



COMPARATIVE STUDY OF PSYCHIATRIC MORBIDITIES AND QUALITY OF LIFE IN PATIENTS OF ACNE AND HAIR LOSS DISORDER

Dermatology

Dr. Deepak Sharma*	Assistant Professor, Department of Dermatology, Venereology & Leprosy, G.R. Medical College & J.A. Hospital, Gwalior. *Corresponding Author
Dr. Priyanka Sharma	Associate Professor, Department of Psychiatry, G.R. Medical College & J.A. Hospital, Gwalior.
Dr. Anubhav Garg	Professor & Head, Department of Dermatology, Venereology & Leprosy, G.R. Medical College & J.A. Hospital, Gwalior.
Dr. Atul Agrawal	Professor & Head, Department of Psychiatry, G.R. Medical College & J.A. Hospital, Gwalior.

ABSTRACT

Background: Acne and hair loss are dermatological disorders that affect quality of life and psychosocial well-being. **Method:** In this cross-sectional analytical study, a total of 120 male patients (aged ≥ 18 years) – 60 patients each with Acne and Hair Loss disorder were enrolled. Demographic data and history of illness was noted. Acne grading and hair loss staging was done. Psychiatric morbidity was assessed using ICD-10 checklist. WHO-BREF Quality of life assessment was done. Chi-square test and Independent samples 't'-test were used to compare the data. **Results:** Mean age of acne patients (30.83 ± 7.72 years) was significantly lower as compared to that of hair loss patients (41.97 ± 11.80 years) ($p < 0.001$). Significantly higher proportion of hair loss patients had a positive family history (58.3%) as compared to acne patients (36.7%) ($p = 0.017$). No significant difference between two groups was observed with respect to duration of disease and other demographic characteristics. Prevalence of psychiatric morbidity was 35% in acne and 38.3% in hair loss patients ($p = 0.705$). No significant association of psychiatric morbidity was observed with acne grade and hair loss stage. A significant association of socioeconomic status was seen with psychiatric morbidity prevalence ($p = 0.032$). Hair loss patients had significantly lower QoL scores for Domain 1 as compared to acne patients ($p = 0.033$). Patients with psychiatric morbidity had poor quality of life as compared to those without psychiatric morbidity. **Conclusion:** Almost one third of acne and hair loss patients had psychiatric morbidity which seemed to be affected by socioeconomic factors and resulted in a poor quality of life.

KEYWORDS

Acne, hair loss, psychiatric morbidity, substance abuse, quality of life.

INTRODUCTION

Skin is the most visible organ, which determines to a great extent our appearance and plays a major function in social communication and sexual attractiveness.¹ Thus, the skin condition may have a considerable impact on the patient's wellbeing. The relationship between psychological factors and dermatological diseases has long been noticed e.g. stress can precipitate or exacerbate a skin disease through psychosomatic mechanisms.²

Significant psychiatric and psychological morbidity is present in at least 30% of dermatological patients. Diseases involved in such context include acne, psoriasis, vitiligo, atopic dermatitis, urticaria, and alopecia's. They are all commonly seen in primary care. However Acne and Alopecia seems to put major impact on quality of life and psychological health of the subjects due to easy visibility.^{3,4}

Consideration of psychological factors and recognition of patients who may be at high risk of developing such comorbidity are thus essential for effective management of these skin disorders.^{5,6}

Regardless of psychiatric morbidity, skin diseases can greatly affect patient's quality of life (QOL). Thus, patient oriented QOL measures are particularly beneficial in chronic diseases as they assess how the diseases affect a person socially, psychologically and physically.⁷ The aim of this study was to determine the psychiatric morbidity and QOL in patients with acne and hair fall disorder.

MATERIAL AND METHOD

A total 120 male patients (60 patients each presenting with Acne and Hair fall disorder respectively) visiting the Dermatology OPD at Gajra Raja Medical College, Gwalior, Madhya Pradesh for 3 months from February 2020 to April 2020 were studied. Approval for the study was obtained from Institutional Ethics Committee and informed consent was obtained from all the participating patients. After making clinical diagnosis and severity assessment, all the patients were sent to psychiatry OPD for further evaluation. Patients with chronic debilitating diseases as cancer, liver, renal and cardiac diseases, hypertension, diabetes, pregnant or lactating women and patients receiving psychotropic drugs were excluded from the study.

Demographic information like, age, education, occupation and income

was obtained and socioeconomic status of the patients was assessed using Kuppuswamy's revised socio-economic status (SES) scale⁸ was used for grading of socio-economic class [modified as High-Upper (I), Medium-Upper Middle (II), Lower Middle (III), Low-Upper Lower (IV), and Lower (V)] and educational status (ES) (modified as High-Profession/Honors and Graduate/Postgraduate, Medium-Intermediate/Post high school and High school, Low-Middle school, Primary school, and Illiterate).

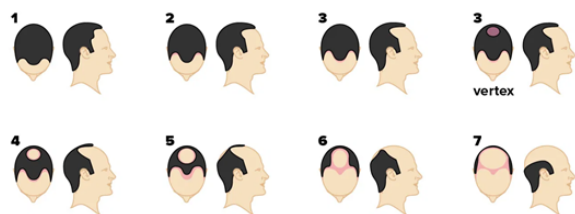
Thorough general and dermatological examination was performed, family history of related illness was also explored. Subsequently, the grading/staging of illness was done as per following criteria:

Staging of Hair Fall

Hair fall was classified based on Norwood Scale⁹. The Norwood scale (or Hamilton-Norwood scale) is the leading classification system used to measure the extent of male pattern baldness. The Norwood scale has seven stages. Each stage measures the severity and pattern of hair loss.

- **Stage 1.** No significant hair loss or recession of the hairline.
- **Stage 2.** There is a slight recession of the hairline around the temples. This is also known as an adult or mature hairline.
- **Stage 3.** The first signs of clinically significant balding appear. The hairline becomes deeply recessed at both temples, resembling an M, U, or V shape. The recessed spots are completely bare or sparsely covered in hair.
- **Stage 3 vertex.** The hairline stays at stage 2, but there is significant hair loss on the top of the scalp (the vertex).
- **Stage 4.** The hairline recession is more severe than in stage 2, and there is sparse hair or no hair on the vertex. The two areas of hair loss are separated by a band of hair that connects to the hair remaining on the sides of the scalp.
- **Stage 5.** The two areas of hair loss are larger than in stage 4. They are still separated, but the band of hair between them is narrower and sparser.
- **Stage 6.** The balding areas at the temples join with the balding area at the vertex. The band of hair across the top of the head is gone or sparse.
- **Stage 7.** The most severe stage of hair loss, only a band of hair going around the sides of the head remains. This hair is usually not dense and may be fine.

- Norwood class A.** The class A variation of the Norwood scale is a slightly different and less common progression of hair loss. The main differences are that the hairline recedes back uniformly, without leaving an island of hair in the middle, and there is no bald area at the vertex. Instead, the hairline progresses directly from front to back.



Acne grading method¹⁰

Acne vulgaris was graded by Indian authors, using a simple grading system, which classifies acne vulgaris into four grades as follows.

- Grade 1: Comedones, occasional papules.
- Grade 2: Papules, comedones, few pustules.
- Grade 3: Predominant pustules, nodules, abscesses.
- Grade 4: Mainly cysts, abscesses, widespread scarring.

All the acne patient were graded based on the above grading system.

After dermatological assessment was over, the patients were referred to psychiatric OPD. Quality of life was assessed using WHO QOL-BREF¹¹ and psychiatric co morbidities were assessed using ICD 10¹².

Statistical Analysis

Data was analyzed using Statistical Package for Social Sciences (SPSS) 21.0 version. Data has been shown as Numbers (frequency) and percentages (proportions) and Mean±standard deviation. Chi-square and Independent samples 't'-tests were used to compare the data. A 'p' value less than 0.05 was considered to be statistically significant.

RESULTS

Age of enrolled patients ranged from 18 to 60 years. Mean age of Acne patients was 30.83±7.72 years (range 18-48 years) while mean age of hair loss patients was 41.97±11.80 years (range 21-60 years)

(p<0.001). Proportion of those aged <30 years was higher in Acne patients (48.3%) as compared to that in hair loss patients (18.3%) (p<0.001). Among acne patients, mean duration of disease was 12.52±7.39 years, 36.7% had a positive family history, with dominance of those from upper middle and lower middle socioeconomic class (65%), majority were educated upto High school or intermediate (51.7%), maximum were clerks (26%) followed by those employed as plant and machine operators (13.3%) and unemployed (11.7%) patients. According to acne grading, maximum were Grade 2 (38.3%) followed by Grade 1 (28.3%), Grade 3 (26.7%) and Grade 4 (6.7%) respectively. On the other hand, among patients with hair loss, mean duration of illness was 14.32±10.40 years, a total of 35 (58.3%) had a positive family history, majority were from upper lower and lower middle socioeconomic class (58.3%), educated upto intermediate or above (56.7%), maximum were clerks (21.7%) followed by skilled agricultural (18.3%) and craft and related trade workers (13.3%). Maximum had hair loss stage 3 (26.7%) followed by stage 2 (25%), stage 1 (18.3%), stage 4 (15%), stage 5 (11.7%) and stage 6 (3.3%) respectively. None of the patients had stage 7 or A pattern hair loss. A statistically significant difference between two groups was observed for positive family history which was seen to be present in significantly higher proportion of patients with hair loss (p=0.017). Prevalence of psychiatric morbidity was 35% in acne group as compared to 38.3% in hair loss group. Statistically, there was no significant difference between two groups with respect to prevalence of psychiatric morbidity (p=0.705). Mean QoL scores for Domains 1, 2, 3 and 4 were 39.42±10.86, 40.92±12.54, 38.35±18.27 and 45.30±7.97 respectively in acne patients as compared to 44.22±13.34, 45.72±14.89, 42.05±18.23 and 46.47±11.75 respectively in hair loss patients. Though for all the domains mean scores were lower in hair loss patients as compared to that of acne patients yet the difference was significant statistically only for domain 1 (p=0.033) (Table 1).

In acne group, out of 21 cases with psychiatric morbidity, maximum (n=10) had substance abuse followed by psychotic disorder (n=5), behavioural disorder (n=3), affective disorder (n=2) and neurotic disorder (n=1) respectively. On the other hand in hair loss patients, maximum (n=8) were substance abusers followed by affective disorder and personality disorder (n=4 each), behavioural disorder and psychotic disorder (n=3 each) and neurotic disorder (n=1) respectively (Fig. 1).

Table 1: Demographic Profile and Characteristics of Study Populations

SN	Characteristic	Group I (Acne) (n=60)	Group II (Hair Loss) (n=60)	Statistical significance
1.	Age <30 years ≥30 years Mean Age±SD (Range)	29 (48.3%) 31 (51.7%) 30.83±7.72 (18-48)	11 (18.3%) 49 (81.7%) 41.97±11.80 (21-60)	$\chi^2=12.15$; p<0.001 $t=6.117$; p<0.001
2.	Mean duration of disease±SD (Range) in years	12.52±7.39 (2-28)	14.32±10.40 (1-32)	$t=1.093$; p=0.277
3.	Family history	22 (36.7%)	35 (58.3%)	$\chi^2=5.647$; p=0.017
4.	Socioeconomic status Upper Upper Middle Lower Middle Upper Lower Lower	8 (13.3%) 20 (33.3%) 13 (31.7%) 15 (25.0%) 4 (6.7%)	9 (15.0%) 12 (20.0%) 11 (18.3%) 24 (40.0%) 4 (6.7%)	$\chi^2=4.302$; p=0.367
5.	Education Illiterate Primary Middle High School Intermediate Graduate Professional or honors	2 (3.3%) 1 (1.7%) 7 (11.7%) 12 (20.0%) 19 (31.7%) 15 (25.0%) 4 (6.7%)	4 (6.7%) 3 (5.0%) 10 (16.7%) 9 (15.0%) 19 (31.7%) 11 (18.3%) 4 (6.7%)	$\chi^2=3.240$; p=0.778
6.	Occupation Unemployed Elementary occupation Plant & Machine Op. Craft & related trade Skilled agricultural Skilled labourers Clerks Technicians Professionals Senior Managers	7 (11.7%) 2 (3.3%) 8 (13.3%) 6 (10.0%) 6 (10.0%) 7 (11.7%) 15 (25.0%) 5 (8.3%) 3 (5.0%) 1 (1.7%)	3 (5.0%) 4 (6.7%) 5 (8.3%) 8 (13.3%) 11 (18.3%) 3 (5.0%) 13 (21.7%) 6 (10.0%) 4 (6.7%) 3 (5.0%)	$\chi^2=7.692$; p=0.565

7.	Acne Grade	17 (28.3%) 23 (38.3%) 16 (26.7%) 4 (6.7%)		
8.	Hair loss stage		11 (18.3%) 15 (25.0%) 16 (26.7%) 9 (15.0%) 7 (11.7%) 2 (3.3%) -	
9.	Psychiatric comorbidity	21 (35.0%)	23 (38.3%)	$\chi^2=-0.144$; $p=0.705$
10.	WHO-QoL (BREF)			
	Domain 1 (Physical)	60.58±10.86	55.78±13.34	$t=2.162$; $p=0.033$
	Domain 2 (Psychological)	59.08±12.54	54.28±14.89	$t=1.910$; $p=0.059$
	Domain 3 (Social)	61.65±18.27	57.95±18.23	$t=1.110$; $p=0.269$
	Domain 4 (Environmental)	54.70±7.97	53.53±11.75	$t=0.637$; $p=0.526$

Prevalence of psychiatric morbidity was 23.5%, 34.8%, 37.5% and 75% respectively among patients with Acne Grade 1, 2, 3 and 4, thus showing an incremental trend with increasing grade, however, this relationship was not significant statistically ($p=0.287$). Prevalence of psychiatric morbidity was 54.5%, 26.7%, 31.3%, 44.4%, 28.6% and 100% respectively among patients with stage 1, 2, 3, 4, 5 and 6 hair loss. Statistically, there was no significant association between hair loss stage and psychiatric morbidity ($p=0.309$) (Table 2).

Table 2: Association of Acne Grade and Hair Loss Stage with Psychiatric Comorbidity

(a) Acne Grade				
SN	Acne Grade	No. of patients	No. of patients with Psychiatric Comorbidity in the grade	% of patients with Psychiatric Comorbidity in the grade
1	1	17	4	23.5
2	2	23	8	34.8
3	3	16	6	37.5
4	4	4	3	75.0
$\chi^2=3.777$; $p=0.287$ (Kruskal-Wallis test)				
(b) Hair Loss stage				

SN	Hair Loss Stage	No. of patients	No. of patients with Psychiatric Comorbidity in the stage	% of patients with Psychiatric Comorbidity in the stage
1	1	11	6	54.5
2	2	15	4	26.7
3	3	16	5	31.3
4	4	9	4	44.4
5	5	7	2	28.6
6	6	2	2	100
$\chi^2=5.967$; $p=0.309$ (Kruskal-Wallis test)				

On evaluating the association of psychiatric morbidity in patients with acne and hair loss, no significant association of psychiatric morbidity was observed with age, duration of disease, family history, education and occupation. However, in the psychiatric morbidity group proportion of those from upper/upper middle socioeconomic class was significantly higher (50%) as compared to that of patients without psychiatric morbidity ($n=35.5\%$) ($p=0.032$). Patients with psychiatric morbidity had significantly higher mean QoL scores as compared to those without psychiatric morbidity for all the four domains ($p<0.05$) (Table 3).

Table 3: Association of Psychiatric morbidity with different sociodemographic factors (Overall) (n=120)

SN		Psychiatric morbidity (n=44)	No psychiatric morbidity (n=76)	Statistical significance
1.	Mean Age±SD (years)	36.77±12.12	36.18±11.03	$t=0.272$; $p=0.786$
2.	Mean duration of disease±SD (years)	13.70±9.51	13.25±8.79	$t=0.295$; $p=0.792$
3.	Family history	21 (47.7%)	36 (47.4%)	$\chi^2=0.01$; $p=0.970$
4.	Socioeconomic status			$\chi^2=10.584$; $p=0.032$
	Upper	11 (25.0%)	6 (7.9%)	
	Upper Middle	11 (25.0%)	21 (27.6%)	
	Lower Middle	8 (18.2%)	16 (21.1%)	
	Upper Lower	14 (31.8%)	25 (32.9%)	
	Lower	0 (0%)	8 (10.5%)	
5.	Education			$\chi^2=11.49$; $p=0.074$
	Illiterate	1 (2.3%)	5 (6.6%)	
	Primary	2 (4.5%)	2 (2.6%)	
	Middle	2 (4.5%)	15 (19.7%)	
	High School	8 (18.2%)	13 (17.1%)	
	Intermediate	16 (36.4%)	22 (28.9%)	
	Graduate	9 (20.5%)	17 (22.4%)	
	Professional or honors	4 (13.6%)	2 (2.6%)	
6.	Occupation			$\chi^2=7.977$; $p=0.536$
	Unemployed	5 (11.4%)	5 (6.6%)	
	Elementary occupation	3 (6.8%)	3 (6.8%)	
	Plant & Machine Op.	4 (9.1%)	9 (11.8%)	
	Craft & related trade	3 (6.8%)	11 (14.5%)	
	Skilled agricultural	7 (15.9%)	10 (13.2%)	
	Skilled labourers	1 (2.3%)	9 (11.8%)	
	Clerks	10 (22.7%)	18 (23.7%)	
	Technicians	6 (13.6%)	6 (6.8%)	
	Professionals	3 (6.8%)	3 (6.8%)	
	Senior Managers	2 (4.5%)	2 (4.5%)	
7.	Quality of life			
	Domain 1	51.82±13.13	61.87±10.27	$t=4.654$; $p<0.001$
	Domain 2	51.68±14.36	59.58±12.88	$t=3.102$; $p=0.002$

Domain 3	54.70±19.93	62.75±16.67	t=2.370; p=0.019
Domain 4	51.41±11.53	55.68±8.72	t=2.294; p=0.024

An assessment of quality of life of patients with and without psychiatric comorbidity in acne and hair loss patients independently, for both the disorders the mean QoL scores of patients with psychiatric comorbidity were lower as compared to those without psychiatric comorbidity for all the four domains. The difference was also found to be significant statistically for domain 1 in Acne patients and domains 1, 2 and 3 in hair loss patients (Table 4).

Table 4: Association between Psychiatric Comorbidity and Quality of Life

(a) Acne						
SN	Domain	Psychiatric comorbidity (n=21)		No Psychiatric comorbidity (n=39)		Statistical significance
		Mean	SD	Mean	SD	
1.	Domain 1	56.19	10.88	62.95	10.22	2.389 0.020
2.	Domain 2	57.38	11.80	60.00	12.97	0.769 0.445
3.	Domain 3	57.52	21.57	63.87	16.09	1.291 0.202
4.	Domain 4	52.24	8.47	56.03	7.46	1.789 0.079
(b) Hair Loss						
SN	Domain	Psychiatric comorbidity (n=23)		No Psychiatric comorbidity (n=37)		Statistical significance
		Mean	SD	Mean	SD	
1.	Domain 1	47.83	13.95	60.73	10.35	4.103 <0.001
2.	Domain 2	46.48	14.74	59.14	12.95	3.491 0.001
3.	Domain 3	52.13	18.40	61.57	17.40	1.998 0.050
4.	Domain 4	50.65	13.90	55.32	9.97	1.514 0.135

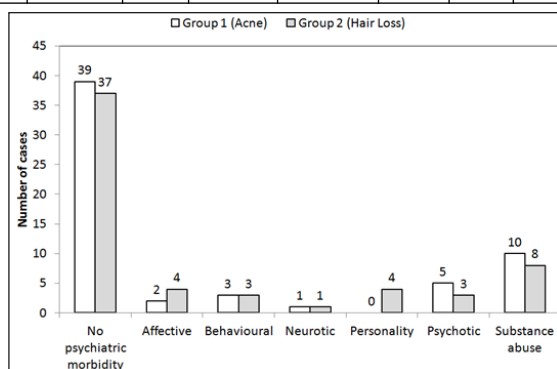


Fig. 1: Psychiatric morbidity and its type in acne and hair loss patients

DISCUSSION

In present study, prevalence of psychiatric comorbidity was seen to be 35% in acne patients and 38.3% in hair loss patients. There was no significant difference in prevalence of psychiatric comorbidity between two groups, however, patients with acne were relatively and significantly younger as compared to those of patients with hair loss while patients with hair loss had family history of illness in significantly higher proportion of patients as compared to that of acne patients. The findings thus suggest that acne patients are at almost equivalent risk of psychiatric morbidity even at a younger age as compared to that of hair loss patients.

Prevalence of psychiatric comorbidity in hair loss patients has been reported to range from 22% to 73.3%^{13,14} while prevalence of psychiatric comorbidity in acne patients has been reported to vary from 20% to 42.9%^{15,16,17} in different studies. A high variability in prevalence of psychiatric comorbidity in different studies might be owing to use of different tools for assessment of psychiatric morbidity. In present study, we used ICD-10 checklist which offers to identify different types of psychiatric morbidity. However, some studies assessed only anxiety and depression as the psychiatric disorders using specific scales to diagnose these disorders^{14,17}. In order to diagnose the exact burden of psychiatric morbidity exactly, it is essential that tools that could diagnose different types of psychiatric disorders should be used. Jain *et al.*¹⁵ in their study used multiple tools including GHQ-60 and MINI in order to assess the psychiatric illness burden. In another study, Batra¹⁶ also assessed psychiatric illness burden using clinical interview

methodology. We also recommend that the psychiatric burden assessment should be done using tools that could cover wide spectrum of psychiatric disorders while use of specific tools should be done if any specific psychiatric disorder is being focused.

As far as relatively younger age of acne patients as compared to hair loss patients is concerned, acne are known to affect at young age. Nearly 93% of acne patients are teenagers or young adults and only 7% of acne persist into mid 30s or 40s¹⁸. On the other hand, hair loss are more frequent in mature adults¹⁹. However, it was interesting to see that the burden of psychiatric illnesses in two groups was similar and did not show a significant difference between two groups. Thus showing that it is not the age but the dermatological disorder that influenced the psychosocial interactions of the affected patients resulting in psychiatric illness.

In present study, we did not find a significant association of psychiatric comorbidity prevalence with the grade of acne and stage of hair loss, though the trends indicated a higher prevalence of psychiatric morbidity with increasing grade of acne or stage of hair loss. These findings indicate that the psychiatric comorbidity was not dependent only on the severity of disease but had an association with other psychosocial and demographic factors too. In present study, we found that the psychiatric comorbidity more commonly affected patients from upper/upper middle socioeconomic classes. It seemed that the desire to have a perfect skin and hair increased substantially with increase in socioeconomic status. Contrary to findings of present study, where no significant association between acne grade and psychiatric morbidity status was observed, Jain *et al.*¹⁵ and Saker *et al.*¹⁷ observed a significant correlation between severity of acne lesions and anxiety/depression. One of the reasons for this could be the fact that the present study included only male patients. The gender related impact of dermatological diseases is well documented¹⁸, owing to gender related differences in social acceptability it might be assumed that the drivers of social acceptability and as such drivers of psychiatric morbidity might show a variation. In present study, we found that psychiatric morbidity was significantly associated with higher socioeconomic status. It seemed that the desire to have a social acceptability among male patients with acne or hair loss was related with socioeconomic up gradation and failure to do so might have resulted in psychiatric morbidity.

In present study, we found a high level of quality of life impairment in both the groups. A significant difference between two groups was observed for physical domain with significantly lower scores in hair loss as compared to acne patients. In a previous study, Karia *et al.*¹³ showed the quality of life scores of acne patients to be higher than that of psoriasis patients. Saker *et al.*¹⁷ too in their study showed only mild effect on quality of life of acne patients. As such the effect of acne on quality of life is not much profound. On the other hand, the quality of life of hair loss patients is much worsened so much so that almost one-tenth of these patients often feel it was better if they were dead¹⁹.

In present study, we found a significant association between psychiatric morbidity and all the four domains of quality of life. A mutual effect of quality of life and psychiatric morbidity and vice versa can be well understood. A correlation between psychiatric morbidity and quality of life was also documented by other workers too^{13,20}.

The present study had certain limitations, such as the inability to match the age profile of patients in two study groups and absence of a matched control group. In the absence of this it might be difficult to predict whether the psychiatric morbidity and quality of life of patients in two study groups is dependent on life-stage of the patients or is dependent on their disease profile. Moreover, the study was limited to male gender only. In view of these limitations further studies with inclusion of a control group with representation of healthy individuals without skin disease with age matching to both the age groups are recommended. Addition of subjects from both the genders will also help to evaluate the psychosocial impact of these disorders in gender context too.

CONCLUSION

The findings of the present study thus suggest that there is a high prevalence of psychiatric morbidity and impaired quality of life in patients with acne and hair loss disorders. However, owing to

differences in age profile and absence of a control group their comparative assessment does not seem to be much justified.

REFERENCES

- Porter J. The psychological effects of vitiligo: response to impaired appearance. In: Vitiligo a Monograph on the Basic and Clinical Science. Hann Sk, Nordlund JJ, eds Blackwell Science, Oxford, 97-100, 2000.
- Picardi A and Abeni D, Stressful life events and skin diseases: disentangling evidence from myth, *Psychother Psychosom.* 70: 118-136, 2001.
- Medansky RS and Handler RM, Dermatopsychosomatics: classification, physiology, and therapeutic approaches, *J Am Acad Dermatol.* 5: 125-36, 1981.
- Saleh HM, Samar Abdallah M. Salem, Rania S ElSheshetawy, Afaf M. Abd El-Samei. Comparative Study of Psychiatric Morbidity and Quality of Life in Psoriasis, Vitiligo and Alopecia Areata. *Egyptian Dermatology Online Journal.* 2008; 4 (1): 1-9.
- Mease J and Menter M, Quality of life issues in psoriasis and psoriatic arthritis: Outcome measures and therapies from a dermatological perspective. *J Am Acad Dermatol.* 54: 685-704, 2006.
- Gupta MA and Gupta AK, Psychodermatology: an update, *J Am Acad Dermatol.* 34: 1030-46, 1996.
- Finlay AY and Ryan TJ, Disability and handicap in dermatology, *Int J Dermatol.* 35: 305-311, 1996.
- Saleem MS. Modified Kuppuswamy Socioeconomic Scale updated for the year 2020. *Ind. J. Forensic Community Med.* 2020; 7(1): 1-3.
- Norwood OT. Male pattern baldness: Classification and incidence. *South Med J.* 1975;68:1359-65.
- Tutakne MA, Chari KVR. Acne, rosacea and perioral dermatitis. In: Valia RG, Valia AR, editors. *IADVL Textbook and atlas of dermatology*, 2nd ed., Mumbai: Bhalani Publishing House; 2003. p. 689-71.
- The World Health Organization Quality of Life (WHOQOL)-BREF. World Health Organization, 2004.
- Janca A, Ustun TB, van Drimmelen J, Dittman V, Isaac M. ICD-10 Symptom Checklist for Mental Disorders. Version 1.1. Division of Mental Health, World Health Organization, Geneva, 1994.
- Karia SB, De Sousa A, Shah N, Sonavane S, Bharati A. Psychiatric morbidity and quality of life in skin diseases: A comparison of alopecia areata and psoriasis. *Ind Psychiatry J.* 2015;24(2):125-128.
- Marahatta S, Agarwal S, Adhikari BR. Psychological Impact of Alopecia Areata. *Dermatol. Res. Prac.* 2020; 2020: 8879343.
- Jain N, Bulkharia A, Khess CRJ, Munda SK. Psychiatric morbidity among patients with psoriasis and acne: A comparative study. *Journal of Pakistan Association of Dermatologists* 2016; 26(4): 337-346.
- Batra M. Assessment of Psychiatric Illness in Severe Acne Patients: An Institutional Based Study. *Int J Med Res Prof.* 2019 May; 5(3):290-93.
- Saker AA, El-Moez KA, Mohammad RW, Ismail NA. Evaluation of psychiatric morbidity and quality of life in patients with acne vulgaris. *Egypt J Psychiatry* 2015;36:144-9.
- Goulden V, Cunliffe WJ. Post adolescent acne – a review of the clinical features. *Br J Dermatol* 1997;136:66-70.
- Gupta MA and Gupta AK, Depression and Suicidal ideation in dermatology patients with acne, alopecia areata, atopic dermatitis and psoriasis, *Br J Dermatol.* 1998; 139(5): 846-850.
- Saleh HM, Salem SAM, El-Sheshetawy RS, Abd El-Samei A. Comparative study of psychiatric morbidity and quality of life in Psoriasis, Vitiligo and Alopecia Areata. *Egyptian Dermatology Online Journal* 2008; 4(1): 1-18.