Establishing a consultation–liaison psychiatry service

Impact on clinical indices

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ABSTRACT

Objectives: To show prospectively the impact of establishing a consultation-liaison (C/L) psychiatry model on the consultation clinical indices.

Methods: A structured, organized model of C/L psychiatry was established in 1990 at King Khalid University Hospital, Riyadh, Kingdom of Saudi Arabia and all clinical indices of the psychiatric consultations were compared prospectively over the first 3 years after January 1990 with those over the previous 2 years retrospectively before January 1990.

Results: Three hundred and two patients were referred over 3 years after January 1990, group A and 99 patients were referred over the 2 years before January 1990, group B and the male to female ratio were similar in both groups 1:1.99 and 1:2.1. Referred cases were found more to be females, married and living in urban areas and referred from the Department of Medicine. Positive influences of establishing the C/L service were; nearly double rate of referral, more selectivity of cases, more referred cases for assessment of competence and with past psychiatric history, and more patients referred with informed consent. Depressive disorder was more common in both groups.

Conclusion: A well structured C/L psychiatry model, with clearly defined aims, has had a definite positive impact on the clinical indices of the psychiatric consultations promoting close cooperation for the excellence of patient care. This opens room for future research to explore specific developments in proposed models of C/L psychiatry.

Neurosciences 2004; Vol. 9 (4): 281-286

Numerous studies described the clinical and referral indices of consultation-liaison (C/L) psychiatry over past decades whether retrospectively or prospectively.[1-10] This has led researchers to suggest different models for a C/L service that would fulfill the aims of such services at all levels. The first is the referring consultant's (consultee) needs, second, the patient treatment satisfaction and third, the psychiatrist's (consultant's) expectations from consultees.[11-14] All leading to better education and training, a higher quality of care, better cost effectiveness and to raise public awareness of psychiatry.[15-21] A model that is supposed to achieve these goals has not yet been crystallized, hence, different experiences of C/L services are still documented in different countries and comparable findings are explored.[22-27] Few studies investigated the impact of different models

on the outcome of the service and its fulfillment of these goals,[23,25,26] and no such studies report the experience in Arab countries and especially in the Kingdom of Saudi Arabia (KSA). This paper is a prospective evaluation of the impact of establishing a C/L psychiatric services model on the clinical indices of consultation over a 3 year period after the service establishment in a teaching hospital in Riyadh, KSA compared to the same retrospective clinical indices over the 2 years prior to the service establishment.

Methods. This study was conducted at King Khalid University Hospital (KKUH), which is the largest of the 2 university hospitals of the King Saud University in Riyadh, KSA. King Khalid University Hospital is a 600-bedded general hospital for all medical specialties except ophthalmology and otolaryngology, which are in the old university hospital (King Abdul-Aziz University Hospital). King Khalid University Hospital was established in 1980 and accepts mostly Saudi patients through its large primary care outpatient department and is regarded as the second main hospital for the community in Riyadh after the Ministry of Health main hospital and being run by the Medical College, it is preferred by many people. Therefore, patients admitted to this hospital generally represent all ranges of social classes and occupations in the city of Riyadh. Consultant-staff working at KKUH exceeds 97 in all specialties and approximately 35% are Saudis, qualified mostly from Western countries, United Kingdom, Germany, United States and Canada. This hospital has 2 psychiatric wards of 23 beds and a very busy psychiatric outpatient clinic currently run by 8 Saudi consultants, however, at the time of the study they were only 5 of which 2 were Saudi. Before January 1990, the referrals from non-psychiatric wards were dealt with as any other consultation from different departments and were referred by the general hospital referral form where it will be listed in a registry book by the department secretary using the file number and the referring department and then directed to the resident or registrar on call where he will see the patient and write his assessment and suggestions in the file and only difficult cases would be discussed or assessed by the consultant psychiatrist. In January 1990 a structured model of C/L psychiatry service was established with a full-time consultant, a senior registrar and 2 trainee residents one senior and one junior. The aims of the model were shared and joint service between consultants and consultees in establishing diagnosis and planning and implementing management of referred cases. Also, educational training and support to other staff were essential aims. A clear policy was set for referral and actions including weekly consultant rounds and

shared discussions with consultees team members with regular follow-up of patients and agreement on discharge and future follow up. Each patient had detailed typed psychiatric notes with final DSM-III-R diagnosis and differential diagnoses whether physical or psychiatric and the management plan. Due to the system in KKUH of separate medical and surgical intensive care units (ICU) with consultants supervising these patients in the ICU, we did not identify ICU referrals and included them with medicine and surgery patients, accordingly. In some interesting cases, the psychiatry team will prepare a short review of the literature, which will be presented in the round, and the referring team members will be invited to attend. Also, the C/L team had regular activity in the medicine department to present cases, with further infrequent similar activities in other departments; namely, obstetrics and gynecology, surgery and pediatrics. All the above policies were circulated officially to all departments announcing the start of the service. All information needed for sociodemographic data and clinical indices were structured in a data collection form to be completed for all patients referred for the 3 years following service establishment, under the supervision of the senior registrar and the consultant. The same form was completed for all patients from the registry book at the department referred for psychiatric consultations retrospectively for the 2 years prior to January 1990 and comparison in all data parameters are presented using the Stat Pac gold statistical analysis package.

Results. Three hundred and two patients were referred over 3 years from January 1990 (group A) and ninety-nine patients were referred over 2 years before January 1990 (group B). The female to male ratio in both groups is similar and Saudis were 253, 83.8% for group A and 75, 75.8% in group B. Married patients formed the majority in both groups, 183, 60.6% group A and 58, 58.6% group B. Illiterate patients were more in both groups: group A, 121, 40.1% and group B 36, 36.4%. Unemployed and housewives also formed the majority in both groups: A 225, 74.5% and B 71, 71.7%. Most patients in both groups came from urban residence: A 289, 95.7% and B 94, 94.9%. The total referral rate for group A is 0.39% and for group B 0.2%. The mean age of group A is 35.28 ± 17.884 and for group B is 37.04 ± 17.812 with the same range for both (4-84) years. Suicidal behavior and alcohol and drug abuse history was similar in both groups. **Table 1** shows details of sociodemographic data. The majority of referrals came from the medicine department, and the most common reason for referrals was for psychiatric evaluation. Time lag of referral which is the time between admission and writing the consultation

Table 1 - Demographic data for group A and B.

Variable	Group A		Group B		Remarks
	n	(%)	n	(%)	
Age: Mean	35.28 ± 17.884		37.04 ± 17.812		NS
4 – 15	25	(8.3)	5	(5.1)	
16 – 30	119	(39.4)	57	(57.5)	
31 – 50	101	(33.4)	24	(24.2)	
51 – 60	24	(8)	5	(5.1)	
61 – 84	33	(10.9)	8	(8.1)	
	302	**(100)**	**99**	**(100)**	
Gender Male	101	(33.4)	32	(32.3)	Ratio 1:1.99
Female	201	(66.6)	67	(67.7)	Ratio 1:2.1
Nationality					NS
Saudi	253	(83.8)	75	(75.8)	
Non-Saudi	49	(16.2)	24	(24.2)	
Marital Status					NS
Single	92	(30.5)	34	(34.4)	
Married	183	(60.6)	58	(58.6)	
Divorced	14	(4.6)	3	(3)	
Separated	3	(0.99)	2	(2)	
Widow	10	(3.3)	2	(2)	
Education					NS
Illiterate	121	(40.1)	36	(36.4)	
Primary school	47	(15.6)	19	(19.2)	
Intermediate	49	(16.2)	12	(12.1)	
Secondary	35	(11.6)	17	(17.1)	
University	43	(14.2)	13	(13.1)	
Higher	7	(2.3)	2	(2.1)	
Occupation					NS
Civilian	74	(24.5)	27	(27.3)	
Self-employed	3	(1)	1	(1)	
Unemployed/Housewives	225	(74.5)	71	(71.7)	
Residence					NS
Urban	289	(95.7)	94	(94.9)	
Rural	13	(4.3)	5	(5.1)	
Suicidal behavior	34	(11.3)	15	(15.2)	NS
Alcohol & drug history	21	(7)	12	(12.1)	NS
NS - not significant					

form to psychiatry was unexpectedly larger for group A mean 7.4 ± 15.38 than for group B mean 4.9 ± 7.823 days and was marginally significant t = 1.572 with *p*=0.058. Patients informed about referral were far greater in group A, 59, 19.5% than in group B, 1, 1% and this was statistically significant X^2= 4.215, *p*=0.05. However, patients who accepted psychiatric treatment were nearly similar in both groups A, 262, 86.8%, B, 87, 87.9%. Discharge of patients was agreed with the consultant in more patients in group A, 63, 20.9% than in group B, 2, 2% and that was highly significant X^2=10.237, *p*=0.04. **Table 2** presents details of clinical and referral indices. There was a spectrum of DSM-III-R psychiatric diagnoses in both groups, but depressive disorders were the most common: A, 167, 55.3%, B, 40, 40.4%. **Table 3** presents details of other diagnoses.

Discussion. This study is an example of prospective research, where the influence of administrative setting, organization and planned commitment in a C/L model is explored on the clinical indices of the relationship between consultees and consultants.[12] Generally, this report presents evidence that socio-demographic characteristics of C/L psychiatry patients are similar in our sample to other worldwide reports.[4,6,8,14] Married, adult females, coming from urban residence and referred more from the department of medicine for psychiatric evaluation is the usual pattern. This is consistent with community surveys of common psychiatric disorders, where depression, generalized anxiety disorders and adjustment disorder are more common in married females living inside a crowded city environment.[28] Excess referral from the department of medicine, may be explained by the more beds for medicine, the close

Table 2 - Clinical and referral indices for group A and B.

Variable	Group A n	Group A (%)	Group B n	Group B (%)	Remarks
Total referral rate	302	(0.39)	99	(0.2)	
Referral rate by year	1991	(0.37)	1989	(0.19)	
	1992	(0.39)	1990	(0.21)	
	1992	(0.4)	-	-	
Referral source					*p*<0.05
Medicine	179	(59.3)	66	(66.7)	
Obstetrics & Gynecology	43	(14.2)	14	(14.2)	
Surgery	47	(15.6)	13	(13.1)	
Pediatrics	14	(4.6)	4	(4)	
Orthopedics	17	(5.6)	1	(1)	
Dermatology	2	(0.7)	1	(1)	
Reason for referral					
Psychiatric evaluation	239	(79.1)	78	(78.8)	*p*<0.05
Assessment of competence	7	(2.3)	1	(1)	*p*<0.05
Help in management	4	(1.3)	4	(4.05)	NS
Help in diagnosis	2	(0.7)	3	(4)	NS
Past psychiatric history	31	(10.3)	4	(4.05)	*p*<0.05
Drug overdose	19	(6.3)	9	(9.1)	*p*<0.05
Time Lag					
Mean	7.4 ± 15.38		4.9 ± 7.823		*p*=0.058
Range	0-236 days		0-61 days		*p*<0.05
Informed referral	59	(19.5)	1	1	*p*<0.05
Discharge					
Agreed	63	(20.9)	2	(2)	*p*<0.04
Notified	219	(72.5)	82	(82.8)	NS
Not-notified	20	(6.6)	15	(15.2)	NS
Patient accepted treatment	262	(86.8)	87	(87.4)	NS

NS - not significant

Table 3 - DSM-III-R Psychiatric diagnoses in both groups.

Diagnoses	Group A n	Group A (%)	Group B n	Group B (%)
Schizophrenia	12	(4)	7	(7.1)
Other psychoses	9	(3)	13	(13.1)
Bipolar, affective, manic	0		4	(4)
Depressive disorder	167	(55.3)	40	(40.4)
Drug abuse	7	(2.3)	4	(4)
Somatoform disorders	24	(8)	8	(8.1)
Generalized anxiety disorder	19	(6.3)	6	(6.1)
Panic disorder	4	(1.3)	0	(0)
Phobic disorder	5	(1.7)	0	(0)
Delirium	17	(5.6)	2	(2)
Dementia	12	(4)	4	(4)
Anorexia nervosa	3	(1)	1	(1)
Mental retardation	7	(2.3)	2	(2)
Adjustment disorder	4	(1.3)	4	(4)
Personality disorder	12	(3.9)	2	(2)
Epilepsy	0	(0)	2	(2)
Total	**302**	**(100)**	**99**	**100**

DSM-III-R - Diagnostic and Statistical Manual [of mental disorders], Third Edition, Revised

interaction of medicine subspecialties with psychiatry and that psychiatric morbidity is closely associated with neurology, nephrology, cardiology, endocrinology and gastroenterology which are all medicine subspecialties.[3,7] The discrepancy of the number of referred patients in both groups from pediatrics from under aged 15 years, is resulting from the fact that an excess of under 15-year-old patients were referred from the departments of pediatric surgery and the pediatric orthopedics.

Comparing both groups, which is the essence of the study, showed some remarkable observations. The total referral rate had nearly doubled from 0.2% to 0.39% although, the increase year by year is very minimal in both groups. This suggests that there was a real increase in referral rate because of service establishment instead of progressive expected increase over the years. This can be due to the psychological enthusiasm; better communication and defining the frame of the consultation setting by establishing the service.[11] The other finding was that this increase in referral rate was the pattern from all departments which was also statistically significant at the level of each department. Despite smaller numbers, some departments showed dramatic increase of rate for referral, namely, obstetric and gynecology and orthopedics.[6] For group B being retrospective, the exact referral rate was determined using the registry book of the department which made comparison reliable.

Reason for referrals analysis showed that beside supporting previous C/L literature findings, the number of cases referred for assessment of competence, presence of past psychiatric history and assessment for drug overdose had increased remarkably with a $p>0.05$. The increase of assessment of competence may be due to actual increase of cases needing such assessment or increase awareness of consultees to their ethical and legal issues as an effect of establishing the service.[29,30] The extra increase of referred cases having past psychiatric history may also be explained by raised sensitivity and awareness to psychiatric morbidity as an influence of the service establishment.[31] Increased drug overdose may reflect a change in the Saudi culture towards suicidal and deliberate self-harm behavior rather than the effect of the service establishment.[32]

Surprisingly, the time lag of referral had increased to one and a half more than before service establishment and was marginally statistically significant. At face value this may be taken as a negative attitude of referral of psychiatric cases, but on the other hand it may indicate a more selective attitude of consultees to cases for referrals where more work and investigation is carried out before any case is referred, and this caused the delayed time lag. This is also supported by the other finding that more than 75% of cases in both groups were referred for psychiatric evaluation of a suspected psychiatric disorder. Further, analysis of time lag shows that in both groups the time lag range is similar to other studies but the percentage of cases referred in group A is approximately 70% in the first 5 days which is higher than that in group B and previous studies.[33,34] This can also be explained positively that establishing the service not only improved selection of referral, but also prompt and active actions to refer more cases in the first 5 days after admission.

Another highly positive effect of the service establishment was the highly significant finding that more patients were informed about referral and this definitely is a reflection of better communication and concern about psychiatric consultations and this was not associated with change in treatment acceptance by patients which showed that the attitude of patients towards the psychiatric consultation in Saudis is positive and was the same before and after the service.[2,3,7] Discharge of patients agreed with the psychiatrist had improved greatly after the service establishment and reflects improved communication with psychiatrists and more positive attitude to psychiatry.[16,17,31]

Depressive disorders are the most common psychiatric diagnosis in both groups and more in group A, which is consistent with other previous reports,[3,6,7] but generally, psychiatric diagnoses were similar in rates in both groups and there was no specific change to referral of any single diagnosis. The finding that all patients referred had a form of a psychiatric disorder, may reflect that consultees detection ability of psychiatric cases is high or they only refer severe unavoidable cases and avoid referring minor or doubtful cases under the effect of the cultural stigma of psychiatric consultations.[2,7,32] The other finding in diagnostic profile that there were no organic psychiatric disorders other than delirium, dementia and drug abuse, may be explained by consultees viewing any psychiatric disturbance in the context of a clearly diagnosed general medical condition to be a sequelae of the physical disease and does not warrant referral to psychiatry.[25,27] As this paper is concerned with clinical indices of referral and due to the small numbers in each specialty, the medical diagnoses were not analyzed as they represented a wide spectrum in all specialties and it was difficult to draw any associations between medical and psychiatric diagnoses.

This study represents reasonable evidence that establishing an organized, well-structured model of C/L psychiatry service where close, joint and continuous care is developed had a definitely positive and worthy effect on referral indices. These were, better detection of psychiatric conditions,[35] increased referral rate, better case selection and work up for referral and better communication of consultants and consultees.

Further research to explore areas of development of the model of C/L psychiatry is greatly needed to positively change other setting indices of consultation such as a) improving the consultee management ability of common psychiatric disorders; namely, depression and generalized anxiety disorders, b) increase selectivity of referred cases in relation to time lag of referral, c) increase referred cases for help in diagnosis and management and d) other areas aimed at for the excellence of patient care.

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