [9], van Os-Medendorp H *et al* [10], Hultin H *et al* [11].

In contrast to older persons aged persons, younger adults were found to have higher

frequency of acne vulgaris and an increased proportion of bacterial infections. 17.9% reported pruritus but no underlying skin disease was found to be present. The observations made by Hay RJ *et al* [5], Lubben J *et al* [6] were in accordance with the observations of present study.

Studies by Hua T *et al* [14], Bulloch AGM *et al* [13], show that having a single status increases your risk of developing depressed. The supporting social model of marriage postulates that marriage has a positive impact on mental health because spouses provide not just emotional support but also physical, financial, and emotional assistance. It was hypothesised that the negative behavioural symptoms of atopic dermatitis, such as fatigue, anxiety, sad mood, and sleep issues, may be to blame for the association between geriatric atopic dermatitis and a higher prevalence of divorce and separation. Some people may turn to unhealthy coping mechanisms, such as binge drinking, to deal with loneliness and sadness [12,13].

It was observed that patients with skin diseases reported significantly greater loneliness when compared to their healthy counterparts. The presence of skin disease was positively associated with depressive symptoms, and negatively associated with quality of life. DiMatteo MR *et al* [15,16] in their systematic review observed the results similar to the findings of present study. D'Alton P *et al* [17] conducted research involving patients with psoriasis and found similar results.

As disease severity was not evaluated in this study, we were unable to ascertain the associations between disease severity and measured outcomes. Alcohol abuse is more common in those with skin conditions than in those who are healthy. Alcohol misuse disorders were found to affect 30.6% of study participants with psoriasis compared to 14.3% of the control group in a UK study by Boden JM *et al* [18], which confirmed the

observation. Abuse of alcohol worsens the signs and symptoms of depressive mood disorders and decreases the effectiveness of some systemic drugs used to treat skin conditions [14,15].

Conclusion

Participants with skin diseases were more likely to have depressive symptoms, social isolation, loneliness and lower quality of life. Unemployed, single and elderly patients were at higher risk of developing depressive symptoms. More emphasis should be placed on the psychosocial aspect of care to reduce the burden of skin disease. Some considerations include monitoring patients for mood-related changes and implementing early psychosocial interventions

References

1. Seth D, Cheldize K, Brown D, Freeman EF. Global Burden of Skin Disease: Inequities and Innovations. *Curr Dermatol Rep.* 2017;6(3):204–210.
2. Foggin E, Cuddy L, Young H. Psychosocial morbidity in skin disease. *Br J Hosp Med (Lond).* 2017; 78(6): C82–C86.
3. Lim DS, Bewley A, Oon HH. Psychological Profile of Patients with Psoriasis. *Ann Acad Med Singapore.* 2018; 47(12):516–522.
4. Ge L, Yap CW, Ong R, Heng BH. Social isolation, loneliness and their relationships with depressive symptoms: A population-based study. *PLoS One.* 2017; 12(8):e0182145
5. Hay RJ, Johns NE, Williams HC, et al. The global burden of skin disease in 2010: an analysis of the prevalence and impact of skin conditions. *J Invest Dermatol* 2014;134(6):1527–1534.
6. Lubben J, Blozik E, Gillmann G, et al. Performance of an abbreviated version of the Lubben Social Network Scale among three European community-dwelling older adult populations. *The Gerontologist* 2006; 46: 503–513.

7. Hughes ME, Waite LJ, Hawkley LC, Cacioppo JT. A short scale for measuring loneliness in large surveys. *Res Aging* 2004; 26: 655–672.
8. Herdman M, Gudex C, Lloyd A, et al. Development and preliminary testing of the new five-level version of EQ-5D (EQ-5D-5L). *Qual Life Res.* 2011; 20(10): 1727–1736.
9. Abdin E, Subramaniam M, Vaingankar JA, et al. Population norms for the EQ-5D index scores using Singapore preference weights. *Qual Life Res.* 2015; 24(6): 1545–1553.
10. van Os-Medendorp H, Appelman-Noordermeer S, Bruijnzeel-Koomen C, de Bruin-Weller M. Sick Leave and Factors Influencing Sick Leave in Adult Patients with Atopic Dermatitis: A Cross-Sectional Study. *J Clin Med* 2015; 4(4): 535–547.
11. Hultin H, Lindholm C, Malfert M, Möller J. Short-term sick leave and future risk of sickness absence and unemployment—the impact of health status. *BMC Public Health.* 2012; 12:861.
12. Dijkstra-Kersten SM, Biesheuvel-Leliefeld KE, van der Wouden JC, et al. Associations of financial strain and income with depressive and anxiety disorders. *J Epidemiol Community Health.* 2015;69(7):660–665.
13. Bulloch AGM, Williams JVA, Lavorato DH, Patten SB. The depression and marital status relationship is modified by both age and gender. *J Affect Disord.* 2017; 223:65–68.
14. Hua T, Silverberg JI. Atopic dermatitis in US adults: Epidemiology, association with marital status, and atopy. *Ann Allergy Asthma Immunol.* 2018; 121(5): 622–624.
15. Al-Jefri K, Newbury-Birch D, Muirhead CR, et al. High prevalence of alcohol use disorders in patients with inflammatory skin diseases. *Br J Dermatol.* 2017; 177: 837–844.
16. DiMatteo MR, Lepper HS, Croghan TW. Depression is a risk factor for noncompliance with medical treatment: meta-analysis of the effects of anxiety and depression on patient adherence. *Arch Intern Med* 2000; 160(14): 2101–2107.
17. D’Alton P, Kinsella L, Walsh O, et al. Mindfulness-Based Interventions for Psoriasis: a Randomized Controlled Trial. *Mindfulness* 2019; 10: 288–300
18. Boden JM, Fergusson DM. Alcohol and depression. *Addiction* 2011; 106(5):906–914.