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Trends in Mental Health Presentations to a Paediatric Emergency Department

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Abstract

Aims
This study aimed to analyse trends in mental health presentations to the Emergency Department (ED), which anecdotally had increased over the past decade.

Methods
The ED's electronic 'Symphony' system was used to identify the annual number of presentations categorised as having a mental health complaint from 2006-2017. A detailed analysis was performed on presentations over a one-year period.

Results
The number of presentations increased from 69 in 2006 to a peak of 432 in 2016 (526% increase). The overall admission rate was 33.3%(n=99), while 52.5%(n=156) of presentations occurred outside of standard working hours. Similar increases were documented by other ED's worldwide, and the WHO estimate that neuropsychiatric disorders will become one of the top five causes of morbidity, mortality and disability among children by 2020.

Conclusion
With the number of mental health presentations dramatically increasing, carefully designed and integrated strategies are required to pro-actively tackle this growing epidemic.

Introduction

The prevalence of mental health disorders is increasing[1,2]. According to the WHO, it accounts for 16% of the global burden of disease in 10–19 year olds, and half of all mental health conditions start by age 14[3]. Suicide is the second commonest cause of death in young people[4], and self-harm is one of the strongest predictors of suicide[5]. There has been a notable increase in psychiatric presentations to this department over recent years, a pattern observed in many other paediatric EDs worldwide[6-10]. These patients often require considerable time and resources, posing significant challenges in an already resource constrained environment.

In the Irish context, the National Self-Harm Registry Ireland was established in 2002 monitoring the occurrence of hospital-treated self-harm[11]. This registry was requested by the Department of Health and Children, highlighting self-harm as a matter of national concern. Paediatric Consultation Liaison Psychiatry services (PCLPS) are increasingly being diverted to ED referrals at the expense of providing necessary PCLPS services to routine paediatric patients[12], and the average cost per patient presenting to EDs with acute mental health concerns is €12,684[13]. Overall however there is limited published data in the Irish context, and to the best of our knowledge this is the first study to look at this cohort in Ireland in this way.

The primary objective was to quantify annual mental health presentations to this department. A subanalysis further delineated the breakdown of presenting complaints, time of presentation and hospital admission rates. This is with a view to establishing trends and informing future management strategies.

Methods

Temple Street Children's University Hospital (TSCUH) is a tertiary paediatric hospital in Dublin, having over 50,000 attendances annually. This department sees children up to the age of 16 years old. Mental health presentations represent a relatively small but complicated proportion of the workload, similar to most paediatric EDs. Currently, TSCUH has an on-site multi-disciplinary paediatric mental health liaison team providing crisis consultation when requested by the treating ED paediatrician between the hours 09.00-17.00, Monday-Friday. Outside of these hours an off-site on-call service is provided by a Psychiatric Registrar and Consultant Child and Adolescent Psychiatrist. There is no other crisis psychiatry support available in the region at night.

This was a retrospective cohort study looking at mental health presentations to the department from 2006-2017. There are two components to this study. The first looked at the overall annual trends in presentations to the ED over the study period from 1st January 2006 to 31st December 2017. The second component was a more detailed analysis of the breakdown of patient presentations over a one year period from 1st September 2013 to 31st August 2014, the most up to date one year data set available at the time the study was commenced. The EDs electronic data management system, Symphony, was used to identify all patients that presented to the department recorded as having a mental health complaint. The following data was collected for each patient: demographic details, time and date of hospital presentation, presenting complaint, and discharge outcome. This data was cross-checked against records held by the Department of Psychiatry in TSCUH where possible to confirm its accuracy. Patients were categorised by the attending physician into various different groups of mental health conditions based on the diagnostic categories available in the Symphony system. The study also assessed the trends in overall annual presentations to the ED for the same time period, to ensure that the results were not just a reflection of background trends. Ethics approval was obtained.

Results

The number of mental health presentations increased from 69 in 2006 to 430 in 2017, with a peak of 432 in 2016 (see Figure 1). This represents a 526% increase. During this same period, the total ED attendance increased from 48,742 in 2006 to a peak of 52,287 in 2016, representing a 7% increase. Interestingly, there was a jump in presentations between 2007 and 2008 corresponding with the global financial crisis that occurred at that time.

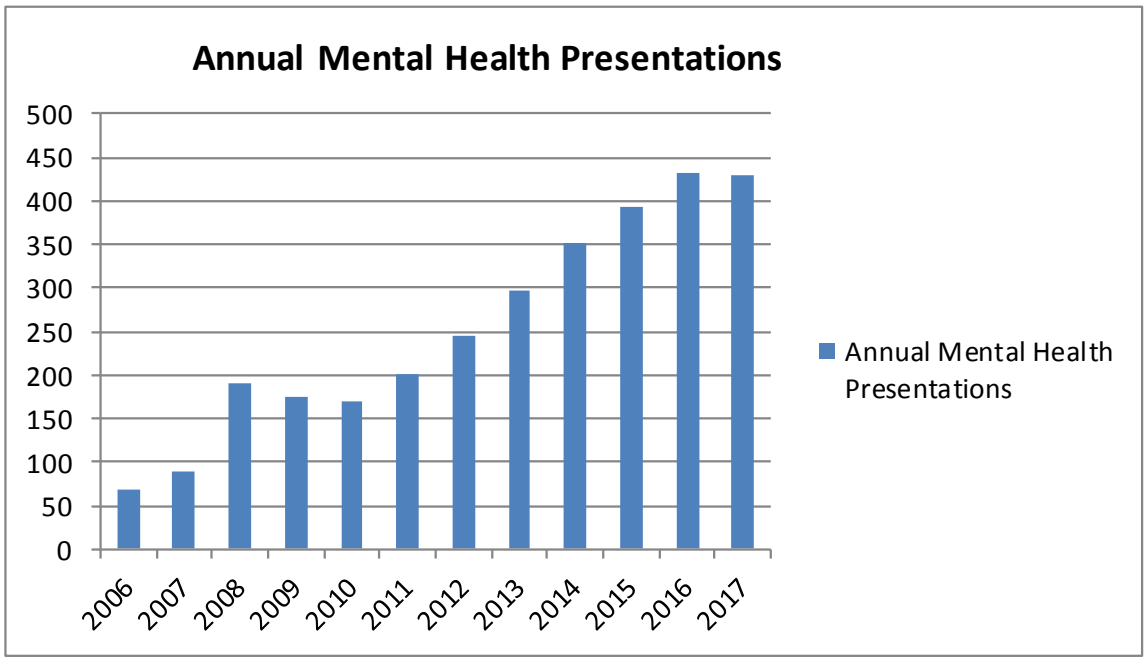

Figure 1: Trend of the Annual Number of Mental Health Presentations to the ED

Analysing the breakdown of mental health presentations over a one year period, the most common presenting complaint was suicidal ideation (34.7%, n=103), followed by deliberate self-harm (31%, n=92). Other presentations included eating disorders, behavioural disturbance, depression, anxiety disorders and psychotic episodes. Eight patients did not fall into any of these categories and were grouped separately as 'Other Psychiatric Complaint' (See Table 1).

The overall admission rate for this cohort during this one-year period was 33.3%(n=99). This ranged from 60%(n=3) for patients presenting with psychotic symptoms to as low as 0% for patients reported to have panic attacks/anxiety symptoms. To assist with resource planning, the proportion of patients presenting during out-of-hours periods was calculated, showing that just over half of patients (52.5%, n=156) presented during the 'on-call' hours (See Table 1).

	Total Numbers	No. of admissions	Admission rate (%)	Out of hours rate (%)
Suicidal Ideation	103	48	46.6	62.1
Deliberate Self Harm	92	27	29.3	62.0
Depression	33	12	36.4	36.4
Panic Attacks/Anxiety	21	0	0.0	57.1
Behavioural	18	1	5.6	61.1
Eating Disorder	17	7	41.2	23.5
Psychosis	5	3	60.0	60.0
Other Psychiatric Complaint	8	1	12.5	37.5
Total	297	99	33.3	52.5

Table 1: Summary of the mental health presentations to the Emergency Department over a one year period (Sept 2013-August 2014)

Discussion

This study demonstrates a dramatic increase in mental health presentations to our ED. Whilst this epidemic has been well documented internationally, there is limited data available at present in the Irish context. Although direct comparisons of data between centres can be complicated by confounding factors including changes in diagnostic criteria, differences between the assessment methods used and discrepancies in official reporting practices[2], studies worldwide show this same trend. The drivers behind these findings are likely multifactorial[13] and have been explored further.

Firstly, there is greater awareness regarding mental illness among the general public in recent years. This is partly due to successful public health campaigns helping to reduce the stigma surrounding mental illness. These campaigns align with the WHO's 2005 Mental Health Action Plan for Europe[14] which detailed specific recommended actions for member countries. Many celebrities have also spoken publicly about their struggles with mental illness over recent years, and this may have been particularly important in increasing awareness and reducing stigma for younger people. Sadly, several completed cases of youth suicide have occurred and received a lot of media attention, with evidence suggests association between highly publicised cases such as these and an increase in the number of mental health presentations to emergency departments[15]. This is particularly challenging in systems without rapid access to community-based crisis or CAMHS services outside of standard working hours, even if young people are already known to CAMHS services.

Long waiting times for those awaiting out-patient assessments is another factor. Patients waiting for out-patient appointments may present to the ED with a deterioration in their symptoms during this period, which may warrant a more urgent assessment. The present 24 hour on-call psychiatry service in TSCUH has been in existence for over 20 years and is well received by patients and families. Undoubtedly this has led to an increased awareness amongst local service providers, which may also have contributed to increased referrals, particularly in the absence of rapidly responsive community based services. Changes in the severity of symptoms is another issue to consider, whereby people may be engaging in more 'harmful' deliberate self-harm for example, requiring assessment in the ED. An Irish study looking specifically into deliberate self-harm noted that children presenting outside of standard working hours were a particularly high-risk group, being more likely to have consumed alcohol, to have attempted suicide and to have a family history of mental illness than those presenting between 09:00 and 17:00 on weekdays[16].

This study also highlights the importance of mental health service provision to young people in EDs. Given that paediatric ED staff are often rotating through posts and may not have received formal training in the practical management of mental health presentations, the above figures highlight the hugely important role that the out-of-hours specialist psychiatric

cover provides. Looking at the data for the one-year study period, the majority of patients (66.7%, n=198) did not require hospital admission following an assessment by the ED staff and the psychiatry services where requested. Their input undoubtedly helps to signpost and support referral to local services and avoid unnecessary admissions, where such admissions may ultimately be unhelpful to young people and families. Indeed, a majority of presentations in this study occurred outside of standard working hours, and this was consistent with the findings of other studies looking at the temporality of mental health presentations to paediatric EDs[17,18,19]. This interaction with the psychiatry team also provides training and opportunities for learning for ED staff in managing these presentations. It has been recognised in the UK that paediatric trainees should develop basic skills in managing mental health presentations as part of their training, as set out in the NICE guidelines[20]. It has also been suggested that closer working relationships between paediatric and mental health services will help to further reduce the stigma associated with mental illness[21]. Secondly, an Australian study has highlighted several factors that improve patient experience during this challenging time. In particular they noted that the availability of staff with psychiatric qualifications and experience in dealing with mental illness correlated with higher levels of patient satisfaction[22].

Recently there has been a drive towards more community based mental health services in Ireland, as set out in the national health policy document, 'A Vision for Change'[23]. The plan envisages a system composed of a combination of robust community services coupled with acute and liaison services and more rapid access to mental health beds. This would allow hospitals to deal solely with emergencies and psychiatric co-morbidities. However there remains a significant shortage of resources available to community based paediatric mental health services, likely contributing to the increased ED attendances. Whilst EDs plays a valuable role in managing certain crisis presentations, it is not the best place for all young people. In such cases it would be preferable to have timely access to community-based services. For those patients that do require hospital admission, the process of admitting patients to an appropriate bed that meets their needs should be an efficient one. Unfortunately, in crowded EDs this is usually not the reality that many young people experience. In addition to the privacy issues this creates, safety issues may also arise given the difficulty in providing 1:1 nursing supports in this such an environment, and negative experiences of care often ensue.

Many children with mental health concerns present for the first time to the ED, and this interface provides an opportunity for the paediatric and psychiatry specialties to work together to provide early intervention services and optimise patient care[24]. Reports show that up to half of children and youths presenting to the ED with mental health presentations have no previous psychiatric history and no contact with mental health services[25]. This highlights the need to manage these presentations effectively if successful outcomes are to be achieved, given that patients and their families are likely to be more receptive to engagement at this time of crisis. One of the major strengths of this study is that it provides important data to help better understand the extent of the problem in the Irish context where limited data currently exists. A limitation is that the choice of diagnostic category in Table 1 was at the discretion of the attending clinician in the ED. Given the dramatic increase in mental health presentations, it is clear that carefully designed and integrated management strategies and additional resources will be required to pro-actively tackle this growing epidemic.

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Declaration of Conflicts of Interest:
The authors declare that there are no conflicts of interest.

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