Timing of Referral to Consultation-liaison Psychiatry

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Abstract:

Objective: The purpose of this study was to examine the factors affecting the timing of psychiatric consultations and the impact of timing on length of hospital stay. It also assessed the relationships between the timing of consultations and some clinical factors.

Methods: 264 adult patients consecutively referred to the psychiatric C-L service at King Khaled University Hospital in Riyadh were prospectively included in 2004. The following information was recorded for each consultation: patient demographic characteristics, date of admission, date of consultation, date of discharge, total days of stay, specialty service requesting the consultation, reason for referral given by the referring physician, and DSM-IV diagnosis based on the consultation interview.

Results: Earlier consultations significantly predicted shorter lengths of stay. Delayed consultations were seen with female patients, obstetrics/gynecology ward admission, patients perceived by their treating teams as having anxiety disorders or substance abuse, and psychiatric diagnoses of anxiety or bipolar affective disorder.

Conclusion: Timing of referral is a crucial variable for the effectiveness of psychiatric intervention in medical settings. Early detection strategies for high-risk patients with whom delayed consultation may occur, and increasing the awareness of nonpsychiatric physicians about the importance of timing of referral are very important for a better and cost-effective patient care. Further studies are also needed in this line of research.

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Introduction

Psychiatric consultation-liaison (C-L) service receives consultations from different specialties and sees patients with a high prevalence of psychiatric diagnoses. Approximately 27% of patients admitted to medical wards have significant psychiatric disturbances fulfilling the DSM-IV criteria. [1]

It has often been demonstrated that patients referred to psychiatric C-L services can be described as complex and suffering from multiple somatic and psychosocial comorbidities with an increased level of medical care utilization. [2;3]

The timing of psychiatric consultation results from the interaction of multiple factors, such as the characteristics of patients, the background of nonpsychiatric staff about psychiatric disorders, the psychiatric diagnosis, and other factors. Factors that may influence the timing of psychiatric consultation are discussed by de Jonge et al.[2] They reported that patients who are prone to late referrals are older and suffer from delirium or a mood disorder. Handrinos et al. described that the diagnosis of personality disorder predicted an earlier referral, and depression predicted a later referral. [4]

Several studies have reported the relationship of the timing of consultation to patients' outcomes. [2,4]

Earlier consultations were associated with a shorter time till discharge. [3,5,6] Delayed psychiatric consultation was associated with a longer length of stay (LOS) [7] Even when there was control over the medical condition, the psychiatric reason for referral and diagnosis, and the interventions recommended, the timing of the psychiatric consultation predicted LOS. This suggests that a more timely psychiatric consultation could potentially improve outcomes and cost. [7]

However, several studies demonstrated that only a few of psychiatric comorbid patients are referred to C-L psychiatry, and most of the patients are referred late in the process of hospitalization. [2] Factors associated with the timing of psychiatric referral have been investigated by several studies. [4;5;7] This study reexamines factors affecting the timing of psychiatric consultation.

Methods

The study prospectively included a series of 264 adult patients consecutively referred between January and September 2004 to the psychiatric C-L service at King Khaled University Hospital in Riyadh, which is a general hospital of 800-bed capacity. The consecutive consultations were performed by a team including a consultant psychiatrist and psychiatric residents and diagnosis was according to the diagnostic and statistical manual of mental disorders, forth edition DSM-IV.

The following information was recorded for each consultation: patient demographic characteristics, date of admission, date of consultation, date of discharge, total days of stay, specialty service requesting the consultation, reason for referral given by the referring physician, and DSM-IV diagnosis based on the consultation interview. The specialty services requesting the consultations were divided into five groups: medicine, surgery, intensive care, obstetrics and gynecology and others.

Reasons for referrals were classified into ten categories:

(1) depression, (2) behavioral problems, (3) cognitive impairment, (4) anxiety, (5) psychosis, (6) patients who are known to have psychiatric problems or are on psychotropic medications and need to be reassessed, (7) uncooperative patients, (8) substance abuse or dependency, (9) suicidal ideation and/or suicidal behavior, and (10) others.

To assess the timing of the referral, it would be inaccurate to study merely the number of days from admission to consultation, because this number would be confounded by the LOS itself. For example, patients who are in the hospital longer could potentially receive their psychiatric consultations later. For this reason, several investigators have suggested transforming the timing of referral into one adjusted for the LOS, using the following formula [3;4;6]

Referral time = log (numbers of days from admission to consult)/log (LOS).

With this formula, it is the percentage of hospital stay occurring before the consultation, rather than the absolute number of days that is used to indicate the timing of consultation.

Statistical Analysis

To examine the relationship between referral time and LOS, the natural logarithmic transformations were calculated to obtain approximately normal distributions because both variables were skewed. To investigate the association of referral time with LOS,

background characteristics, source of referral, reason for referral, and DSM-IV psychiatric diagnoses, univariate and stepwise multiple regression analyses were used.

Results

Table (1) summarizes the background characteristics of the patients. Approximately 64.8% of the patients were females. The mean length of stay for all patients receiving the psychiatric consultation was 19 days; median number of days from admission to consultation was 10. More than half of the patients were referred on days 1 to 4 (11.8% on day 1, 19.8% on day 2, 9.9% on day 3, and 11.4% on day 4), 29.9% on Days 5 to 12, and 17.2% after day 12. Forty-five percent of consultations were from medicine followed by surgery (25.3%). Evaluation of depression was the reason for referral in one-third of the total number of consultations, whereas suspected substance abuse represented only 1.1% (the least) (Table 2). Mood disorders were diagnosed in 27.6%, whereas 20.6% of the referred patients were not diagnosed with any psychiatric disorder (Table 3).

Table (1). Background characteristics of the patients.

Background characteristics of the patients	
Age	Mean+_SD 35 +_ 11.2
	Median 34
Gender	
Men	35.2% (92)
Women	64.8% (166)
Time till referral, in days	
1 to 4	52.9%
5 to 12	29.9%
after 12	17.2%
Length of stay, in days	
Mean	19
Referring service (unit)	
Medicine	45% (119)
Surgery	25.3% (67)
Intensive care	5.7% (15)
Ob/Gyn	21.3% (56)
Others	2.7% (7)

Table (2). Reasons for Referral.

Reason for Referral	Percentage (n)
Depression	32.7 (86)
Behavioral Problem	13.7 (36)
Cognitive Impairment	3.8 (10)
Anxiety	9.5 (25)
Psychosis	1.9 (5)
Known Psych. Pt.	13 (34)
Uncooperation	2.3(6)
Others	19.0 (50)
Suicidal Behavior	3.0 (8)
Substance use	1.1 (3)
Total	100.0

Table (3). Psychiatric diagnosis based on DSM-IV.

Psychiatric diagnosis based on DSM-IV	Percentage (n)
Depression	21.3 (54)
BAD	6.3 (16)
Psychosis	3.6 (9)
Substance related dis.	3.2 (8)
Adjustment dis.	7.1 (18)
Anxiety dis.	11.9 (30)
Delirium	9 (23)
Personality	5.5 (14)
No Dx	20.6 (52)
Others	11.5 (29)
Total	100.0

Univariate regression analysis showed that referral time correlated with LOS (95% CI, 0.64 to 0.75;P=0.0001), accounting for 22% of the variation in the LOS, thus, indicating that the earlier consultations predicted a shorter LOS (Table 4). Using the same type of analysis, referral times were found to be delayed with female patients, obstetrics/gynecology ward admission, patients perceived by their treating teams as having anxiety disorders or substance abuse, and psychiatric diagnoses of anxiety or bipolar affective disorder (BAD). On the other hand, patients in surgical wards and those diagnosed with delirium had significantly shorter referral times.

Stepwise multiple regression analysis revealed that only three factors, in addition to LOS, continued to have correlation with referral time (P = 0.0000), accounting for 13% of the variance (Table 5).

Discussion

The findings of this study confirm the correlation between the timing of psychiatric referral and LOS of patients in medical setting. Delayed psychiatric consultation remains associated with longer LOS and this association has been reported by several studies worldwide [2,;6;7]

Moreover, these results suggest that some factors in clinical practice can be identified to predict delayed referral to psychiatry. Such factors include female gender, obstetrics/gynecology ward admission, those patients with a perceived impression by the treating team as having anxiety or substance abuse, and patients with psychiatric diagnosis of anxiety or bipolar affective disorder. It is worth noting that some of these factors have been reported in similar studies as risk factors for delayed referral but others have not. Kishi et al. found that women are at a greater risk for delayed psychiatric referral. [7] Gender differences in consultations have been reported in three different settings in which men were referred more often [8-10] There is no easily identifiable explanation why female patients have delayed consultations.

Regarding the source of referral, this study showed that obstetrics/gynecology ward admission predicts a delayed referral, whereas surgical ward admission predicts shorter referral time. Interestingly, Kishi et al. [7] found that surgical ward admission predicts delayed referral. However, Handrinos et al. have not found any bearing of source of referral on timing of referral. [4] Another interesting finding is that anxiety disorders are associated with delayed referral, which is inconsistent with what has been reported by de Jonge et al. [2] Suspected substance abuse by the treating teams predicted delayed referral in this study. However, psychiatric diagnosis of substance abuse did not show significant correlation with timing of referral, a finding that raises a question about the accuracy of the impression made by the treating teams as a reason for referral.

The correlation between bipolar affective disorder and late referral is consistent with what is known about such a correlation with mood disorders in general [2] [7] but that correlation has not been found in this study for depressed patients. Surprisingly, contrary to the known association between delirium and delayed referral [2] [7], delirious patients in this study tended to have shorter referral times.

Table (4). Univariate regression analysis of factors affecting referral to C-L psychiatry service.

Variable	Coef.	P	95% Conf. Interval
LOS	.69	0.0001	0.64 to 0.75
Ob/Gyn	.26	0.000	0.164 to 0.373
Surgery	-.14	0.006	-0.244 to -0.041
Diagnosis of anxiety	.18	0.011	0.041 to 0.321
Anxiety as a reason for ref	.16	0.028	0.0184 to 0.319
BAD	.20	0.035	0.015 to 0.400
Delirium	-.17	0.033	-0.343 to -0.014
Female gender	.19	0.041	0.007 to 0.378
Substance abuse as a reason for ref	.34	0.041	0.013 to 0.676

Table (5). Stepwise multiple regression analysis of factors affecting referral to C-L psychiatry service.

Variable	Coef.	95% Conf. Interval	P
Ob/Gyn admission	.262	0.156 to 0.368	0.000
Subs Abuse as a reason for ref	.369	0.054 to 0.683	0.022
BAD	.192	0.002 to 0.382	0.047

In general, these results confirm some results of other studies and contradict others. Nevertheless, other studies do not come up with a consensus about factors affecting the timing of referral. Rather, those studies investigated the impact of such factors in different settings with different methodologies. Thus, one has to consider all these issues, including the cultural aspects and different patterns of practice before one generalizes the results.

Study Limitations

There are some methodological limitations in this study. First, standardized psychiatric scales and structured clinical interviews were not used in this study. Second, the severity of physical illness and its effect on LOS and timing of referral could not be measured in this study. Third, the accuracy of psychiatric diagnosis compared with the reasons for referrals was not considered as it was noted with substance abuse when that was suspected by the treating teams.

Conclusion

Timing of referral is a crucial variable for the effectiveness of a C-L psychiatric intervention. Determining guidelines for the optimal timing of referral to C-L psychiatry is a logical goal because delayed referral is associated with longer hospital stay.

Early detection strategies for high-risk patients with whom delayed consultation may occur, and increasing the awareness of nonpsychiatric physicians about the importance of timing of referral are very important for a better and cost-effective patient care.

Further studies are also needed in this line of research.

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