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Research Article

To study the impact of cosmetically disfiguring skin disorders on quality of life

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Abstract: A Hospital based, questionnaire based cross-sectional study was conducted on patients attending dermatology O.P.D. of Adesh Institute of Medical Sciences and Research, Punjab, India. The objective of the study was to know about the impact of cosmetically disfiguring skin disorders on quality of life and to know about any correlation if exists, between disease severity and its impact on quality of life. A total of 162 patients with clinical diagnosis of Acne Vulgaris, Alopecia Areata, Psoriasis, Melasma and Vitiligo were taken as subjects after taking their informed consent. The data obtained was coded and entered in Microsoft Excel Spreadsheet and analyzed. The diseases were found to have an impact on the quality of life of the patients, with Acne Vulgaris and Vitiligo affecting the lives comparatively more than Alopecia Areata, Psoriasis, and Melasma.
Keywords: Cosmetic Disfigurement, DLQI, Acne Vulgaris, Alopecia Areata, Psoriasis, Vitiligo, Melasma.

INTRODUCTION

The skin is the body's largest organ. Skin disorders such as acne, alopecia areata, atopic dermatitis, psoriasis or vitiligo can lead to scarring, widespread plaques, generalized itching, discoloration, hence causing cosmetic disfigurement. This affects the patient's life in many aspects. The patients feel distressed and stigmatized by their condition which can cause depression or anxiety, induce feelings of humiliation, shame or rejection; resulting in poor body image, lower the self-esteem and in fact lower the quality of life in general. One study, for instance, found that patients with severe psoriasis and acne were twice as likely to be suicidal as general medical patients [1].

WHO defines Quality of Life as the "individual's perception of their position in the context of culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns". [2] For instance, patients with psoriasis report physical discomfort, stigmatization, loss of productivity, and low self-esteem, as well as limitations in daily activities, social contacts, and work.[3] Many patients with vitiligo experience psychosocial distress and social stigmatization even though it is often considered a "cosmetic skin disorder" in the Western culture.[4-6]

The Dermatology Life Quality Index or DLQI, developed by Professor A Y Finlay and colleagues in 1994, was the first dermatology-specific Quality of Life instrument. Skin diseases can have a major impact on patients' lives in terms of psychological well-being, social functioning and everyday activities. Assessment of patients' quality of life has become an important endpoint in clinical trials in addition to the traditional clinical outcomes. [7]

The DLQI has 6 domains and grades Quality of life by giving a score to each domain. The domains assessed were: a) physical symptoms and feelings (questions 1 and 2), b) daily activities (questions 3 and 4), c) leisure (questions 5 and 6), d) work/school (question 7), e) personal relationships (questions 8 and 9), and f) treatment (question 10). The answers to which have to be given according to the symptoms experienced during the past week. Each question is scored as 'very much' (score 3), 'a lot' (score 2), 'a little' (score 1), 'not at all' (score 0), 'not relevant' (score 0), 'question unanswered' (score 0). The DLQI is calculated by summing the score of each question resulting in a maximum of 30 and a minimum of 0. The higher the score, the more quality of life is impaired. Interpretation of dlqi score:

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
21-30 = extremely large effect on patient's life

In Indian scenario, there is paucity of published data on this topic and rather High number of patients suffering from it.

MATERIALS AND METHODS

This was a hospital-based, cross-sectional, questionnaire-based study done on 162 consenting individuals, who attended the Dermatology outpatient department of a tertiary care centre in Bathinda region of Punjab, India. Patients with clinical diagnosis of acne, alopecia areata, atopic dermatitis, psoriasis and vitiligo were taken as subjects (n=162). Informed consent was taken from all the participants after explaining them the nature of study and they were also verbally reassured about keeping their personal and other identity details confidential. Patients were asked about their problem to assess disease severity clinically and to assess the Quality of Life they were given the following questionnaire.

DLQI-dermatologic quality of life index (in English / in native language- Hindi or Punjabi). A record of each patients Name, Age, Sex, Marital Status has also been maintained. The research was conducted in 2014-2015. Disease severity was assessed clinically and graded as Mild, Mild to Moderate, Moderate and severe.

Statistical analysis:

The data obtained was coded and entered in Microsoft excel spreadsheet. The categorical data was expressed as tables, bar graphs, percentages and analyzed. The continuous variables were summarized as mean and standard deviation.

RESULTS

Out of a total of 162 patients, majority belongs to the age group: 21-25 years, Male: Female ratio was 1.025:1 and the demographic details of subjects are summarized in Figure-1. Chi square tests were applied taking age groups and disease groups as variables as shown in Table-1 and elaborated in figure-2.

Out of these 162 patients, 32(19.75%) were of Acne Vulgaris, 33(20.37%) were of Alopecia areata, 30(18.5%) were of Melasma, 33(20.37%) were of psoriasis and 34(20.98%) were of vitiligo. Mean DLQI scores were calculated for each disease group as shown in Table-2. On applying ANOVA test on the data the interaction between the groups was found to be highly significant (<0.001). Although quality of life is affected by all these cosmetically disfiguring disorders but the impact is not same; as elaborated in Table-3, showing interaction between different diseases and their impact on quality of life compared through the DLQI scores.

Also, The DLQI was analyzed in detail under six headings i.e. Symptoms and Feelings, Daily Activities, Leisure, Work and School, Personal Relationships and Treatment. Acne Vulgaris and Vitiligo were found to affect the patients Symptoms and feelings, Daily activities , Leisure, and Treatment significantly more as compared to Alopecia Areata, Psoriasis and Melasma (p value<0.001) whereas, Personal Relationships are affected by all these conditions without significant variation.

Male: Female ratio was 1.025:1. (n=162) Male =82 Female = 80. Both subgroups had quality of life hindered without any significant difference between them. Figure 6 shows mean DLQI scores in males and females of the chosen subgroups of diseases. Marital status also did not prove to be a determinant for the diseases in having an impact on quality of life significantly in our study rather both married and unmarried sections experienced deterioration in quality of life as summarized in Fig-4.

Disease Severity in this study significantly determined how much a disease impairs quality of life where subjects with severe forms of disease had a higher DLQI score than those with milder forms of the same disease and this relation as studied by multiple POST HOC tests and was found to be highly significant (p value=0.00) as seen in figures Table-4 and Table-5.

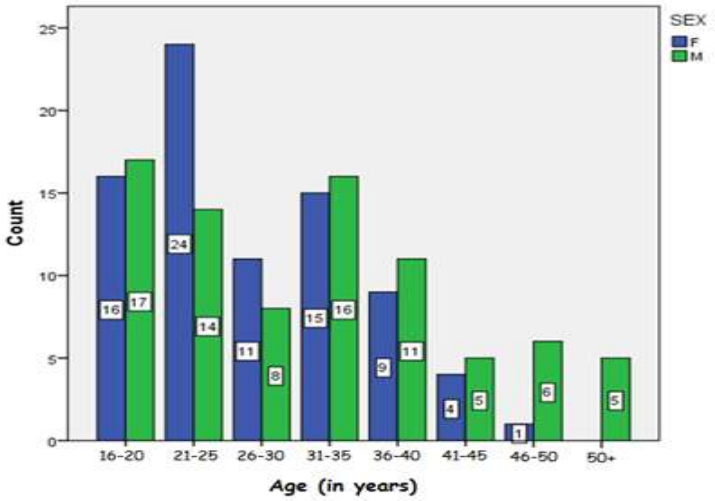

Fig-1: Demographic Details

Table-1: Chi square test depicting relation between age group and disease groups

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	85.494[a]	28	.000
Likelihood Ratio	92.490	28	.000
Linear-by-Linear Association	10.428	1	.001
N of Valid Cases	162		
a. 25 cells (62.5%) have expected count less than 5. The minimum expected count is .93.			

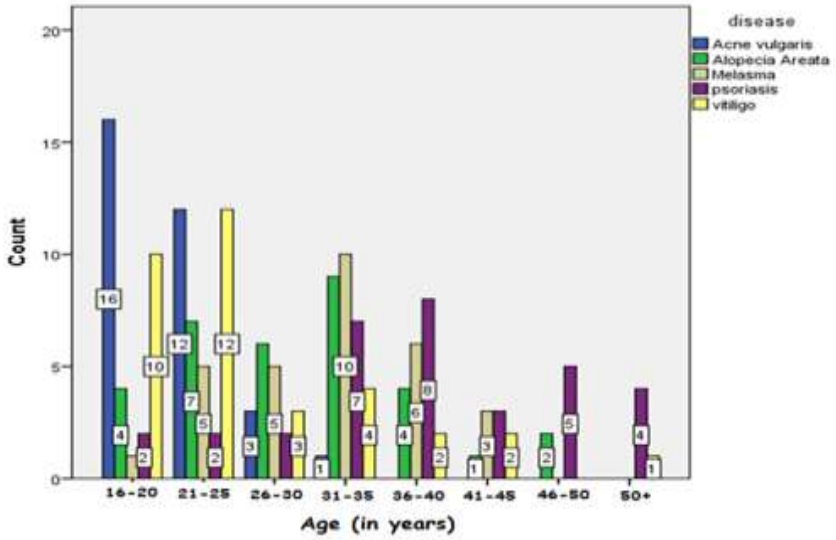

Fig-2: Depicting relation between age groups and disease groups in the form of a multiple bar graph

Table-2: Mean DLQI scores for each disease group

Diagnosis	N	Mean DLQI score	Standard. Deviation	Standard. Error
Acne vulgaris	32	8.53	3.360	.594
Alopecia areata	33	5.48	2.017	.351
Melasma	30	6.60	2.673	.488
Psoriasis	33	5.85	2.489	.433
Vitiligo	34	7.44	2.232	.383
Total	162	6.78	2.784	.219

*Mean difference is at the significance level 0.05

Table-3: Showing interaction between different diseases and their impact on quality of life compared through the DLQI scores. Multiple comparisons Post HOC tests

Dependent variable: dlqi score				
(i) disease	(j) disease	Mean difference (i-j)	Std. Error	Sig.
Acne vulgaris	Alopecia areata	3.046*	.642	.000
	Melasma	1.931*	.657	.031
	Psoriasis	2.683*	.642	.000
	Vitiligo	1.090	.637	.430
Alopecia areata	Acne vulgaris	-3.046*	.642	.000
	Melasma	-1.115	.652	.431
	Psoriasis	-.364	.637	.979
	Vitiligo	-1.956*	.632	.019
Melasma	Acne vulgaris	-1.931*	.657	.031
	Alopecia areata	1.115	.652	.431
	Psoriasis	.752	.652	.778
	Vitiligo	-.841	.648	.693
Psoriasis	Acne vulgaris	-2.683*	.642	.000
	Alopecia areata	.364	.637	.979
	Melasma	-.752	.652	.778
	Vitiligo	-1.593	.632	.091
Vitiligo	Acne vulgaris	-1.090	.637	.430
	Alopecia areata	1.956*	.632	.019
	Melasma	.841	.648	.693
	Psoriasis	1.593	.632	.091

*Mean difference is at the significance level 0.05

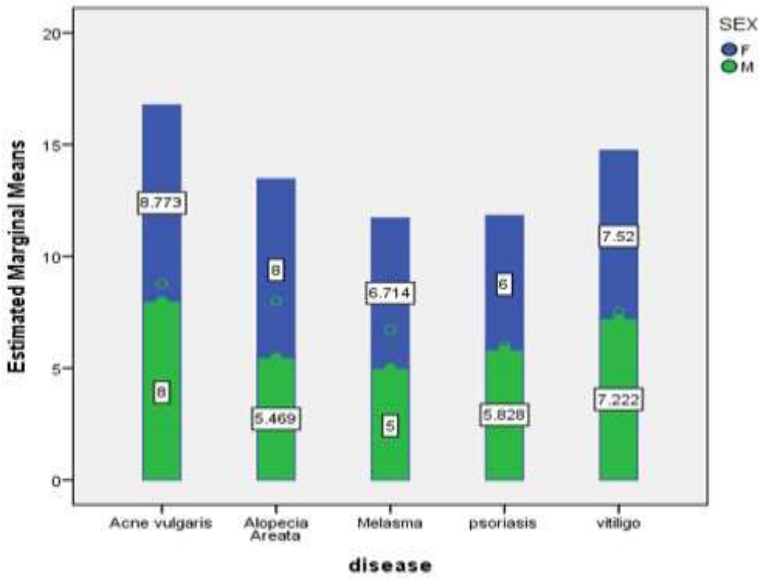

Fig-3: Shows mean DLQI scores in males and females of the chosen subgroups of diseases

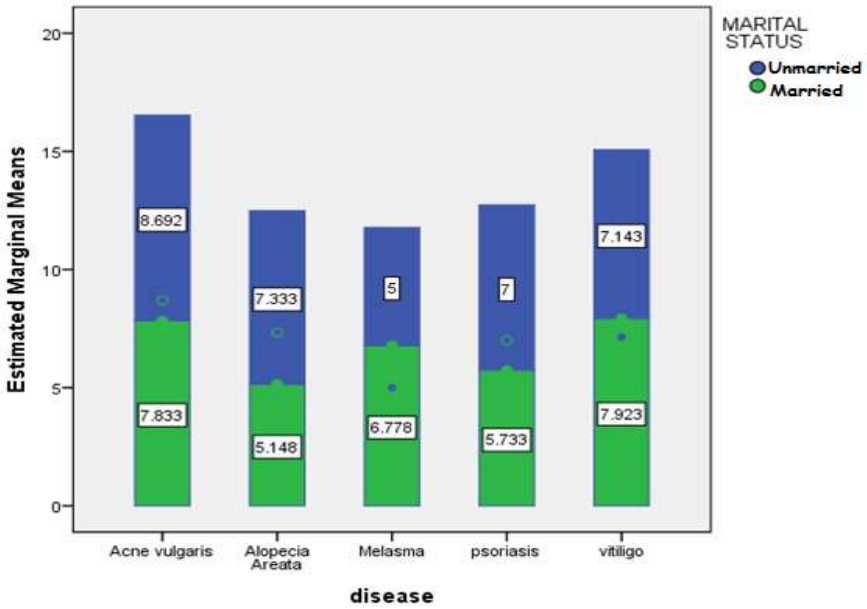

Fig-4: Depicting relation between marital status and mean DLQI in various disease subgroups

Table-4: Relationship between Disease Severity and Mean DLQI in disease Subgroups

Disease	SEVERITY	Mean	Std. Deviation	N
Acne vulgaris	Mild	4.25	.957	4
	Mild to moderate	8.00	1.974	20
	Moderate	11.33	1.751	6
	Severe	14.00	8.485	2
	Total	8.53	3.360	32
Alopecia Areata	Mild	4.85	2.033	20
	Mild to moderate	6.17	1.835	6
	Moderate	6.71	1.496	7
	Total	5.48	2.017	33
Melasma	Mild	4.89	1.167	9
	Mild to moderate	7.25	2.217	4
	Moderate	7.35	2.999	17
	Total	6.60	2.673	30
Psoriasis	Mild	5.22	2.682	9
	Mild to moderate	5.40	3.130	5
	Moderate	6.26	2.281	19
	Total	5.85	2.489	33
Vitiligo	Mild	6.31	1.195	16
	Mild to moderate	6.67	.577	3
	Moderate	8.50	2.714	12
	Severe	10.00	1.732	3
	Total	7.44	2.232	34
Total	Mild	5.28	1.862	58
	Mild to moderate	7.18	2.216	38
	Moderate	7.56	2.832	61
	Severe	11.60	4.930	5
	Total	6.78	2.784	162

*Mean difference is at the significance level 0.05

Table-5: Dependent Variable: DLQI SCORE

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Disease	87.805	4	21.951	4.290	.003
SEVERITY	277.624	3	92.541	18.085	.000
disease * SEVERITY	84.138	9	9.349	1.827	.068
Error	741.960	145	5.117		
Total	8690.000	162			
Corrected Total	1248.000	161			
a. R Squared = .405 (Adjusted R Squared = .340)					

DISCUSSION

Skin diseases can have a major impact on patients' lives in terms of psychological well-being, social functioning and everyday activities. Assessment of patients' quality of life has become an important endpoint in clinical trials in addition to the traditional clinical outcomes [3]. The diseases that this study identified as having the most impact on quality of life are in agreement with the results of other studies carried out in several countries. Psoriasis, vitiligo and acne have been the skin diseases with the highest DLQI scores and, therefore, the most relevant regarding the resulting damage. Among these, psoriasis has the highest impact[10]. Acne and vitiligo are more likely to affect the psychosocial component of QOL. Psoriasis patients are generally affected by both physical and psychosocial well-being. Even though studies support that acne patients have better overall QOL scores, acne can have a negative effect on the patient's life than psoriasis[8]. Acne possibly leads to the highest scores because of its potential to cause psychological stress and permanent scarring[8, 9]. As in this study, Mean DLQI score in acne is more than all other diseases taken under consideration.

Regarding gender, not much difference was found between total DLQI scores for men and women[9]. Subjects from both genders experience deterioration in quality of life. And like wise for Marital Status. Comparison of prevalence between different studies is difficult because of differences in the questionnaire design, study setting, and population characteristics. The study was carried out on patients referred to dermatology outpatient department at a Tertiary care centre in Punjab. This limits the external validity of this research, as its findings cannot be extended to all individuals with skin lesions. However, given the difficulty of implementing population-based studies with the diagnostic scope and accuracy of this article, our findings enable us to establish some important considerations about quality of life in patients with skin diseases. The assessment of the impact on quality of life in patients with skin diseases is important for clinical management. It is essential to detect patients at a higher risk of experiencing worse quality of life in order to treat them in a more integrated way

ACKNOWLEDGEMENT

The research project was conducted based on DLQI questionnaire as developed by the Cardiff University in 1994. It is a simple 10-question validated questionnaire that has been used in over 40 different skin conditions in over 80 countries and is available in over 90 languages. © A Y Finlay, G K Khan April 1992 www.dermatology.org.uk

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