ABSTRACT... Objectives: The study aimed to determine the prevalence and risk factors of Depression and Anxiety in indoor Patients of Dermatology Department.

Types of study: cross sectional study.

Place and Duration of study: The study was conducted at indoor Department of Dermatology, D.H.Q Hospital Faisalabad from August 2006 to October 2006.

Patients & Methods: A total of 77 diagnosed dermatological patients, (21 males and 56 females) were selected by using non-probability convenient sampling. Hospital Anxiety and Depression Scale and DSM –IV-TR criteria for depression and anxiety were used to evaluate the patients. QOL-BREF was administered. Results were also correlated with patient’s demographics.

Result: Out of 77 Patients who were enrolled in a study, 52 % of subjects reported psychiatric co-morbidity regarding anxiety and depression according to DSM-IV-TR, HADS, anxiety and depression score was 12.75 (±4.33) and 11.18 (±4.51) respectively. A strong co-relation of HADS anxiety and HADS depression was found with the DSM-IV-TR diagnosis respectively. The strong negative association was found with the education, monthly income and socio-economic status respectively.

Conclusion: The study shows high Prevalence of Depression and Anxiety in Patients having dermatological disorder. The findings also highlight the importance of recognizing dermatological disease related psychiatric problems. Through training, dermatologists can identify psychiatry morbidity and play their role in early detection, management and referrals of complicated cases of these co-morbid conditions. In this way better quality of care can be assured.

Key words: Dermatology, Depression and Anxiety.

INTRODUCTION
Psychiatric morbidity is one of the major public health problems. According to different survey of general population in Pakistan, 13-28% people are suffering from moderate to severe form of mental disorder1.

The prevalence of psychiatric illness in other medical patients is higher than that in the general population, both in developed and developing countries.

In dermatological disorders this very important aspect of psychiatric co-morbidity is usually being neglected. It is difficult to say that either skin diseases cause the psychiatric co morbidity or vice versa. The role of stressful events in psoriasis, alopecia areata, atopic dermatitis and urticaria was apparently clearer which has been long postulated2.

A large number of skin diseases, including atopic dermatitis and psoriasis appear to be precipitated or exacerbated by psychological stress. Nevertheless, the...
specific pathogenic role of psychological stress remains unknown\(^1\). A significant prevalence of depressive disorder is reported among dermatological patients in general and with specific dermatological conditions in particular\(^2\).

Dermatological patients may recognize psychological symptoms as part of their illness, but these are overshadowed by intense physical complaints that allow those reluctant to accept the stigma of mental illness still to occupy the sick role\(^3\).

Acne has been implicated in psychiatric and psychological processes more than most other dermatological conditions. Acne patients report greater levels of anxiety and depression than other medical populations, including cancer patients and other dermatology patients. Studies have found significant impairment in self-image and self-esteem, impairment in psychological well being, dissatisfaction with appearance and inhibition of social interactions in acne patients\(^4,7,8,9\).

In Pakistan few studies have been carried out to assess this issue of morbidity, it has been seen that dermatology out patients have significant psychiatric morbidity. The patients were screened for psychiatric complaints and the result shows that patients with chronic disfiguring lesions like Acne, Eczema, Psoriasis and Vitiligo have more chances to develop depression and anxiety\(^10\).

Another study was done to find out the intensity of psychiatric morbidity and to see the patterns of psychiatric ailments in dermatological patients. General Health Questionnaire-12 (GHQ) was used for screening and Psychiatric Assessment Schedule (PAS) was administered to those who were found to be positive for psychiatric case-ness. Results reveals that the patterns of psychiatric ailment detected by PAS was major depressive illness, generalized anxiety disorder, mixed anxiety & depression states and dysthemia\(^11\).

In an other study which was carried out to determine the frequency and pattern of psychiatric disorder amongst patients with vitiligo, concluded that major depressive illness was most frequent psychiatric illness followed by generalized anxiety, mixed anxiety and depression, social phobia, agoraphobia and sexual dysfunction\(^12\).

Despite this literature on anxiety and depression in dermatological patients many important questions remain unanswered regarding Pakistan, the aim of the present study was to characterize the anxiety and depression reported by dermatological patients using standardized diagnostic criteria for generalized anxiety disorder and major depression; to estimate the prevalence; to compare screening tools such as Hospital Anxiety and Depression Scale in detecting these anxiety disorders and depression moreover to examine the demographic and psychosocial associations in dermatological patients. It was further aimed to study the relationship between a psychiatric morbidity and demographic variables in order to identify subgroups with increased risk.

**PATIENTS AND METHODS**

The study was conducted from Aug.2006 to Dec.2006. Seventy Seven (77) indoor patients suffering from various dermatological disorders were selected from the dermatology department of DHQ Hospital through non-probability convenient sampling with the help of liaison medical officers appointed by the head of dermatology department. The inclusion criteria was all in-door patients during study and those were excluded who refused to be the part of research sample.

Raters were trained in the administration of clinical psychiatric morbidity and to see the patterns of psychiatric ailments in dermatological patients. General Health Questionnaire-12 (GHQ) was used for screening and Psychiatric Assessment Schedule (PAS) was administered to those who were found to be positive for psychiatric case-ness. Results reveals that the patterns of psychiatric ailment detected by PAS was major depressive illness, generalized anxiety disorder, mixed anxiety & depression states and dysthemia\(^11\).

During stage-1 after having obtained verbal consent from the patients they collected information regarding Demographic Questionnaire, which consisted of name, age, gender, education, marital status, occupation, income, family type etc. Then Hospital Anxiety and Depression Scale (HADS) were administered to all selected individuals\(^13\).
During stage-2 patients were interviewed by the Raters who were blind to the respective HADS Score and used DSM-IV\textsuperscript{14} criteria (Major Depression and Generalized Anxiety) to assess depression and anxiety. Then QOL-BREF was administered\textsuperscript{15}.

All the data was analyzed by SPPS 13.0 and $p<0.01$ was considered to be statistically highly significant. The results are expressed as mean and standard deviations. Bivariate Pearson and Spearman correlation was used to find out the correlation of HADS anxiety and depression with other factor.

**RESULTS**

A total of 77 patients participated in the study. The mean age was 29.74 years, 27.3\% were male and 72.7\% were female. Forty-six subjects (49.74\%) reported HADS-A score over seven, twenty-four (31.2\%) fulfilled DSM-IV-TR criteria at clinical interview for generalized anxiety disorder and thirty-seven (48.05\%) reported HADS-D score over seven and fifteen (19.5\%) fulfilled the DSM-IV-TR criteria for depression, one (1.3\%) fulfilled DSM-IV-TR criteria at clinical interview for anxiety and depression both.

Out of 77 patients 51.97\% (40 patients) were found to be suffering from psychiatric morbidity, with mean score of 12.75 ±4.33 and 11.18±4.52 HADS for Anxiety and Depression respectively as shown in Table-III. Mean age was found to be 31.67 years as shown in Table-III. Patients who had psychiatric morbidity 15\% were male and 85\% were female. Majority of the patients were illiterate and belonged nuclear family system, most of the females were housewives. Patients with dermatological disorder for less than one year were 65\% and 35\% patients were suffering from skin conditions for more than a year. Patient's who consulted a psychiatrist or were prior diagnosed with a psychiatric disorder were only 7.5\%.

Out of 77 patients 40 patients were found to be suffering from psychiatric morbidity, with mean score of 12.75 ±4.33 and 11.18±4.52 HADS for Anxiety and Depression respectively as shown in Table-III. Mean age was found to be 31.67 years as shown in Table-III. Patients who had psychiatric morbidity 15\% were male and 85\% were female. Majority of the patients were illiterate and they were from nuclear family system, most of the females were housewives. Patients with dermatological disorder for less than one year were 65\% and 35\% patients were suffering from skin conditions for more than a year. Patient's who consulted a psychiatrist or were prior diagnosed with a psychiatric disorder were only 7.5\%.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|}
\hline
\textbf{Variable} & \textbf{N=77} & \textbf{N(\%)} & \textbf{n(Comorbid)} & \textbf{Comorbid n(\%)} \\
\hline
\textbf{Gender} & & & & \\
Male & 21 & 27.3 & 06 & 15 \\
Female & 56 & 72.7 & 34 & 85 \\
\hline
\textbf{Education} & & & & \\
Illiterate & 19 & 24.7 & 14 & 35 \\
Primary & 08 & 10.4 & 04 & 10 \\
Middle & 25 & 32.5 & 14 & 35 \\
Intermediate & 09 & 11.7 & 03 & 7.5 \\
Graduate & 10 & 13.0 & 03 & 7.5 \\
Masters/ professionals & 06 & 7.8 & 02 & 05 \\
\hline
\textbf{Residence} & & & & \\
Urban & 54 & 70.1 & 22 & 55 \\
Rural & 23 & 29.9 & 18 & 45 \\
\hline
\textbf{Socio-economic state} & & & & \\
Lower & 13 & 16.9 & 08 & 20 \\
Lower-middle & 20 & 26.0 & 14 & 35 \\
Middle & 44 & 57.1 & 18 & 45 \\
\hline
\end{tabular}
\caption{Descriptive Analyses}
\end{table}
The present study indicates that more than half of the indoor Dermatological patients were found to be suffering from psychiatric morbidity, which indicates that the prevalence of psychiatric problems is high in Dermatological patients that can be correlated with a study by Woodruff et al. which reported a prevalence of 30-40% for the psychiatric problems among the dermatology patients who visit their clinics.

The percentage of different dermatological disorders has been shown in Table-IV. From the data obtained, 60% of patients were suffering from generalized anxiety disorder and 37.5% with major depression.

The co-relation analysis Table-V showed that the overall HADS anxiety and depression was highly significant (0.673**). Furthermore, negative correlation has been seen with education, monthly income and socio-economic status (-0.298**), (-0.393**) and (-0.271*). Whereas the strong positive correlation (0.562**, 0.732**) respectively with DSM-IV with HADS anxiety and HADS depression respectively was observed.

Bivariate correlations were performed to examine differences on the four quality of life domains as a function of psychiatric diagnosis. There was also correlation found with QOL and HADS Depression and HADS anxiety scores but highly significant correlation has been with QOL-BREF Domain 2.

### DISCUSSION

The present study indicates that more than half of the indoor Dermatological patients were found to be suffering from psychiatric morbidity, which indicates that the prevalence of psychiatric problems is high in Dermatological patients that can be correlated with a study by Woodruff et al. which reported a prevalence of 30-40% for the psychiatric problems among the dermatology patients who visit their clinics.

**Table-II. DSM-IV-TR Diagnosis**

<table>
<thead>
<tr>
<th>Variable</th>
<th>N=77</th>
<th>N(%)</th>
<th>n(Comorbid) n=40</th>
<th>Comorbid n(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>37</td>
<td>48.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>24</td>
<td>31.2</td>
<td>24</td>
<td>60</td>
</tr>
<tr>
<td>Depression</td>
<td>15</td>
<td>19.5</td>
<td>15</td>
<td>37.5</td>
</tr>
<tr>
<td>Depression+Anxiety</td>
<td>01</td>
<td>1.3</td>
<td>01 dia</td>
<td>2.5</td>
</tr>
</tbody>
</table>

**Table-III. The distribution of Scoring of HADS by Frequency Mean.**

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>40</td>
<td>31.67</td>
<td>13.5</td>
</tr>
<tr>
<td>HADS Anxiety Score</td>
<td>40</td>
<td>12.75</td>
<td>4.33</td>
</tr>
<tr>
<td>HADS Depression Score</td>
<td>40</td>
<td>11.18</td>
<td>4.52</td>
</tr>
</tbody>
</table>

**Table-IV. Dermatological Diagnoses.**

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>N</th>
<th>%</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infectious</td>
<td>23</td>
<td>29.9</td>
<td>14</td>
<td>35</td>
</tr>
<tr>
<td>Eczema</td>
<td>05</td>
<td>6.5</td>
<td>04</td>
<td>10.0</td>
</tr>
<tr>
<td>Pigmentary</td>
<td>08</td>
<td>10.4</td>
<td>03</td>
<td>7.5</td>
</tr>
<tr>
<td>Autoimmuno</td>
<td>09</td>
<td>11.7</td>
<td>03</td>
<td>7.5</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>32</td>
<td>41.6</td>
<td>16</td>
<td>40</td>
</tr>
</tbody>
</table>

**Table-V. Co-relation of variables with HADS anxiety and HADS Depression score.**

<table>
<thead>
<tr>
<th>Variables</th>
<th>HADS Anxiety</th>
<th>HADS Depression</th>
</tr>
</thead>
<tbody>
<tr>
<td>HADS Anxiety</td>
<td>01</td>
<td>0.673**</td>
</tr>
<tr>
<td>HADS Depression</td>
<td>0.673**</td>
<td>01</td>
</tr>
<tr>
<td>Education</td>
<td>-0.108</td>
<td>-0.321**</td>
</tr>
<tr>
<td>Monthly Income</td>
<td>-0.221</td>
<td>-0.393**</td>
</tr>
<tr>
<td>Socio-economic status</td>
<td>-0.1600</td>
<td>-0.256*</td>
</tr>
<tr>
<td>DSM-IV TR Diagnosis</td>
<td>0.630**</td>
<td>0.730**</td>
</tr>
<tr>
<td>QOL-BREF Domain 1</td>
<td>-0.131</td>
<td>-0.146</td>
</tr>
<tr>
<td>QOL-BREF Domain 2</td>
<td>-0.254</td>
<td>-0.590**</td>
</tr>
<tr>
<td>QOL-BREF Domain 3</td>
<td>-0.287</td>
<td>-0.223</td>
</tr>
<tr>
<td>QOL-BREF Domain 4</td>
<td>-0.170</td>
<td>-0.312</td>
</tr>
</tbody>
</table>

**Co-relation is significant at the 0.01 level (2-tailed)***

**Co-relation is significant at the 0.05 level (2-tailed)**
Study conducted at CMH Hospital\textsuperscript{10} which also reported psychiatric co-morbidity in dermatological out door patients about less than 40%.

The current study also reveals that psychiatric co-morbidity was significantly high in married (60%) as compare to single (40%) these findings are similar with the study of Singh et al\textsuperscript{11}. Another finding showed that the majority of females (85%) were suffering with psychiatric co-morbidity as compare to male (15%), which indicates that females are more anxious about skin problem as compare to males.

A highly significant correlation between HADS anxiety scores and unemployment (0.234*) indicates that unemployed people suffered more that may be due to feelings of worthlessness and effect of financial constrains.

Moreover, the findings also indicate that there was a significant difference between the urban residence and rural residence. More people were suffered from HADS anxiety subscale ($r = 0.333^{**}$) and relatively less significant on HADS depression subscale ($r=0.275^*$). As the study sample is from industrial city of Pakistan that might cause the more skin problem and majority of the people scored on HADS anxiety that would be due to the social anxiety & the anxiety of evaluation. The other reason might be in the urban areas there is more awareness about the diseases and their impact on the personality, which also may cause the anxiety and depression.

The findings of our study also revealed that the patients of nuclear family system was more suffered 67.5% than the patients of joint family system 32.5%. This could be due to the less support of relatives that might induce anxiety and depression while joint family system support the individual to cope with the illnesses and boosting their morale and self-esteem.

Another finding the current study indicates lower level of education is associated with higher psychiatric co-morbidity, while another study in India shows that there were no differences associated with education level\textsuperscript{16}.

Correlation was found with QOL and HADS Depression and HADS anxiety scores but highly significant correlation has seen with QOL-BREF Domain 2 only, this finding is in agreement with previous study\textsuperscript{19}.

Those areas of overlap between psychiatry and dermatology are important and a competent dermatologist should be able to pick up any emotional and psychological cues that may be advanced by the patient during consultation. This would be very helpful in treating the patients. The additional effect of brief, simple psychotherapy will also help these patients with high anxiety levels and depression to achieve normal remission.

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REFERENCES


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