

Prevalence of Depression Among Patients Attending Dermatological Clinic in Ibn –Sina Teaching Hospital Mosul- Iraq

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ABSTRACT

Psychiatrists are likely to encounter skin disorders directly or through referral from other specialties especially dermatologists. Psychiatrists may be involved in the collaborative treatment of patients whose skin disorders require both psychiatric & dermatological interventions and it is necessary for psychiatrist to have a conceptual overview of the dermatological disorders that often require psychiatric evaluation or interventions.

Materials and Methods: An observational, prospective, cross-sectional study, conducts on (300) dermatological patients attending the dermatology outpatient clinic in Ibn –Sina Teaching Hospital Mosul- Iraq. The study lasted from 1st January till 31st March, 2018. Tools; The general health questionnaire version-28 (GHQ-28), was applied as a screening tool in this study. It is a self-administered instrument, screen for current psychiatric disorders in the general population. It is divided into four subscales (somatic complaint, anxiety/insomnia, social dysfunction & severe depression).

Result: Generalized anxiety state was the main psychiatric disorder that was significantly prevalent among the participants in this study (36.5%). Depression was encountered in (29.6%) of the participants, it was more evident in those complained of a long duration dermatological diseases with a bit higher severity. The highest psychiatric morbidity was found in pemphigus, ichthyosis, and in the dermatological diseases of psychogenic origin. There was a significant, direct relationship between the duration & severity of the dermatological diseases & psychiatric morbidity. Site of skin lesions (on the exposed parts of the body), had a significant high psychiatric morbidity.

Conclusions: the current study revealed that psychiatric morbidity was common in dermatological patients. Generalized anxiety disorder, depression predominated in patients with skin lesions, especially those who were young, females, divorced, separated or singles. Psychiatric morbidity was significantly prevalent in alopecia areata, warts, urticaria. There was a close association between duration of dermatological diseases, the site of the lesions on the body and psychiatric morbidity, while the severity of the skin lesion had insignificant effect.

Keywords : anxiety, dermatological disorder, depression, alopecia areata, warts, urticaria

INTRODUCTION

The skin represents both the literal as well as the symbolic boundary between what is internal & what is external to the individual. The skin occupies a powerful position as an organ of communication & plays an important role in the socialization throughout the life cycle. The patient may use the skin to communicate emotional distress & any lesion in it may cause a full range of personal & familial problems. Women, suffering of a minor degree of hair loss which seems disproportionate to the objective degree of alopecia, have been reported to have underlying marital difficulties depression & depression [1]. In the extreme situation, patients may self-inflect their dermatological lesion & develop dermatitis artefacta, as an appeal for help [2]. Some patients with immature psychological coping mechanisms may not be able to obtain nurturing or attention from others by alternate means & may therefore derive secondary gain from having a visible skin condition [3]. Such patients may sabotage treatment efforts by noncompliance or continue to deny satisfactory improvement of their skin conditions. These patients refuse formal psychiatric interventions & the dermatologist has to be psychologically informed in order to manage these conditions. Alternatively, development of a cosmetically disfiguring coetaneous condition can result in social disapproval & increased self-consciousness. This can result in social withdrawal, academic underachievement & even serious psychological problems, especially when the skin disorders occur during the developmentally critical period, such as adolescence. This has been observed among

some patients with acne. In psoriasis, the cosmetic disfigurement & social stigma can have a profoundly adverse effect on the patient's quality of life in significant diseases-related stress, which may in turn exacerbate the psoriasis & adversely affect the course of the disease^[4]. This suggests that, at the very least, the dermatologist must provide suppatients with empathic support & possibly refer him to self-help groups or to the psychiatrist; as such interventions may even improve the course of the disease^[5].

The skin is considered as the mirror of the brain because both of them originated from the primitive ectoderm. Psychiatrists are likely to encounter skin disorders directly or through referral from other specialties especially dermatologists. Psychiatrists may be involved in the collaborative treatment of patients whose skin disorders require both psychiatric & dermatological interventions & it is necessary that the psychiatrist must have a conceptual overview of the dermatological disorders that often require psychiatric evaluation or interventions.

- The new classifications of psychocutaneous phenomena are: -
- Psychiatric disorders with cutaneous manifestations, e.g. delusional parasitosis.
- Dermatological disorders with psychiatric manifestations, e.g. eczema, acne vulgaris.
- Dermatological diseases influenced by psychosocial stressors, e.g. urticaria, psoriasis.
- Medical illnesses with neuropsychiatry & dermatological manifestations, e.g. systemic lupus erythematosus.
- Psychotropic medications with dermatological side effects, e.g. phenothiazine group.
- Dermatological medications with psychiatric side effects, e.g. corticosteroids, isotretinoin^[6].

REVIEW OF LITERATURES

The view that skin diseases are a cause of psychiatric morbidity has received little attention before the 80s of the 20th century. These literatures contained the occasional accord of the social & emotional problems associated with certain skin diseases.

Since the work of Shepherd in 1966, there had been increasing awareness of the psychiatric disorders in medical & general practice settings.

Still at that time, the nature of psychiatric disorders remained elusive because of the problems of symptoms overlap & case identification although there was awareness of the relationship between physical & psychiatric disorders. Brocq did one of the pioneer old studies in 1891, who wrote a description of neurodermatitis. Klaber & Wittkower in 1939 emphasized the importance of social the genesis of rosacea. Mackenna in 1944 showed that dermatological patients were often anxious, hysterical, narcissistic, obsessional individuals^[7]. Kenyon in 1966 wrote about the emotional problems in acne^[8].

The first systematic study of psychiatric disorders in dermatological clinics was done by Hughes in 1983, who mentioned that both extensive lesions & those on the exposed parts of the body are associated with increasing psychiatric morbidity. He also claimed in his study that there are several hypothetical mechanisms that might account for a link between disorders of the mind & the skin^[9].

Wessely & Lewis in 1989, classified psychiatric morbidity in dermatological clinics^[10].

In 1997, Woodruff et al mentioned in their research a recognized psychiatric morbidity among those who attend dermatology clinics^[11]. Gupta et al, in 1998, studied depression, suicidal ideation in dermatology patients with acne, psoriasis, alopecia areata & atopic dermatitis^[12].

Picardi et al, in the year 2000, studied the psychiatric morbidity in dermatology outpatient in Rome^[13], while he accomplished another similar research in 2001^[14], which studied the increased psychiatric morbidity in females attending the dermatology outpatient with skin lesion on the visible parts of the body. In 2001, another study was performed by Kurt Fritzsche, studying the psychosomatic liaison services in dermatology & the need of psychotherapeutic interventions & realization^[15]. In 2003, Sharman et al, performed a comparative study of psychiatric morbidity in five chronic dermatological diseases (psoriasis, chronic urticaria, leprosy, vitiligo, and lichen simplex chronicus)^[16]. Picardi A et al, in 2003 submitted another study on the treatment outcome & incidence of psychiatric disorders in dermatological outpatient in Rome.

Hussein A in 2005 studied the prevalence & pattern of psychiatric disorders among dermatological patients in Pakistan^[17]. In the same year, Picardi A, performed another study which underscored the prevalence of psychiatric disorders in patients had skin diseases & suggested more thorough screening mechanisms might benefit these patients^[18].

The lacunae of the earlier studies are the usage of screening tests only without the application of the structured or semi-structured interviews. Some of those researches studied a non-representative number of respondents. Most of the studies mentioned above took into account the psychiatric morbidity besides the socio-demographic status, like our current research.

OBJECTIVES

The purpose of the study is to find out the intensity of the psychiatric morbidity in dermatological outpatient attendees & to see the pattern of psychiatric ailment in these patients, besides identifying the socio-demographic variables associated with the presence of psychiatric disorders. The study shows the relationship of severity, duration, & site of the dermatological diseases on the body, with the psychiatric morbidity.

MATERIAL AND METHODS

a) Participants & setting

The research is an observational, prospective, cross-sectional study, which was conducted on three hundred dermatological patients attending the dermatology outpatient clinic in Ibn –Sina Teaching Hospital Mosul- Iraq. This clinic covers a wide area of referral of the dermatological cases in Mosul city.

The study lasted from 1st January till 31st of March, 2018.

Both sexes, whose age range was 16-60 years old, were invited to participate in the study. Twenty-six participants were excluded from the study, some of them refused to continue participation; the others didn't take the matter seriously. Informed consent, which contained statements describing the study & the nature of the subjects involved in it was submitted to the respondents. Confidentiality was asserted to these respondents. A written permission was taken from the general directorate of health in Mosul city to accomplish the research in Ibn –Sina Teaching Hospital Mosul- Iraq.

b) Tools

The general health questionnaire version-28 (GHQ-28), which was translated to Arabic language by expert bilingual psychiatrists, was applied as a screening tool in this study ^[19]. It is a self-administered instrument, screen for current psychiatric disorders in the general population. It is divided into four subscales (somatic complaint, anxiety/insomnia, social dysfunction & severe depression). The response to the questions are of the Likert type format. This version of the questionnaire is of good validity & reliability when using a cut-off score 6, i.e. those who scored six & above in each subscale, or respond to at least twenty-three out of twenty-eight questions were designated as possible cases of mental disorders.

Respondents scored possible cases on the GHQ-28, were interviewed according to the ICD-10 checklists ^[20]. Which are a set of semi structured instruments designed for clinician assessment of mental & behavioral disorders according to ICD-10 criteria. It consists of ICD-10 symptoms checklists & glossary, the international diagnostic checklist (IDCL) for ICD-10 & manual. The participants were submitted to the ICD-10 symptoms checklist version 1.1 at the beginning of the interview. It is a semi-structured instrument, designed for use by clinicians (psychiatrist or clinical psychologist), for assessment of the main psychiatric symptoms in the F0 to F6 categories of the ICD-10 system, served as a guide in the clinician's examination of the patients. It requires the clinician to examine the patients and/or case notes, to be able to make a firm diagnosis in the ICD-10 system. The clinician is asked to phrase the necessary symptom questions & to assess the clinical significance of the positive answers as in the routine clinical interview. In the checklist guided interview, chances for oversights are less & variability that typically contributes to the unreliability of unstructured clinical examinations is minimized.

The ICD-10 symptoms checklist consist of:

- (1) face sheet.
- (2) screener.
- (3) four modules.

Each module represents essentially a listing of relevant ICD-10 symptoms & characteristics according to the clinical descriptions & diagnostic guidelines of the ICD-10 classification of mental & behavioral disorders. The modules also contain items for recording onset, severity & duration of the syndrome as well as the number of episodes. Each module consists also of a symptom list & lists of states that according to the ICD-10 criteria should be excluded or could be associated with the syndrome. These lists are accompanied by instructions that may help the interviewer in considering other possible syndromes & hence, the use of other modules in the checklist. The user of the ICD-10 symptoms checklist should be familiar with the ICD-10 diagnostic criteria. Then the international diagnostic checklists (IDCL) for ICD-10 were used as complementary tool to the ICD-10 symptoms checklist which provide more specific diagnoses according to ICD-10 criteria. The IDCL are semi structured instruments for clinician assessment & diagnostic criteria, to specify inclusion & exclusion criteria & provide decision rules necessary for the clinician to make specific diagnosis covering the ICD-10 F0toF5 diagnostic categories. IT consists of 32 modules of diagnostic criteria.

c) Data collection

To pretest the instruments used in the research, a pilot study was conducted on fifty dermatological patients of both sexes, they were given the GHQ-28, the Arabic version, copied on papers. The study approved that the questions in the tool were clear & without any ambiguity as well as the response to them was constant. The possible cases who scored positive on the GHQ-28, (nineteen cases), were subjected to the ICD-10 symptoms checklist to confirm the diagnostic criteria according to the ICD-10 system. This tool was used for the first time in Mosul city & due to the unavailability of the Arabic translation for it & before its application to the dermatological patients mentioned above, it was preliminary tested & administered by the researcher & other senior psychiatrist on twenty-five attendees to the psychiatric outpatient in Ibn-Seena teaching hospital in Mosul. The check list assessment was conducted as joint interviews with one psychiatrist acted as interviewer & the other acted as observer. At the end of each interview the observer was allowed to repeat & record in different colored ink his clinical standard those ICD-10 symptoms for which, according to his clinical standard, produced incomplete & ambiguous results. Both the interviewer & the observer alternated their roles randomly & reported their checklist independently for each other. The Kappa for overall agreement between the two clinician on the main ICD-10 diagnosis was 0.82, indicating a good inter-rater reliability of the instrument.

Then collection of the data of the research was performed by the researcher & two other interviewers, one of them was a senior psychiatrist & the other was a general practitioner in psychiatry, from attendees of the dermatology outpatient clinic who responded to the invitation to participate in the research. They were randomly selected & interviewed in a separate room from that used by the dermatologist & before knowing the dermatological diagnosis to avoid bias.

After the informed consent was given by the respondents, socio-demographic data were collected. Then the general health questionnaire version-28 (translated to Arabic language) was submitted to every respondent to fulfill & answer the questions accordingly. The interviewers read the questions to the illiterate respondents & they were sure that those respondents the questions & gave the appropriate responses.

The respondents who were found as possible psychiatric cases on GHQ-28 & 10% of the negative cases on the same tool (selecting one negative case from every ten negative cases on GHQ-28), were submitted to the ICD-10 symptoms checklist version 1.1 to verify the accurate psychiatric diagnosis. The interviewers were preliminarily responsible for asking questions & recording data accurately during the interview, taking into account that the respondents produced information the questions according to the ICD-10symptoms checklist were intended to get & answering any ambiguity & clarifications when necessary.

Then the dermatological diagnoses were given by the senior dermatologists, besides the severity, duration of the disease & its distribution on the body.

d) Statistical analysis

All the data collected were subjected to STATISTICA.99 package for windows & statXact 3.1package for windows, to estimate the chi square value & p value (the statistical significance) of the psychiatric morbidity in dermatological disease, (which was regarded as dependent variables) & different socio-demographic variables, (independent variables), besides calculating the odd ratio with confidence interval 95% for the socio-demographic variables ^[21].

Fisher exact test was used to calculate p value in the religion status variable, while z-test (which is a statistical test used in inference which determine if the difference between sample mean & population mean is sufficiently different as to be statistically significant), was used to calculate the p value in the distribution of psychiatric morbidity among different dermatological diseases from which the respondents were complained of.

RESULTS

a) Prevalence of psychiatric morbidity in dermatological out patients

Three hundred twenty-six participants, who have different dermatological diseases were, invited to participate in the current study. Twenty-six of them didn't complete the current study, as they were non-compliant with the interview, they felt embarrassment, so they were excluded from the study. One hundred twenty-two respondents were considered as possible cases on submitting the general health questionnaire-28 to them as a screening test. (Table1)

Table 1. Psychiatric morbidity in dermatological patient based on GHQ-28 as a screening test

Psychiatric evaluations based on GHQ-28	Positive response (probable cases)		Negative response (non- cases)		Statistical significance
	Number	%	Number	%	
	122	40.6	178	59.3	X ² =10.45 P<0.01

Then, those who were regarded as possible cases on GHQ-28, (122respondents) &10% of those who were judged free of psychiatric symptoms on GHQ-28 (17respondents) were interviewed according to ICD-10 checklists, one hundred twenty-three of them (41%) were proved as actual psychiatric cases & given psychiatric diagnosis according ICD-10 criteria. (Table2)

Table 2 .The actual psychiatric morbidity in dermatological patient based on ICD-10 checklist

Psychiatric evaluations based on ICD-10 checklist (probable cases) screen positive on GHQ-28+10% of the false negative respondents	Cases		Non-cases		Statistical significance
	No.	%	No.	%	
	123	41	177	59	$X^2=9.72$ $P<0.01$

Note: the number of false negative respondents (10%) who were subjected to ICD-10 checklist and were proved as positive cases is multiplied by 10 and added to the number of cases.

b) Socio demographic correlates of the dermatological patients

(1) Age

The younger age groups respondents show higher psychiatric morbidity than the older age groups. Even though, the results of each age group were not significant, although the age group variable has a modest, significant impact on psychiatric morbidity. (Table 3).

(2) Gender

One hundred thirty-nine males & one hundred sixty-one females participated in the study.

Females who had psychiatric disorders outnumbered males patients (57.8% versus 21.6%), which is statistically significant. (Table 3).

(3) Marital status

Separated, divorced, singles, showed the highest psychiatric morbidity in this study (90%, 72.2%, 44.6% consecutively), even though, the psychiatric morbidity in separated, divorced, are significantly high & significantly low in widowed respondents.

The marital status variable has a significant impact on the prevalence of psychiatric morbidity. (Table 3).

(4) Education

More than high school education & high school education respondents had the highest psychiatric morbidity which is significant statistically & it is significantly low in non-educated respondents. Educational status variable has statistically significant impact on prevalence of psychiatric morbidity. (Table 3).

(5) Religion

Most of the people who are resident in Mosul city are Muslims. The highest psychiatric morbidity was found in Muslims (46.2%), followed by that in Christians (26.08%).

Religious status had significant impact on psychiatric morbidity ($P<0.001$, on Fisher Exact test). (Table 3).

(6) Ethnicity

The highest psychiatric morbidity was found in Kurdish respondents followed by that in Arabic respondents (48.08%.47.9%) The results were statistically insignificant. Psychiatric morbidity was low in Shabak ethnicity which was statistically significant ($p<0.001$).

Ethnicity as a variable had a significant impact on the psychiatric morbidity as a whole ($p<0.01$). (Table 3).

(7) Earning regular income

It has an impact on the psychiatric morbidity ($p<0.001$), which was high in those who didn't earn regular income. (Table 3).

(8) Lack of food supply

Those who perceived that had insufficient food supply in quantity or in quality had a significant higher psychiatric morbidity than those who didn't perceive such dilemma, ($p<0.001$) (Table 3).

Table 3. Socio demographic characteristics of the respondents in the study

Socio demographic		Total no.	PM %	OR	95%CI	X^2	P value
Age group	15-34 years old	142	65(45.7%)	1.51	0.9-2.53	2.64	>0.05

	35-54 years old*	106	38(35.8%)	---	---	p>0.05	>0.05
	55-65 years old	52	20(38.5%)	1.12	0.56-2.22		>0.05
sex	Female	161	93 (57.8%)	4.97	2.98-8.28	40.37 P<0.001	<0.001
	Male*	139	30(21.6%)	---	---		<0.001
Material status	Married *	100	36 (36%)	---	---	26.83 P<0.001	>0.05
	Single	121	54 (44.6%)	1.43	0.83-2.47		>0.05
	Divorced	18	13 (72.2%)	4.62	1.52-14.02		<0.01
	Widowed	51	11 (21.5%)	0.49	0.22-1.07		<0.001
	separated	10	9 (90%)	16	1.95-131.4		<0.001
Education	None *	82	17 (20.8%)	---	---	40.37 P<0.001	<0.001
	Primary	117	41(35.05%)	2.06	1.07-3.97		<0.05
	High school	93	58 (62.4%)	6.34	3.21-12.49		0.001
	More than high school	8	7 (87.5%)	26.76	3.08-232.6		<0.01
Religion	Muslim	232	107(46.2%)	3.42	1.11-10.55	P<0.001 Fisher Exact test	<0.001
	Christian	46	12(26.08%)	1.41	0.39-5.07		<0.05
	Yazidi*	20	4 (20%)	---	----		<0.05
	other	2	0 (0)	---	----		>0.05
Ethnicity	Arab	117	56 (47.9%)	5.88	2.14-16.13	17.44 P<0.01	>0.05
	Kurd	80	39 (48.8%)	6.09	2.15-17.21		>0.05
	Turkmen	54	20(37.03%)	3.77	1.26-11.22		>0.05
	Shabak*	37	5 (13.5%)	---	---		<0.001
	Ashur	12	3 (25%)	2.13	0.42-10.68		>0.05
Do you earn a regular income	No	137	78 (56.9%)	3.47	2.14-5.61	26.44 P<0.001	
	Yes*	163	45 (27.5%)	---	-----		
Do you perceive that you and your family have sufficient food							
In quantity	No	75	61 (81.3%)	11.46	5.98-21.95	67.25 P<0.001	
	Yes*	225	62 (27.5%)	---	-----		
In quality	No	97	72 (74.3%)	8.58	4.93-14.95	65.42 P<0.001	
	Yes *	203	51 (25.2%)	---	----		

c) The distribution of psychiatric disorders among dermatological patients

Table (3) shows the actual mental disorders in the dermatological patients in this study, diagnosed according to the ICD-10 checklists.

Generalized anxiety disorders, depression, phobias, post-traumatic stress disorder, formed the majority (36.58%, 29.62%, 9.75%, and 8.13%) successively, while other mental disorders recorded a smaller number. (Table 4).

Table 4. The actual mental disorders in the dermatological patient(+ve psychiatric cases) as diagnosed according to ICD-10 checklist version 1.1

The actual mental disorders	number	%	Statistical significance
Generalized anxiety disorder	45	36.58	P<0.001 (S)
Depression	36	29.62	
Phobias	12	9.75	
Post-traumatic stress disorder	10	8.13	
Alcohol harm use	1	0.8	
Schizophrenia	2	1.62	
Obsessive compulsive disorder	2	1.62	
Somatoform disorders	3	2.43	
Bulimia nervosa	1	0.8	
Agoraphobia with panic attacks	1	0.8	
Anxious personality	3	2.43	
Histrionic personality	1	0.8	
Emotional unstable personality	2	1.62	
Co morbidities	4	3.25	

d) Psychiatric morbidity in different dermatological diseases

Psychiatric morbidity was insignificantly high in eczematous lesions, psoriasis, acne vulgaris in the current study, but is was significantly high in urticaria alopecia areata, warts, &significantly low in dermatophytes infections, scabies, pityriasis rosea. The distribution of psychiatric morbidity among other dermatological diseases, whether high or low were statistically insignificant because of the small, inconclusive numbers of the remainder of dermatological diseases. (Table 5).

Table 5. The distribution of dermatological among the respondents in the study

dermatological disorders	Total number of respondents	Number of psychiatric morbidity	Statistical significance (Z- Test)
Eczema	51	24 (47.05%)	P> 0.05
Psoriasis	40	16 (40%)	P>0.05
Vetiligo	12	7 (58.3%)	P>0.05
Chloasma	10	6 (60%)	P>0.05
Acne vulgarize	37	14 (37.83%)	P>0.05
Warts	22	14 (63.6%)	P<0.05 (S)
Lichen planus	6	3 (50%)	P>0.05
Dermatophytes infections	31	5 (16.21%)	P<0.01 (S)
Alopecia areata	18	12 (66.6%)	P<0.05 (S)
Scabies	15	1 (6.6%)	P<0.01 (S)
Chill blain	18	3 (16.6%)	P<0.01 (S)
Urticaria	7	7 (100%)	P<0.01 (S)
Dermatitis herpiformis	9	4 (44.4%)	P>0.05
Pityriasis rosea	8	0	P<0.05 (S)
Dermatitis artefacta	2	2 (100%)	P>0.05
Delusional parasitosis	1	1 (100%)	P>0.05
Icthyosis	1	1 (100%)	P>0.05
Pimphigus	1	1 (100%)	P>0.05
Cutaneous leishmaniasis	7	2 (28.57%)	P>0.05
Pediculosis	4	0	P>0.05
Total	300	123	

e) Duration of the dermatological diseases

The distribution of psychiatric morbidity among respondents according to the duration of the dermatological diseases increased in direct proportion to the increase of the duration of their durations. It was statistically low in durations of less than one month (23.4%), while it was significantly high in durations more than three months (68.9).

The duration of dermatological diseases had a significant effect on the psychiatric morbidity (p<0.001). (Table 6).

Table 6. The distribution of psychiatric morbidity among respondents according to the duration of the dermatological disorder

Duration of the dermatological disorders	Psychiatric cases	Non-psychiatric cases	Statistical significance
Less than 1 month	28 (23.93%)	89 (76.6/)	P<0.001(s)
1-3 months	42 (36.2%)	74 (63.8)	P>0.05
More than 3 months	53 (68.83%)	24 (31.16%)	P<0.001(s)

P<0.001

f) Severity of dermatological diseases

The distribution of dermatological diseases was decreased in an inverse proportion with the severity of dermatological diseases. The impact of the severity of the dermatological diseases on the psychiatric morbidity was statistically insignificant. (p>0.05). (Table 7).

Table 7. The distribution of psychiatric morbidity among respondents according to the severity of the dermatological diseases

Severity of dermatological diseases	Psychiatric cases	Non-cases	Statistical significance
Mild	58	75	P>0.05(N.S)
moderate	49	67	P>0.05(N.S)
severe	16	35	P>0.05(N.S)

P>0.05

g) Site of the dermatological diseases on the body

h)

The participants whose dermatological diseases were on the exposed parts of the body had a significant psychiatric morbidity (56.3%) than those located on the hidden parts of the body (17.5%), while it was (38.5%) in those lesions sited on both exposed & hidden parts of the body. The impact of the site of the dermatological diseases on the body on the dermatological morbidity was statistically significant (p<0.001). (Table 8).

Table 8. The distribution of psychiatric morbidity among respondents according to the location of the dermatological diseases on the body

The location of the dermatological diseases on the body	Psychiatric cases	Non-cases	Statistical significance
On the exposed parts of the body	65 (65.52%)	50 (43.47%)	P<0.001(s)
On the hidden parts of the body	11 (17.46%)	52 (82.53%)	P<0.001(s)
On both exposed and hidden parts of the body	47 (38.52%)	75 (61.47%)	P>0.05

P<0.001

i) Review of relevant literatures

Table (9) shows a review of similar or relevant literatures, which notified the titles of the researches, tools used for case identification, year of the study & prevalence of psychiatric morbidity in each study.

Table 9. Review of other similar or relevant researches

Author	Title of the research	years of the research	Case identification tool	Psychiatric morbidity
Hughes, et al (9)	Psychiatric symptoms in dermatological patients	1983	GHQ-12	30%
Wessely, et al (10)	The classification of psychiatric morbidity in attenders of dermatology clinic	1989	Self-report measures	40%
Fritzsche, et al (15)	Psychosomatic liaison service in dermatology	2001	Self-rating instrument based on ICD-10 criteria	46%
Sharma N, et al (16)	Comparative study of psychiatric morbidity in dermatological patients	2003	GHQ-H	39%
Hussain A, et al (17)	Prevalence of psychiatric disorders among dermatological patients	2005	GHQ-12	39.1%

DISCUSSION

a. Point prevalence

It has been recognized that some patients presenting with dermatological symptoms, may have underlying psychological problems & that stress & psychological factors may play a role in the course of many skin diseases ^[21]. In the current study, the point prevalence of psychiatric morbidity among respondents complaining of dermatological diseases in dermatology outpatient is 41%, after refining the actual prevalence of psychiatric morbidity in them according to the ICD-10 criteria. My results agree with those of Wessely et al ^[10], Fritzche et al ^[15], Sharma et al ^[16], Hussain A et al ^[17], (40%, 46%, 39%, 39.1% consecutively), while it disagrees with those revealed by Hughes et al (30%) ^[9], Woodruff et al (95 %) ^[11], Gupta M.A (30%) ^[12], Picardi et al (20.6%) ^{[13][14]}. Generally speaking, the results in studies used the general health questionnaire tool of its different versions were approximately comparable with that in the current study. Differences in the sample sizes, methods & tools used for screening & diagnosis as well as different classifications used in other studies might account for the differences in the results ^[22].

The cause of the false negative cases, who didn't respond to the GHQ-28 tool was that, he was proved as a case of schizophrenia according to the ICD-10 criteria, complaining of delusional parasitosis, as the GHQ in its different versions are suitable for non-psychotic respondents only ^[23].

Generalized anxiety state was the main psychiatric disorder that was significantly prevalent among the participants in this study (36.5%). This is probably due to the impact of the skin diseases on the patient's lives, especially if the site of the lesion was on the exposed parts of the body & the associated disfigurement perceived by the patients, as well as the feeling that their social lives were impaired or had work related problems, besides that, most people in our culture tended to consider dermatological diseases as contagious disorders. The result agrees with that of Woodruff (5%) ^[11] less than the result of Jowett's study (61%) ^[24].

Depression was encountered in (29.6%) of the participants, it was more evident in those complained of a long duration dermatological diseases with a bit higher severity. This result disagrees with that in a similar study conducted by Hussein. An in Pakistan in which depression was (17.3%) ^[17], but less than that of the study of Woodruff. A (1997), in which depression was (44%). Gupta. M in 1998 highlighted the importance of recognizing psychiatric morbidity, especially depression, among dermatological patients & indicated that in some instances, even clinically mild to moderate skin diseases can be associated with depression were eczema, psoriasis and acne vulgaris ^[25]. It is important to mention that steroids & antihistamines used in the treatment of skin conditions may play a role in the pathogenesis of anxiety & depression ^[26]. The bad events in Mosul city & bad economic status, might contribute to the complaint of depression & even to the prevalence of post-traumatic stress disorder in these patients & might enfeeble the possibility of the impact of dermatological diseases on the psychic lives of the respondents. Other psychiatric complaints were distributed in different numbers among participants in the research. The following clarifications must be mentioned: -

- 2) 36 patients announced that their psychiatric complaint started before the onset of their dermatological diseases as follows: -
 - (a) Generalized anxiety disorder, 5 cases. Depression, 3 cases. Phobias, 8 cases (all of them complained of simple phobias), alcohol abuse, 1 case. Schizophrenia, 2 cases, one of them complained of delusional parasitosis while the other complained of psoriasis & his mental symptoms were remitted at the time of the interview. Four cases with post-traumatic stress disorder complaint stated that their psychiatric disorder started before the dermatological complaint. A similar claim was obtained from those complained of bulimia nervosa (one female case), agoraphobia with panic attacks (one case), anxious personality (3 cases), histrionic personality (one case), emotional unstable personality (2 patients) (both of them complained of dermatitis artifacta & self-mutilation). Four psychiatric co morbidity cases started a long time before the onset of dermatological diseases (2 cases complained of depression & alcohol harm use, one complained of height phobia with obsessive compulsive disorder, one female patient complained of histrionic personality with depression).
 - (b) One patient complained of somatoform disorder in the form of loss of consciousness during the stressful event before he had skin lesion.
 - (c) These findings were subjective & comparable to those found by Hughes in 1983, (28% of his patients were subjectively complained of psychiatric symptoms preceding the dermatological diseases) ^[9].
- 3) Those patients who complained of obsessive compulsive disorder were excessively concerned with cleanliness, insisting that their complaint started immediately after their complaint of skin lesions.
- 4) Sixty-nine patients announced subjectively that their dermatological diseases were aggravated by psychological stressors, most of them complained of eczema, alopecia areata, acne vulgaris, psoriasis, warts, urticaria. Wessely in 1989 used a self-reporting measures found that 75% of the dermatological patients to have psychiatric morbidity closely related to skin diseases ^[10].

b. The of psychiatric disorders among dermatological diseases

The highest psychiatric morbidity was found in pimples, ichthyosis, & in the dermatological diseases of psychogenic origin (dermatitis artefacta, delusional parasitosis) but the results were insignificant because of the small sample size of each skin disease presented to the interviewers. There were a modest high of psychiatric morbidity in alopecia areata, warts, eczema, psoriasis, acne, urticaria, which were statistically significant in some of them. These diseases are regarded as psycho physiological disorders, which refer to those cases of bona fide skin disorders which are not caused by stress but are simply exacerbated by it ^[27].

c. Duration of the dermatological diseases & psychiatric morbidity

There was a significant, direct relationship between the duration of the dermatological diseases & psychiatric morbidity.

Dean et al, claimed that more psychiatric morbidity was associated with chronic illnesses, while other literatures revealed that psychiatric morbidity correlated more with the prognosis of medical conditions ^[28].

d. Severity of dermatological diseases & psychiatric morbidity

Ironically, the severity of dermatological diseases was inversely correlated with the prevalence of psychiatric morbidity among the respondents in this study. This result may be attributed to the modest high number of mild dermatological diseases who consulted the dermatology clinic at the time of the study.

Gupta et al, mentioned that in some instances, even mild to moderate skin diseases such as non-cystic facial acne can be associated with significant depression & suicidal ideations. Even though, Hughes blamed the severity of skin lesions as a reason for psychiatric manifestations ^[25].

e. Site of the skin lesion & psychiatric morbidity

Participants, who had skin lesions on the exposed parts of the body, had a significant high psychiatric morbidity than those whose skin lesions were on the hidden parts of the body. They perceived their skin lesions disfiguring, with feelings of a social refusal, especially if they were over concerned with their body image, predisposing them to mental disorders.

f. Socio-demographic correlates

Psychiatric morbidity was a bit higher in young age groups than older one, although these findings were statistically insignificant, but the young age groups were at risk of mental disorders.

This is compatible with the study of Robin ^[29], Noorbala et al ^[30], but not with those of Yasamy et al ^[30]. Any disfigurement may cause an impact on the psychosocial life of these age groups, as they are over concerned with their external appearance.

Regarding gender distribution, psychiatric morbidity was significantly higher in women than men; they were over concerned with their body image, especially if the skin lesions were on the exposed parts of the body & caused marked disfigurement. Cultural factors which lead the women to bind to their social roles must not be forgotten as an additional burden on their lives; hence, they will be at more risk of mental disorders. This result agrees with that of Fieldman et al ^[32].

Freeman considered marriage to be a protective factor against mental illnesses. Divorce & separation caused the highest rate of psychiatric morbidity in those participants, because of the social stigma the patients felt in our culture. Singles had high psychiatric morbidity as most of them were young age group. The highest psychiatric morbidity occurred in the highly educated group which may be attributed to their excessive social contacts in the society, besides the work related problems caused by the skin diseases, while non education played as protective factoring such group of patients which might be attributed to a decrease in social contact & underestimation of the significance of their external appearance. Most of the residents in Mosul city were Moslems, Arabic & Kurdish ethnicities who formed the major groups of the attendees to the dermatology out-patient there. The psychiatric morbidity was the highest in those groups in the current study. The bad economical status besides the violence in this city might attribute to the irregular income they earned, which reflected its effect on their psychic lives. It is necessary to mention that there is no rational nor religious discrimination in this city.

The impact on the mental health care must be addressed because approximately half of the dermatological patients in this study proved to have mental disorders.

g. Limitations of the study

- 1) The violence & terrorism & military operations in Mosul city restricted the attendance of most of the dermatological patients to the dermatology clinics

- 2) The study was conducted in a culture setting, where researches were unusual & among people who regarded mental disorders as a big stigma.
- 3) The ICD-10 checklists were the English version & used for the first time in Iraq, besides that this tool hadn't been systematically validated.
- 4) The large number of dermatological disease entities presented in the current study suggested the requirement of a bigger sample size to make the psychiatric morbidity more representative.
- 5) The duration suggested for the research was too short to conduct such study.

RECOMMENDATIONS

- a. Larger sample size than the one used in the current research must be studied in the future, to verify the present findings.
- b. It is preferable to conduct such study on specific dermatological diseases, thought to be correlated with increased psychiatric morbidity.
- c. There is a requirement to translate the ICD-10 checklists to the Arabic language & to study its validity & reliability accordingly.
- d. Psycho cutaneous diseases are complex & patients are difficult to manage. This point out the need for liaison between the specialties of psychiatry & dermatology. Such collaboration will help to alleviate suffering of many patients whose underlying illnesses may not have been clearly identified & appropriately treated

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