

Review

Outcomes of Referral to Consultation Liaison Psychiatry on In-Patients

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Abstract

There is an increased awareness on mental health and psychiatric disorders, yet there are still unacknowledged, unmet mental health needs among patients that require admission for various medical and surgical illnesses. Consultation Liaison Psychiatry (CLP) is a specialty of psychiatry that is a multidisciplinary, collaborative delivery of service offered to patients hospitalized in general facilities. The purpose of this review is to discuss the impact and outcomes of CLP referrals on in-patients in general hospitals. An extensive research was conducted from online databases such as Google Scholar and PubMed. All studies conducted on in-patients including adults, pediatric and geriatric populations from the last ten years were included in our review. Patients undergoing CLP referrals have a reduced length of stay at the hospital in both adults and children and elderly patients 75 years and older, a significant decrease in the number of unplanned readmissions, reduced healthcare expenses and an overall improved quality of life with high social functioning when returning home.

Keywords: consultation-liaison psychiatry, outcomes, length of stay, readmissions, in-patients

Introduction

The World Health Organization defines health as not merely the absence of disease, but a state of complete physical, mental and social well-being (1). Physical disease and mental illness are often interlinked and not always mutually exclusive. There is a huge gap in addressing and acknowledging the importance of mental health and manifestations of mental disorders or psychiatric symptoms in organic diseases and pathologies. Consultation-Liaison Psychiatry can be

broken down to define each of its compounded words, 'Consultation' is seeking advice and guidance from an expert to discuss the best possible solution or alternatives for a given problem; 'Liaison' is a collaboration between teams or departments to achieve common objectives and solutions. Therefore, Consultation-Liaison Psychiatry (CLP) also known as Psychosomatic medicine can be defined as a sub-specialty of psychiatry which provides psychiatric care to in-patients admitted in non-psychiatric settings, for medical diseases or co-morbidities or surgical diagnoses in general hospitals (1,

2) It is a holistic approach of management and treatment utilizing the bio-psycho-social model of health, wellness and disease (1).

Co-morbid psychiatric disorders are estimated to be prevalent in 30% of patients admitted in general hospitals (3). Psychiatric comorbidities in medical or surgical illnesses are associated with increased length of hospital stay, poor outcomes, inflated health care costs, functional disability, higher number of readmissions and increased rates of mortality (4, 5). Some of the common departments that have increased rates of referrals for CLP are the department of emergency, neurosurgery, internal medicine, and oncology (6). Psychiatric disorders requiring referral to CLP are delirium, mood disorders, and neurocognitive disorders, depression, poisoning as attempted suicide, confusion (6, 7). The referral rate of medically and surgically ill patients for CLP services is between 0.72-6% (8).

Although remarkable progress has been made in the west regarding multidisciplinary care in consultants liaising with psychiatrists, there is still a large gap especially in developing countries, and psychiatric services are still highly underutilized in general hospital settings (9, 10). Literature is replete with the effects of timely, rapid and methodical CLP referrals such as reduced length of stay, reduced number of unplanned readmissions, higher cost savings, improved quality of life for patients. The purpose of this review is to discuss the impact and outcomes of CLP referrals on in-patients.

Discussion

An important outcome measure associated with CLP service is Length of Stay (LOS) (11). Many studies have analyzed the association between the timing of CLP referral in patients impacting the length of stay. The mean LOS for patients receiving consultation for psychiatry was 19 days, whereas the mean number of days from the time since admission to the point of consultation was 10 days. Furthermore, the time of referral correlated with LOS indicates that earlier consultations lead to a shorter LOS. These facts are supported by a study in Australia by Wood et al. which evaluated the impact of timely CLP referral to LOS which was considered from the time of admission to contact with the CLP service also known as the *Referral Lag* (REFLAG) and the REFLAG's proportion of LOS (REFLAG/LOS). The study elucidated a significant association between early CLP referrals and REFLAG, however, the LOS for younger patients receiving CLP referrals was shorter as compared to older patients (6).

Sockalingam et al. conducted a study on the utilization of CLP services among in-patients and its association with LOS and a variable of *Time to Referral* over a period of 12 months in two Canadian hospitals. A total of 814 patients were included in the study, where the median LOS was 12 days (interquartile range of 4-28 days) and the median *Time to Referral* was 3 days (interquartile range of 1.9 days). A bivariate analysis revealed a strong positive correlation between LOS and Time to Referral, however certain psychiatric referrals such as delirium and neurocognitive disorders had a longer duration of LOS as compared to patients experiencing mood and substance abuse disorders. Thus, the study concluded that patients who had longer Time to Referrals had significantly longer LOS (11). Similarly, a large retrospective study with 4500 patients was conducted in a general hospital in Paris, analyzing the association between the timing of CLP and LOS using referral time, defined as log (number of days prior to the consultation)/log (LOS). The study revealed that after adjusting for age and gender, referral time was significantly associated with log (LOS) (P value <0.001). This was further illustrated when taking the LOS of each patient into consideration, for example for an expected LOS for 10 days, a reduction in actual LOS of 2.4 days was observed after CLP referral on day 3 instead of day 6 of in-patient stay (3).

Among the pediatric population, studies with results comparable to adults were retrieved on CLP referrals impacting the hospital LOS. A retrospective study was conducted on CLP referrals on 279 children and adolescents below the ages of 2 to 18 years, with a median range of 15 years, at a tertiary pediatric hospital. Using a ratio of observed LOS and expected LOS, a significant positive co-relation was observed between referral time and observed-to-expected LOS (0.34, P value = .0001). Furthermore, a 10% decrease in CLP referral time was associated with a 7.9% shorter LOS (95% confidence interval: 6.4–9.5; P < .001). Thus, the study established that early CLP referrals was associated with shorter LOS, and thus overall reduced hospitalization charges (12). Similar results were noted among the geriatric population. A retrospective, cross-sectional, observational and comparative study was carried out in Spain among 1017 elderly hospitalized patients from the ages of 65 years and older, who were further subdivided into two groups based on their ages patients from ages 65- 74 years of age belonging to the *youngest-old* group and 75 years and older belonging to the *oldest-old* group. The average age of patients in the study sample was 75.73 ±6.5 years of age. The CLP

referral rate for all the patients included in the study among both groups was only 1.45%. The median LOS for the entire sample of elderly patients was 16 days. The median LOS for youngest-old was 18 days and 15 days for oldest-old, and no statistically significant difference was found between both groups ($U = 28,810.5$, $p = 0.064$). The median time to referral to CLP services for the entire study sample was 6 days. Likewise, there were no statistically significant differences in time to referral to CLP unit for both groups ($U = 50,251$, $p = 0.67$). It was interesting to observe that the oldest old, i.e. patients' ages 75 years and older had shorter LOS as compared to the youngest-old patients which is contrary to previously published literature. The authors attributed this variance to the higher prevalence of neurocognitive disorders in patients 75 years and older, thus leading to shorter time to referrals for CLP services, as a result of which early and timely management and evaluation takes place and therefore, reduced LOS at the hospital. Furthermore, the main implication from the results was the increase in time to referral or a delay in CLP services was associated with an increase in LOS, wherein for every 10% increase in time to referral to CLP service, the LOS increased by 5.7% (8).

Unplanned readmission rates have proven to be significantly reduced due to CLP referrals, which in effect lead to reduction in healthcare costs. (13-15). A study conducted in Birmingham, United Kingdom by Tadros et al. evaluated the impact of a The Rapid Assessment and Interface, Discharge service (RAID), around the clock, rapid response mental health service as part of a new model for liaison psychiatry for all admitted patients in the City Hospital on indicators of LOS and readmission rates. The statistical assessment and effect of service utilization on in-patients was made among three groups: RAID, RAID-influence which included City Hospital staff and personnel that received training from the RAID team and pre-RAID which was considered the retrospective control group. Based on the results, the RAID decreases the rate of readmissions by 60% from the RAID-influence group and by 65% from the pre- RAID group. The number of readmissions were reduced to 4 for every 100 patients with the RAID group in comparison to 15 readmissions for every 100 patients with the pre-RAID group and 12 readmissions for every 100 patients with the RAID-influence group. Furthermore, the mean LOS for the RAID group was 9.4 days as compared to the 10.3 days as compared to the matched pre-RAID group, whereas the mean LOS for RAID influence group was 5.2 days as compared to the matched pre-RAID group with 8.4 days. The RAID

influence group reduction of 3.2 days from the matched pre-RAID group was highly significant with a p-Value of 0.001. The authors estimated a 95% confidence interval of the mean savings and calculated the minimum savings as 21-42 beds per day through a reduction in LOS. Similarly, a cost saving of 22 beds per day through reduction in number of readmissions was estimated. The total number of beds saved added up to 43-64 beds per day, equivalent of 2 to 3 wards, from which the authors estimated financial savings equivalent to 4-6 million pounds, whereas London School of Economics estimated a cost savings of 3.55 million pounds. It was deduced that the RAID-influence group had a greater impact than the RAID group in reducing LOS. Nevertheless, both RAID and RAID-influence groups were more effective than the control pre-RAID group (14). A study conducted in Canada by Okoronkwo on the effects of implementation of a CLP service and its efficacy reaffirmed the findings on reduction of readmissions. The number of readmissions prior CLP services were 412 (33%). After the implementation of CLP services, the number of readmissions considerable decreased with 231 readmissions (24%), thus a 10% reduction in readmissions was noted. Furthermore, a reduction of 2 days in the average LOS was noted, wherein prior to the introduction of CLP services the LOS was 9.24 days, which reduced to 7.25 days after the introduction of the services. The cost-savings were calculated and expressed per 100 patients, to \$179,800 (15). In his study on a CLP service at a general hospital in Australia, Hui reported that 22.3% of patients in the rehabilitation unit and 44.2% in geriatric evaluation and management unit had active psychiatric disorders. They had significantly greater LOS and those patients that were referred to CLP service had greater psychiatric co-morbidities. Nonetheless, patients undergoing CLP referrals were associated with reduced number of readmissions in the 180-day-period after the first discharge. (16) Most importantly, patients who have been referred to CLP services have an overall improved quality of life, improved social functioning and return to daily activities and society (8, 13). More prospective, comparative studies with larger study samples should be conducted to achieve more precise results.

Study samples should be stratified according to various departments and underlying diagnostic etiologies that have higher utilization of CLP services. Health economists should be a part of future research teams to have a deeper understanding of healthcare cost savings. Lastly, long term follow-up studies should be conducted to assess quality of life and return to community after

being discharged from the index and in the event of any readmissions.

Conclusion

Consultation liaison psychiatry is a branch of psychiatry that bridges the gap between mental health disorders and psychiatric co-morbidities co-occurring in complex medical and surgical diseases. It is an inter-disciplinary approach between psychiatrists and general practitioners in the settings of a general hospital. Although the paradigm has shifted for higher utilization of Consultation liaison psychiatry services, there are still unmet mental health care needs for patients hospitalized with chronic, medical co-morbidities and patients undergoing invasive procedures. Consultation liaison psychiatry referrals are associated with positive outcomes such as reduced length of stay, reduced number of unplanned readmissions, higher cost savings and improved morbidity, mortality, and quality of life of patients after discharge.

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Data availability

Data that support the findings of this study are embedded within the manuscript.

Authors' contribution:

The sole author was responsible of drafting, writing, sourcing, article screening and final proofreading of the manuscript.

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