

## Short Report

# General Practitioner referrals to Child and Adolescent Mental Health Services: Did they differ during Covid-19?

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### Abstract

**Objectives:** The COVID pandemic has been associated with poorer mental health in youth. This study aimed to evaluate any change in General Practitioner (GP) referral pattern to Child and Adolescent Mental Health (CAMH) services during the first 10 months of Covid-19 and compare with a similar time frame in 2019.

**Methods:** All accepted referrals to a CAMH Service in Dublin during the study time frame were reviewed. Referral letters were batch anonymised and clinical data extracted using a study specific proforma for analysis.

**Results:** Referral numbers between the two time periods did not statistically differ. Proportionally more females were referred during the pandemic, increasing to 56.9%,  $n = 99$ , compared to 43.1%,  $n = 75$  in 2019 ( $p = 0.01$ ). Referrals were more often designated by the clinician as urgent during the pandemic (61.3%,  $n = 98$ ) than before (39%,  $n = 62$ ,  $p < 0.001$ ). Referrals outlining self-harm or suicidal ideation increased significantly, from 42.1% ( $n = 67$ ) to 55.9% ( $n = 90$ ) ( $p = 0.014$ ). Referrals for externalising problems fell from 2019 rates; ADHD (21.4%,  $n = 34$  vs 11.1%,  $n = 18$ ;  $p = 0.013$ ), ASD (26.4%,  $n = 42$  vs 16.1%,  $n = 26$ ;  $p = 0.038$ ) and conduct problems (23.3%,  $n = 37$  vs 7.4%,  $n = 12$ ;  $p < 0.001$ ). Although numbers for psychosis in 2019 were low (10.7%,  $n = 17$ ), these also fell significantly in 2020 (2.5%,  $n = 4$ ;  $p < 0.001$ ).

**Discussion:** The finding of reduced referrals for ADHD and ASD has not previously been reported. With concerns regarding educational loss linked to online learning, it is crucial that these youth are not doubly disadvantaged by delayed referral and education decline.

**Keywords:** ADHD; CAMHS; COVID; externalising disorder; internalising disorder

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### Introduction

As the world enters its fourth year of the Covid-19 pandemic, few if any facets of society remain untouched by the virus including mental health services. Closure of schools, online learning and predicted grades for Junior and Leaving Cert exams are some of the sequelae of the pandemic. Coupled with this, children have been isolated from friends and classmates, sporting activities were severely curtailed and traditional celebratory events often cancelled.

Previous studies have noted a substantial increase in General Practitioner (GP) referrals to Child & Adolescent Mental Health (CAMH) services from September 2020 onwards following an initial decline in the earlier part of the year (Ougrin *et al.* 2022).

The aim of this study is to evaluate any change in GP referral pattern to a CAMH service during the first ten months of Covid-19 and compare with a similar time frame in 2019.

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### Methods

Referrals received and accepted by Lucena Tallaght (a geographically defined CAMH service in Dublin, Ireland) covering a catchment area of about 20,000 youth under eighteen years. In accordance with the Health Service Executive guidelines (HSE) (Health Service Executive, 2019), this CAMH service accept referrals by GPs where there are concerns regarding moderate to severe mental health difficulties. This service has electronic health records. Mental Health Information System (MHIS), allowing easy retrieval of all GP letters during the study time frame; March–December, 2019 and 2020. This time period was chosen as the lockdown rules came into force in Ireland in March 2020. Hence to have a fair comparative period in 2019, only referrals from March to December were considered.

Information was directly retrieved and anonymised from referral letters on MHIS directly onto the specified proforma. Data was de-identified at source and relevant clinical referral information transferred into an electronic data base for analysis using Statistical Package for Social Sciences (SPSS). Reasons for referral were extracted and aligned with possible diagnoses using a study proforma. Referrals may have had more than one diagnosis linked to them.

Descriptive statistics were used to categorise the sample. Mean and standard deviations (SD) were used to describe age, with frequencies and percentages used to describe sex, education, symptoms and diagnosis, actions and thoughts of self-harm, and any reference to Covid-19 related onset. Referrals were coded if marked urgent by GP or clinician post review.

The clinical items sought by the proforma were tick box indications of the PRESENCE or ABSENCE in the referral letter of:

- Demographic information: age, gender, is individual in an exam year in school, level of education.
- As per information received – possible presence of a mood disorder, anxiety disorder, specific phobia, psychotic disorder, eating disorder, ADHD, ASD, behavioural or conduct disorder, substance abuse disorder, thoughts of self-harm, suicidal ideation, deliberate self-harm or overdose.

Cases were also categorised as either internalising (if any reference was made by the GP to symptoms of anxiety or depression) or externalising (ADHD, behavioural or conduct problems);

Category of prioritisation as marked by referrer was recorded (was the referral marked urgent by the referrer);

Specific reference to an adverse effect of the Covid-19 Pandemic was recorded;

Category of prioritisation as marked by receiving clinic was recorded (was the referral marked urgent by the clinic and subsequently given an urgent appointment).

## Results

Three hundred and five referrals were received between March–December 2019, of which 159 (52%) were accepted. Between March–December 2020, 303 referrals were received and 161 (53%) were accepted. There was no difference in mean age of accepted cases by year.

Subsequent data presented relates to accepted referrals during the 10 month period of March–December in both years – 2019 and 2020.

There was no difference in mean age by year. The mean age over the 10 month study period in 2019 was 13.29 (SD 2.81) and 13.66 in 2020 (SD 2.72);  $t(319) = 1.202, p = .23$ .

There was a significant difference in the proportion of females referred by year; 75 or 43.1% of all cases in 2019 were female, compared to 99 (56.9%) in 2020; chi square (1,  $n = 318$ ) = 6.659,  $p = .01$ . There was also a difference in clinic prioritisation, with 62 (39%) being prioritised by CAMH service as urgent in 2019, compared to 98 (61.3%); chi square (1,  $n = 319$ ) = 15.801,  $p < .001$  in 2020.

During the pandemic, there was a significant increase in the proportion of referrals with internalising type symptoms (86.3% compared with 70.4%), chi square (1,  $n = 321$ ) = 11.029,  $p = .011$ , and a similar decrease in those with externalising problems (21.4% vs 10.6%) chi square (1,  $n = 320$ ) = 6.212,  $p = .013$  (see Table 1).

Cases in which the GP referred to either self-harm, thoughts of self-harm or suicidal ideation were more frequent in 2020 (55.9% compared to 42.1%) (Table 1). There were also significant decreases in referrals for ADHD, conduct disorder, psychosis and ASD (Table 1). There was a significant correlation between female gender and internalising disorder ( $r = .336, p < .001, n = 318$ ), male gender and externalising disorder ( $r = .277, p < .001, n = 318$ ), but no significant correlation between gender and self-harm category ( $r = .42, p = .069, n = 318$ ).

**Table 1.** Symptom profile of referrals

Symptom profile	2019 pre-Covid-19: March–December (N = 159) n (%)	2020 Covid-19: March–December (N = 161) n (%)	Statistics: Chi square (degrees of freedom or <i>df</i> , $n =$ sample size) = chi value, $p = p$ value with $< .05$ significance value
Self-harm/ thoughts of self-harm/ suicidal ideation	67 (42.1)	90 (55.9)	Chi square (1, $n = 320$ ) = 5.525, $p = .014$
Internalising disorders	112 (70.4)	139 (86.3)	Chi square (1, $n = 321$ ) = 11.029, $p = .011$
Externalising disorders	34 (21.4)	17 (10.6)	Chi square (1, $n = 320$ ) = 6.212, $p = .013$
Psychotic	17 (10.7)	4 (2.5)	Chi square (1, $n = 320$ ) = 7.5, $p = .006$
ADHD	34 (21.4)	18 (11.1)	Chi square (1, $n = 321$ ) = 6.238, $p = .013$
Conduct disorder	37 (23.3)	12 (7.4)	Chi square (1, $n = 319$ ) = 15.611, $p < .001$
Eating disorders	0 (0)	1 (0.6)	NA
Autism spectrum disorder	42 (26.4)	26 (16.1)	Chi square (1, $n = 319$ ) = 4.326, $p = .038$

## Discussion

While the total number of referrals accepted was not statistically different between the two study periods, there was a change in proportion of referrals by disorder type and perceived urgency. Referrals were more likely to be for females, and prioritised as urgent by the service. Referrals for externalising disorders were found to be reduced, including referrals for ADHD and ASD. Importantly the referrals accepted that were found to increase in 2020 were internalising disorder as a group and in combination with suicidal ideation. There was an increase in the total number of referrals with suicidal ideation, thoughts of self-harm and completed self-harm actions. In contrast externalising disorders and psychosis referrals accepted were found to decrease. To the best of the authors' knowledge this is the first study to look at the qualitative change to referrals to a CAMH service due to the pandemic.

While the total number of referrals did not change from 2019 to 2020, this study found an increase in referrals which included a reference to thoughts of self-harm, suicidal ideations, and/or acts of self-harm. Referrals noting suicidal ideation also increased as a proportion of the total referrals received. There was also an increase in internalising disorders including mood and anxiety disorders. This study looked at a more immediate period after the pandemic when there were still significant restrictions in place in most social settings. The increase in proportion of self-harm and suicidal ideation presentations during the start of the pandemic also is likely to be related to loss of social and community supports due to lockdowns and restriction of social contacts.

Internalising disorder related referrals as a group were found to have significantly increased in this study in 2020. This group included referrals for all mood and anxiety disorders. This is in keeping with other studies showing negative impacts on mental health during the pandemic and as a result of restrictions. A systematic review of the impact of the Covid-19 lockdown on children and adolescents found anxiety (57.4%) and depression (39.3%) to be the most common measured outcomes with a substantial increase in anxiety and depression symptoms during lockdown (Panchal *et al.*, 2021). This study also found rates of externalising disorders such as ADHD and Conduct disorder to have increased also during the pandemic (Panchal *et al.*, 2021).

This study documented a decrease in ADHD referrals and this might be partially explained by a decrease in face to face time spent with teachers. The reduction in referral was not unique to the service studied with an ADHD specific specialist service in Dublin noted an 80% decrease in referral (McGrath 2020). Referrals querying ADHD may be driven by teacher concerns which are then typically flagged to parents and GPs. With school closures this pathway for ADHD referrals may have been disrupted. Another factor that may have resulted in a decrease in these referrals was the increase noted in suicidal ideation referrals which may have resulted in diagnostic camouflaging of other difficulties reducing mention of externalising disorders by parents or GPs.

This service has a historically low rate of psychosis related referrals. This study showed a further decrease in psychosis related referrals following the start of the pandemic. Concerns have been raised by early intervention psychosis services that virus related concerns may delay seeking help for psychosis and that early warning signs of psychosis may be masked by increased social isolation and anxiety related to the pandemic (O'Donoghue *et al.*, 2021). A study conducted in Australia looking at incidence of First Episode Psychosis in young people found a change in the pattern of incidence, with nearly twice as many presentations in the later phase of restrictions when compared to the initial restrictions but no significant change in total number during eight months following the onset of the pandemic, a similar time frame to this study (O'Donoghue *et al.*, 2022).

It would be pertinent to continue this study beyond the defined time frame to include latter stages of restrictions to evaluate referrals with reference to psychosis, particularly to examine if a similar pattern would emerge to the aforementioned Australian study (O'Donoghue *et al.*, 2022).

Another important consideration is as services have adapted to the pandemic there was a shift to telemedicine. A review of telehealth interventions in schizophrenia spectrum disorders highlighted that the assessment of psychosis often involves nonverbal signs which may be best done with higher bandwidth video conferencing which may not be available for the entire population (Santesteban-Echarri *et al.*, 2020) or for all GPs. It is worth considering that due to the absence of nonverbal signs because of telemedicine psychotic illnesses may have evaded being diagnosed by clinicians.

The Covid-19 pandemic has promoted a stronger focus on exercise and weight loss (Solmi *et al.*, 2021). A study of admissions due to eating disorders in a Dublin Hospital found a 66% increase in 2020 from 2019 (Barrett and Richardson 2021). This study though did not yield significant change, and showed a small amount of eating disorder referrals for the catchment area. This service historically has had low numbers of eating disorder referrals which is considered linked to the demographic profile of the population potentially accounting for the converse finding here that ED referrals did not increase during the time period analysed. It would be considered

important that this be analysed over time to see if this trend changes later in the Covid-19 pandemic. This diversion of referrals may be supported by reports from inpatient services where eating disorder patients in a Dublin hospital in 2020 were found to be more severe at presentation than 2019 (Barrett and Richardson 2021).

### Limitations

The study was of short duration, ten months and limited to accepted referrals for one catchment area. Diagnostic proxies were drawn from information contained in the GP letter but not substantiated by subsequent diagnosis given following psychiatry assessment, introducing a risk of bias toward urgent and more objective difficulties.

### Conclusions

A significant increase in self harm, suicidal ideation and internalising disorders were observed following Covid-19 with a higher rate of clinic prioritisation. Referrals for ADHD and other externalising disorders decreased. The combined effect of reduced referral for youth with ADHD and educational challenges during Covid-19 require careful monitoring.

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**Conflict of interest.** Authors have no conflicts of interest to disclose.

**Ethical standards.** The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committee on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

Ethical Approval was granted by St John of God Ethics Board ID 784.

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