

Introduction

Psychoiatric comorbidity with physical diseases is common; it is estimated that between 26.5% and 60% of general medical inpatients suffer psychiatric comorbidity¹⁻⁴. The prevalence and seriousness of psychiatric disorders in the general medical setting are well established⁵⁻⁷, but unfortunately, psychiatric disorders are underestimated and misdiagnosed in the general medical inpatients, by physician. In this study we aim to assess to what extent physicians other than psychiatrists can diagnose accurately psychiatric disorders and give attention to psychological factors which affect medical diseases.

Materials and Methods

This study was conducted in 2007 in King Khalid University Hospital Riyadh, Saudi Arabia, where there is a tertiary care hospital equipped with almost all subspecialties.

The psychiatric consultation service is covered by two adult consultation liaison teams (CLP), one child psychiatry team, and one geriatric psychiatry team; there is a subspecialization consultant as the head of each team; the adult CLP team covers the referrals from any specialty in the hospital for patients aged between 16 and 59 years, while patients below 16 years are cared by the child and adolescent psychiatry team, and patients aged 60 years and above are cared by the geriatric psychiatry team.

A prospective study was done by recruiting all the Referrals made to the adult CLP team as well as geriatric psychiatry team in 2007. Every patient was assessed to identify the discrepancy between initial diagnosis made by the referring team and the final psychiatric diagnosis confirmed by subspecialized certified psychiatrists (i.e. accuracy between initial impression and final diagnosis). We hypothesized that most medical subspecialties would fail in accurately identifying the

comorbid psychiatric disorder; as we assume that most medical staffs are either not trained or at least not exposed enough to the psychiatric field.

We compared the initial impression or reason of referral given by the referring physician to the final diagnosis given by consulted psychiatry teams to assess the accuracy of diagnosis in CLP settings as a ratio of confirmed diagnosis to total initial impression within the same category. We divided psychiatric diagnoses to eight major categories to simplify the statistical analysis and because the referring physicians were not referring for a specific Diagnostic and Statistical Manual of Mental Disorders (DSM) diagnoses but for clinical impression and need to consult, which reflects their basic knowledge and awareness about psychiatry. These diagnostic categories consist of depressive disorders, cognitive disorders, anxiety disorders, psychotic disorders, adjustment disorders, other mood disorders, substance use disorders, and others.

Depressive disorders include the diagnoses of major depressive disorder, bipolar depression, substance-induced, or secondary to general medical condition. In the same way, diagnoses of cognitive disorders include all types of dementia, delirium, and amnesic disorders. Psychotic disorders include primary as well as secondary psychotic disorders.

In case of more than one initial impression, we take the first one, and if there is more than one final diagnosis, we again take the first one which usually constitutes the primary and active clinical diagnosis. Statistically, an exact test was done to compare accurate initial diagnosis between diagnostic categories, and the *p* value was calculated.

Results

Of the 157 patients referred to consultation liaison services from whom we were able to collect data during research period, 105 patients (66.9%) were female, 50 patients

(31.8%) were male, while the gender of 2 patients (1.3%) was unclear in data papers; Mean age was 46.32 with a standard deviation of 18.417

In 74 patients (47.14%) diagnosis was the same between initial impression made by the referring physician and that of consulted consultation liaison teams. However, in 83 patients (52.86%), the initial impression by the referring physician was inaccurate as confirmed by the consultation liaison team. In the final diagnosis group, depressive disorders were the most common as a final diagnosis confirmed by CLP team. As shown in **Table 1**, 31.2% of them had depressive disorders and 12.74% had cognitive disorders.

Thirty-five patients (22.30%) referred to CLP team were found to be normal; however, only two of them were referred for assessment and two for pre transplant evaluation. A total of 31 patients (19.75%) referred with initial impression were found to be normal (**Table 1**).

Ninety-nine patients (63%) were referred by physicians with an initial impression of depressive disorders, of whom only 48 patients (48.48%) were confirmed by the CLP team to have the same initial diagnosis of depressive disorders. However, in the diagnosis of other mood disorders, we found only two cases of bipolar disorder type I; it was similar in initial impression and final diagnosis (**Table 2**).

Most of the cases that were mistaken by the referring physician to have depressive disorders as initial impression were normal (25 cases, 25.25% of initial impressions), and in eight cases (8% of initial impressions) cognitive disorders were diagnosed inaccurately as depressive disorders (**Table 2**).

It is interesting to note that all cases referred with initial impression of cognitive disorders or substance use disorders were confirmed by the CLP team to have the same diagnosis (**Table 2**), but many cases of cognitive disorders (15 cases, 9.6% of total sample) were given wrong initial impression (**Table 2**).

Moreover, there was no initial impression of adjustment disorders made by the referring physician; as a final diagnosis, it was confirmed by the CLP team that 7 patients (4.46% of total sample) had adjustment disorders.

When we conducted an exact test to compare the correct initial impression between depressive disorders, cognitive disorders, anxiety disorders, and psychotic disorders, which form the majority of cases, the incidence of correct diagnosis differed significantly between them ($P=0.0201$, exact test). The percentages of correct diagnoses were 48% for depressive disorders, 100% for cognitive disorders, 85.7% for anxiety disorders, and 69.2% for psychotic disorders.

Table 1: Final psychiatric diagnoses of 157 inpatients confirmed by the consultation liaison team.

Final diagnosis	N	%
Depressive disorders	49	31.2
Cognitive disorders	20	12.74
Anxiety disorders	13	8.28
Psychotic disorders	13	8.28
Adjustment disorders	7	4.46
Other mood disorders	3	1.91
Substance use disorders	2	1.27
Others	15	9.55
Normal	35	22.30
Total	157	100

Table 2: Accuracy of psychiatric diagnosis in consultation liaison setting

Initial impression (N)	Right diagnosis confirmed by CLP team (N)	%	Final diagnosis of remaining patients (N)
Depressive disorders (99)	48	48.48	25 normal, 8 cognitive disorder, 4 schizophrenia, 4 generalized anxiety disorder, 3 adjustment disorder, 3 no diagnosis, 2 head trauma sequel, 1 phobia, 1 cluster B personality disorder
Cognitive disorders (5)	5	100	
Anxiety disorders (7)	6	85.7	1 adjustment disorder
Psychotic disorders (13)	9	69.2	3 delirium, 1 borderline personality
Adjustment disorders (Zero)	–	–	
Other mood disorders (2)	2	100	
Substance use disorder (2)	2	100	
Hypochondriasis (1)	–	–	1 generalized anxiety disorder
Axis II : obsessive-compulsive personality disorder (1)	–	–	1 adjustment disorder
For assessment (3)	–	–	2 normal, 1 bipolar disorder
No reason for referral (6)	–	–	2 normal, 1 agoraphobia, 1 adjustment disorder, 1 MR, 1 no diagnosis
Others (18)	2	11.1	6 normal, 3 delirium, 2 no diagnosis, 1 dementia, 1 denial of illness, 1 depression, 1 personality disorder, 1 adjustment disorder
Total 157		74	83

Discussion

In our study we tried to address the accuracy of psychiatric diagnosis made by other physicians from different specialties; we did not test accuracy according to the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition, Text Revision (DSM IV TR) because physicians other than psychiatrists are unfamiliar with it, and it is not expected that they send referrals with a

psychiatric diagnosis based on DSM IV TR. Therefore, we accepted clinical impression. Though the aim of this study is not to examine other physicians, it sought to determine to what extent other physicians are acquainted with psychiatric diagnoses given the well-established relationship between medical diseases and psychological status^{8, 9}. Psychiatric disorders such as depression can increase the rate of rehospitalization to medical wards¹⁰.

Moreover, we tried to assess the quality of referrals from other specialties, which could be demonstrated by the accuracy of diagnosis they made initially.

Upon reviewing the literature we were able to identify only one similar study published in the psychosomatics journal in 2003 by Dilts. et al¹¹ ; though our study was conducted in developing country(Saudi Arabia)compared to Dilts.et al. study(done in USA)but still there are many similar findings in both studies. For example, right diagnoses made by other physicians and confirmed by the CLP team to be correct from the total sample in our study was 47.14%, while it was 47.10% in Dilts et al's study.

In our study, depressive disorders form most of the initial impressions in about 63%, and in another study¹¹, it represented about 24.28% of total sample. Of the initial impressions, 48.48% were confirmed by the CLP team to be the right diagnosis which is comparable to Dilts et al's study, which found that 53.6% of initial impressions of depressive disorders were the correct diagnosis. Most of the final diagnoses done by the CLP teams in our study and Dilts et al were characterized as depressive disorders, with 31.2% and 28.3%, respectively. In both studies it was observed that when a physician refers patient with a diagnosis of cognitive disorder, the diagnosis was correct, although many cognitive disorders in both studies were misdiagnosed.

It is clear from the study that more than half of the referrals came with wrong diagnoses, which tells us that the knowledge of other physicians about psychiatry is not standard and the caring for the psychological status of patients in general wards is inadequate. This would be reflected in the patients' level of care and an increase in the duration of hospital stay, as documented by other studies ^{12,13,14} . In the sample for instance, many patients with delirium were misdiagnosed to have another psychiatric disorder that may be fatal to them, as it is well-documented that a delirious state has high mortality risk ^{14,15} .Therefore, identifying comorbid psychiatric

disorders is crucial in providing good care to the patients.

At the beginning of analyzing the result we were thinking of considering personality disorders (Axis II) in our diagnostic categories which were not included in other similar studies, to see how accurately other physicians can diagnose it and to what extent they are familiar with it, also to determine if their ability to diagnose differs from other axis I diagnoses; however, when we analyzed the sample data, we found only one case diagnosed as a personality disorder (obsessive-compulsive personality disorder) as an initial impression, and three cases diagnosed as personality disorders in the final diagnosis by the CLP team. The explanation for this may be that the diagnosis of personality disorder is related to ongoing relational problems with a patient, which does not usually occur in medical settings where physicians often focus more on physical complaints and consulted psychiatrists would limit their primary clinical diagnoses mostly on Axis I diagnosis even if there is underlying personality pathology.

Our study is a prospective and the first of its kind on this topic. Other studies on this topic are few and of a retrospective nature. Nevertheless, we can still point out some limitations to this study: the study sample is relatively small and it is a one-centre study so its result may not apt for generalization .It did not rely on DSM IV TR in diagnosing patients, and the authors took only the first diagnoses in the initial impression and the final diagnoses, but the research was conducted as recommended by other studies on the topic, which are relatively few to be able to draw comparisons from the results. In addition, we did not take into account the differences in the timing of a consult related to admission date and subspecialty of referring teams.

In conclusion, there is a low accuracy in diagnosing psychiatric illness in medically ill inpatients. The most common psychiatric disorder in medically ill inpatients is depressive disorders, with an accurate diagnosis in almost half of the patients.

Diagnoses of cognitive disorders or

substance abuse by physicians other than psychiatrists are 100% accurate, but misdiagnosis of cognitive disorders is common and they are easily mistaking them for other psychiatric diagnoses such as depression.

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