Psychiatric Comorbidity and Quality of Life in Patients with Dermatologic Diseases

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Objective: The aim of this study was to evaluate the prevalence of psychiatric disorders in patients with dermatologic disease and its relationship to the patients' quality of life.
Method: This study was cross-sectional. A total of 414 patients with various dermatologic diseases participated in this study. The participants were recruited from an outpatient clinic and inpatient ward of a referral dermatologic hospital using a simple random sampling method. Demographic variables, duration and characteristics of disease and admission status were recorded. Patients were asked to complete two questionnaires: GHQ-28 (General Health Questionnaire) ,and DLQI (Dermatologic Life Quality Index).
Results: The estimated prevalence of psychiatric comorbidity in dermatologic patients was %51.3.There was a significant relationship between GHQ score and educational level, marriage statues, type and course of dermatologic disease and admission status ($p<0.05$). The probability of psychiatric disorders increased among patients with lower educational level, married subjects, patients with relapse of the disease and those having some special skin diseases such as Psoriasis and Pemphigus. However, no significant relationship was observed between the GHQ score and duration of disease and sex. Moreover, there was a significant relationship between quality of life and educational level, marriage status, type of dermatologic disease, course of disease and admission status ($p<0.05$). Higher quality of life was observed among participants with higher educational level, those who were unmarried, patients with first episode and milder diseases. This study shows a significant relationship between quality of life and mental health ($p<0.05$). The lower probability of concomitant mental disorder, the higher the quality of life.
Conclusion: Psychiatric disorders are frequent among patients with dermatologic diseases. These disorders have a negative effect on quality of life. Psychiatric consultation, liaison services and education in dermatologic wards can help the diagnosis, treatment and follow up of psychiatric comorbidity in dermatologic patients.

Keywords: *Comorbidity, Mental disorders, Quality of life, Skin Diseases*

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Dermatologic diseases are often accompanied by changes in patients' appearances which are visible to others. This could have negative impacts on patients' self image, self-esteem and interpersonal interaction. The psychosocial burden of skin diseases should not be ignored as it can potentially affect the overall disability experienced by the patient (1).

The relation between psychiatry and skin diseases can be evaluated from two aspects: On one hand, psychiatric comorbidity influences the development and course of dermatologic diseases via the effects of stress, depression, and anxiety (2). On the other hand, cosmetically disfiguring dermatologic diseases may cause significant psychosocial distress for patients (3).

Comorbid mental illness play a substantial role in course, severity, response to therapy and therefore the psychosocial well-being of the dermatologic patients. It seems that comorbid mental illness and its consequences on patients' quality of life have been underappreciated. Therefore, understanding the prevalence of psychiatric comorbidity and its potential effects on patients' lives may lead to changes in management approaches and ultimately to improve the patients' outcome.

Most of the previous studies have worked on specific diseases such as: psoriasis, acne, vitiligo, genital herpes, alopecia areata, hirsutism and their association with psychiatric comorbidity. Nevertheless, little research has been conducted on the effects of different variables in this field, alongside with its impact on the patients' quality of life (4). Mecri and his colleagues found that a decreased quality of life in vitiligo patients is mainly related to the psychiatric co morbidity (5).

In the study on patients with psoriasis and lichen planus, Akay and his colleagues showed that depressive disorders are more common among these two groups of patients compared with the control group who had no skin diseases (6). Leekasa in a study on 786 leprosy patients showed a seven fold increase in mental distress among these patients (7). The prevalence of psychiatric co morbidity in dermatologic outpatients was 33.45% in a study by Aktan (8).

This study sought to identify the prevalence of psychiatric comorbidity among dermatologic patients and its association with different variables. The second purpose of this study was to evaluate the status of quality of life among dermatologic patients with different demographic characteristics and disease related variables. The present study also aimed at discovering the probable effects of psychiatric comorbidity on the quality of life of patients with dermatologic diseases.

Materials and Methods

This is a cross-sectional descriptive study. The sample was selected using a simple random sampling method.

All the patients suffering from dermatologic diseases who accepted to participate in the study were included in study population regardless of their sex, age, education level and marital status.

Research questionnaires were filled by patients attending the outpatient dermatologic clinics and inpatient dermatologic wards after giving written informed consent. The questionnaire consists of two parts. In the first part, the demographic disease and its related information were collected; and in the second part, two other questionnaires were used: GHQ-28 and DLQI.

GHQ-28 (General Health Questionnaire) is a self-report measure of psychological distress. This questionnaire focuses on two major aspects-the inability to carry out normal functions and the appearance of new and distressing psychological phenomena. It is a -28 -items scaled measure for the mental health domains of severe depression, anxiety, social dysfunction and somatic symptoms. The questions were to be answered on a Likert scale. The subjects got 0 point if they chose the “not at all” response, and got 3 points for choosing the “much more than usual” response. In addition, a total score was also calculated considering a bimodal answer to the questions. For this, each question would get a score of 0 (if the original answer was 1) and a score of 1 (if the original answer was 1, 2, or 3). The total score would then sum up and the patient would be considered as having psychiatric problems if he/she gets a total score of 6 and above. The questionnaire was standardized in Persian by Noorbala et al., with the reliability coefficient of 0.85 (9).

DLQI (Dermatology Life Quality Index): is a widely used questionnaire aiming to measure the impact of skin disease on adult patients' quality of life. The DLQI consists of 10 items covering six basic topics: symptoms and feelings, daily activities, leisure, work or school, personal relationships, and treatment. DLQI calculates by collecting the sum of the scores of the above questions. Higher scores are associated with greater impairment of quality of life. DLQI score is displayed in percentage ranging from a minimum of "0" to a maximum of "30" ; its reliability and validity has been confirmed earlier by Aghaee in Iran. (10)

Statistical analysis

Cross tabulation, frequency statistics and chi square test were employed to evaluate the relationship between variables as well as Multivariate ANOVA and Scheffe Post Hoc Multiple comparison. P value less than 0.05 was considered statistically significant.

Ethical issues

Prior to the data collection, the current study was approved by Tehran University of Medical Sciences Ethical Committee for Medical Research.

Results

From the total sample of 414 the dermatologic patients, 241 females and 173 males participated in the study. The mean±SD age (year) and duration of disease (month) were 35.34±17.96 and 61.29±93.77 respectively. In general, 233 (56.3%) of the patients were married. Among the participants, 318 (76.8%) were outpatients, and 242 (58.36%) experienced the first episode of the disease. Psoriasis was the most common diagnosis with a total number of 94 (22.8%). Table 1 demonstrates the demographic characteristics of the respondents and the descriptive findings**.**

Prevalence of psychiatric comorbidity

Based on the GHQ-28 bimodal scoring system and standard cut-off >= 6, a total number of 213 (51.3%) of the patients were considered to have a psychiatric comorbidity.

Prevalence of psychiatric comorbidity was higher among married subjects (138 of 233, 59.2%) than the single participants (72 of 176, 40.9%) (χ^2=1.145, df=4, p=0.004).

Analysis of the GHQ score in patients with different educational level shows a significant decrease in mental disorder with higher educational level (χ^2=5.76, df=1, p=0.016).

Moreover, higher rate of psychiatric comorbidity was observed among patients with the recurrent skin disease (59.6%) than patients experiencing the first episode of the disease (45.4%) (χ^2=12.206, df=1, P<0.0001). The rate was also higher among inpatients (70.8%) than among the outpatients (45.5%) (χ^2=19.14,df = 2 and p<0.001).

Based on the result of the one-way ANOVA, there

Table 1. Demographic and disease related information

Variable	Number	Percentage
Age (mean±SD) 35.34±17.96		
<10 year	6	1.4
10-20 year	77	18.6
20-30 year	134	32.4
30-40 year	69	16.7
40-50 year	49	11.8
50-60 year	32	7.7
> 60 year	47	11.4
Sex		
male	41.8	173
female	58.2	241
Education		
None educated	11.9	49
Primary	15	62
Medium	16.9	70
High school	37.8	156
University	18.4	76
Marital status		
Single	42.5	176
Coupled	56.3	233
Divorced	0.5	2
Widow	0.7	3
Type of skin disease		
psoriasis	22.8	94
Pemphigous	18.2	75
Vitiligo	14.5	60
Eczema	5.3	22
Acne	5.3	22
Alopecia	5.1	21
Mycosis Fungoides	3.6	15
Others	25.2	126
Course of disease		
First episode	58.36	242
Recurrence	41.4	171
Admission Statues		
Outpatient	76.8	318
Inpatient	22.9	95

were considerable differences in prevalence of psychiatric comorbidity among patients with various types of skin diseases (χ^2=620.19, df = 7 and p=0.001). Meanwhile, Scheffe analysis showed higher prevalence of psychiatric comorbidity among patients with particular diagnosis of Vitiligo, Psoriasis and pemphygous as given by Schefe multiple comparisons. Table 2 demonstrates the effects of different variables on participants' GHQ scores.

However, there was no correlation between the GHQ scores and the patients' sex or duration of dermatologic disease.

Quality of life

The mean±SD score obtained by participants was 10.46±7.021 (ranges from0-30). Higher scores indicate greater impairment of patients' quality of life.

There was a higher probability of impairment of quality of life among older patients (P value <0.001, Pearson correlation coefficients 0.253).

Single participants had significantly better quality of life than the married subjects (χ^2=447.36, df = 2 and p<0.001). Testing by Scheffe also showed substantial differences between single and married patients (confidence interval -4.66 to -1.28 and p<0.001).

Chi-square test revealed a significant effect of types of skin diseases on patients' quality of life. (χ^2=7.24, df=6, P<0.001). One way ANOVA analysis also showed a significant discrepancy in quality of life among patients with different types of skin diseases (P<0.001, df =7).

In addition, patients experiencing first episode of their disease, outpatients and subjects with higher educational level enjoyed a better quality of life compared with the rest of the patients.

However, applying the DLQI banding concept shows that the patients' sex or the duration of the disease has no impact on their quality of life.

Relation between psychiatric comorbidity and quality of life

The analyses showed that obtaining higher scores in GHQ-28 by the participants correlates directly with significant reduction in their quality of life as mirrored by significant increase in their DLQI scores (P<0.001, Pearson correlation coefficients 0.573).

Discussion

The current study has been performed on 414 patients, aiming to determine the prevalence of psychiatric comorbidity in dermatologic patients. In this study, almost half of (51.3%) the patients had impaired mental health (probable psychiatric disorder) identified by GHQ-28 questionnaire. This prevalence is about four to five times higher in comparison with the general population in Iran (11).

Some studies conducted on the prevalence of psychiatric disorders in patients with dermatologic diseases in different geographical regions have shown similar results. Nevertheless, these studies declared lower prevalence rate of comorbid psychiatric disorders compared with the present study. The higher prevalence rate in our study compared with other studies might stem from the difference between the selected samples. In our study, patients attending a referral dermatologic hospital who probably had more sever skin diseases were selected. Aktan and his colleagues found the prevalence rate of 33.4% among 256 outpatients sample in Turkey by means of GHQ-12 questionnaire(8).

Hughes and his coworkers in a study on 196 dermatological outpatients and 40 inpatients, showed the rate of comorbid psychiatric disorders of 30% and 60% respectively (12). Carney and his team showed

Table 2.Effect of different variables on participants mental health status according to GHQ scores

	With mental disorders			
	n	%	n	%
Total number	213	51.3	201	48.4
Education				
None educated	29	7.0	20	4.8
Primary	36	8.7	26	6.2
Medium	39	9.4	31	7.5
High school	77	18.6	79	19.1
University	31	7.5	45	10.8
Marital status				
Single	72	17.4	104	33.1
Coupled	138	33.4	95	23.0
Divorced & Widow	3	0.7	2	0.4
Type of skin disease				
psoriasis	60	14.5	34	8.2
Pemphigous	49	11.8	26	6.2
Vitiligo	17	4.1	43	10.4
Eczema	11	2.6	11	2.6
Acne	11	2.6	11	2.6
Alopecia	10	2.4	11	2.6
Mycosis Fungoides	10	2.4	5	1.2
Other	55	13.3	71	17.1
Course of disease				
First episode	110	26.6	132	31.9
Recurrence	102	24.6	69	16.7
Admission Statues				
Outpatient	145	35.1	173	41.8
Inpatient	68	16.4	28	6.7

the prevalence rate of comorbid mental diseases of about 52% in a group of 56 dermatologic outpatients using GHQ-30 questionnaire (13). Picardi reports the prevalence rate of 25.2% of psychiatric disorders in dermatologic patients in his study on 2579 outpatients. Although Picardi's study consists of greater sample size, the differences in prevalence rate may drive from two main reasons: First, Picardi's study included only dermatologic outpatients but our study included both outpatients and inpatients; further, in our study, the prevalence of psychiatric disorders was 45.5% in dermatologic outpatients and 70.4% in inpatients. Second, most of our patients had certain skin diseases such as vitiligo, psoriasis, pemphigus, eczema and etc which are accompanied by disfigurations in nature.

Some other differences with previous studies were observed: this study shows the equal prevalence rate of comorbid psychiatric disorders between men and women while Picardi's study shows higher prevalence in women. It can be the result of the effects of skin disease on the individual's social and job functions. As in our society, males present in the society and work more than females. On the other hand, in Picardi's study, females' population (n=1531) was greater than males' (n=1031) (4).

Surprisingly, the comorbid mental disorder was higher among married subjects in comparison to single subjects; this may be due to the negative effect of dermatologic diseases on interpersonal relationships.

Aktan, Hughes and Wessely reported insignificant relationships between mental health and disease duration, sex, skin lesion location and course of disease in dermatologic patients. All these results are in line with our study except for course of the disease which has a significant relationship with mental health (8, 12, 14).

In the present study, patients' quality of life was evaluated using DLQL qustionnaire and it shows higher impairement of quality of life in older, married patients with lower educational level. In addition, quality of life was lower among inpatients, patients with recurrent disease and certain types of dermatologic diseases like vitiligo, psoriasis and pemphigus. Disease duration and patients' sex have no effect on patients' quality of life. Gupta in his study on 215 psoriasis patients evaluated the effect of age and sex on patients' quality of life and severatiy of their disease. Based on his study, patients' age and sex had no impact on severity of disease. However, problems related to patients' apparence and social, occupational and financial problems in both sexs were higher in patints in the age groups of 18-29 and 30-45 years compared to older age groups. No differences in males and females in terms of quality of life related to patients' apparence and social problems were observed. Meanwhile occupational- related stress was more common in males. These results are similar to our study (15).

As mentioned previously, the current study shows that comorbid mental disorder directly affects the quality of life in dermatologic patients. Patients with higher GHQ-28 scores, obtained higher scores in DLQI which is the indicator of impairment in patient's quality of life. Therefore, obtaining a higher score in GHQ-28 correlates with a probable comorbid mental disorder. Obtaining such high scores in GHQ-28 is concomiant with lower quality of life in the patients. Therefore the psychiatrists intervention as well as traditional dermatologic treatments may be needed to achieve a better outcome both for the patients and the physicions.

Limitations

Th current study was done in a referal dermatologic hospital; thus, the prevalence, severity and patterns of dermatologic diseases might be different from other dermatologic centers. Thereby, the result of this study might not be extendable to all patients with dermatologic diseases.

GHQ-28 was used as a measure of impairement of mental health. This is a subjective measure; as different respondants might have different understanding of its scales, therefore, it might not show the precise prevalence of mental health impairement.

As this study was cross-sectional with its own limitations, conducting a longitudenal study for confirmation of causality is needed.

Recommendations

Psychiatric comorbidity is prevalent among dermatologic patients and these disorders not only affect the patients' well-being but also affect the skin disease duration and treatment. In our study, these prevalences were high and significant and the relation between mental health disorder and patients quality of life was observed, so we recommend the following actions to be taken:

1- Allocating time for screening programs for diagnosis of probable comorbid mental disorders in dermatologic doctor-patient visits.

2- Providing special services to refer the patients who were found to have a probable comorbid mental disorder with screening program, for proper evaluation, treatment and follow up.

3- Psychiatrists should be considered as a member of the treatment team in referal dermatologic centers where the probable comorbid mental disorder is higher among patients. With the aim of identifying and treating the comorbid mental disorder and reaching an improved quality of life.

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