

The Long-Term Impact of COVID-19 on Presentations to a Specialist Child and Adolescent Eating Disorder Program

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Abstract

Aim

Explore the impact of COVID-19 on numbers and clinical profile of Eating Disorder (ED) presentations to a specialist ED program pre- and during COVID-19.

Methods

Retrospective chart review of referrals pre- COVID-19 (January 2018 – February 2020) and during COVID-19 (March 2020 – August 2021) were compared.

Results

128 youth were assessed with significantly higher rates of referrals each month during COVID-19 compared to pre- COVID-19 (3.78 vs. 2.31, $p = 0.02$). Youth referred during COVID-19 showed a higher rate of % Ideal Body Weight (IBW) loss (4.8% = vs. 2.6%, $p = < 0.001$) and had a shorter duration of illness pre-referral (4.8 months vs. 7.4 months, $p = 0.001$). Fewer youth during COVID- 19 (19% vs. 43%, $p = 0.011$) were prescribed psychotropic medication. Many youth (80%), self-declared COVID-19 as a contributory factor in the development of their ED.

Conclusion

This study supports the growing consensus of a COVID-19 specific impact on ED services with higher rates of referrals, youth presenting with a faster pace of weight loss and earlier referral to specialist services. Whether this represents a true increase in EDs or an overall increase in CAMHS referrals with a faster transfer to ED services requires further exploration.

Introduction

In March 2020, following the declaration of a COVID-19 global pandemic by WHO¹, countries imposed immediate restrictive measures aimed at containing the virus. These measures resulted in school closures and curtailment of usual sporting events and social gatherings, severely impacting the lives of children and adolescents, and exposing youth to debilitating effects on educational, psychological, and developmental attainment².

A recent systematic review reported higher rates of depressive and anxious symptoms and an increased prevalence of suicidal ideation and non-suicidal self-injury during the pandemic compared to reported pre-pandemic rates³. Irish national data saw a 60% and 120% rise in ED referrals in 2020 and 2021 respectively^{4,5}. Childhood pathology closely mirrored school opening and closing periods with countries utilizing higher stringency measures demonstrating a more negative impact on childhood mental health⁶.

Large scale population surveys have highlighted significant effects on eating and exercise behaviors, with deterioration in eating disorder (ED) symptomatology in those with a pre-existing ED⁷. Given initial concerns about possible food shortages, and limits on the frequency of shopping trips to comply with travel restrictions, difficulties, and anxieties around access to usual foods and avoidance of bulk buying were understandable in the context of those with a previous ED. Some have suggested youth with an ED presented with higher medical risk and with more atypical symptoms during the pandemic^{8,9}.

Although the cause of EDs remain complex, with biological, cultural, and psychological components, personal control is proposed to play a central role in both etiology and maintenance. The pandemic, a period of uncertainty and self-perceived lack of control, could be particularly intolerable for a group of vulnerable youth and might account for the rise in ED cases reported. Public Health and media messaging, encouraging a healthy lifestyle approach to eating and exercise, may also have been triggering for some.

The objective of this study was to assess the impact of COVID-19 on a specialist ED program embedded in Child and Adolescent Mental Health Services (CAMHS). Specific aims were to i) examine the rate of referrals pre-COVID-19 (January 2018 – February 2020) compared to during COVID-19 (March 2020 – August 2021); and ii) to compare the clinical profile between time periods.

Methods

The ED specialist program offers assessment and if appropriate, treatment to youth with evidence of an ED. It is a government funded Public Health service covering an urban area in Dublin, responsible for provision of CAMHS to a population of 260,560 or 12.7% of all youth in the Republic of Ireland (ROI).

The service runs one day per week with multi-disciplinary team input involving a Consultant Child and Adolescent Psychiatrist, Community Mental Health Nurses, Clinical Psychologists and Social Workers offering Family Based Therapy (FBT)¹⁰. Family Based Treatment (FBT) is appropriate as first line treatment for children and adolescents with Anorexia Nervosa (AN) who are medically stable. It is increasingly being used and adapted for other eating disorders such as Bulimia Nervosa and Avoidant Restrictive Food Intake Disorder (ARFID). For the clinic described in this paper, referrals were limited to those with predominately AN in account for resourcing issues. Monthly access to a Paediatrician and Dietician is also incorporated into treatment programs. Referrals to the specialist ED program are received from local CAMHS teams, who in turn have been referred cases either from General Practitioners, or other health services.

All FBT referrals from CAMHS of youth under 18 who were offered an initial assessment between January 2018 and August 2021 were included in the study.

Data was extracted from electronic health records, using the services Mental Health Information System (MHIS). Data was de-identified at source and transferred into an electronic data base for analysis using Statistical Package for Social Sciences (SPSS). The study was approved by the Research Ethics Committee of Saint John of God Hospital (ID787 – June 2021).

The study time periods were defined as pre- COVID-19 (January 2018 – February 2020) and during COVID-19 (March 2020 – August 2021). Descriptive statistics were used to categorize the sample. Mean and standard deviations (SD) were used to describe age, duration of weight loss and anthropometric data. The Ideal body Weight percentage (IBW%) and deviation from pre-morbid IBW% was used to reflect degrees of nutrition. Frequencies and percentages were used to describe sex, level of education, ED type, presence of psychiatric co-morbidities, psychotropic medication prescriptions, actions and thoughts of self-harm, and any inpatient admissions. Additionally, data was extracted for any case in which mention was made by the young person, parent, or clinician as to a contributory impact of COVID-19 acting as a precipitating factor and presented in a quantitative fashion. Quantitative variables were compared using independent samples t-test and categorical variables using Chi-squared tests. All analyses were performed using SPSS.

Results

128 cases were referred to the ED specialist service during the study period, predominately female (93%), ranging in age from 9 to 17, with a mean age of 14.45 (SD 2) (Table 1). The majority were attending secondary school (88%). Nearly all youth (93%) had a diagnosis of AN. The majority (N = 101, 78.9%) had at least one co-morbidity, most often a mood disorder (N = 76, 59%). 28 patients (22%) had self-harmed in the past and a similar number (N = 35, 27%) had thoughts of self-harm.

At the initial assessment, the average IBW was 85.3% (SD = 11.1) and premorbid IBW 100.6% (SD = 13.2). The average duration of illness pre-referral to the specialist ED service was 6 months (SD = 4.1). Forty (31%) of youth were on psychotropic medication, and 53 (41%) had a prior hospital admission for ED management.

Table 1: Referral characteristics to specialist ED service pre-COVID-19 and during COVID-19.

	Total Sample	Pre- COVID-19	During COVID-19	Significance (chi-square or independent samples t-test)
N (%)	128	65 (51%)	63 (49%)	
Referrals per month	2.9	2.31	3.78	0.021
Age year (mean ± SD)	14.45 (2)	14.6 (2.1)	14.3 (1.9)	0.372
Sex, N (%)	F: 102 (92%) M: 9 (8%)	F: 60 (92%) M: 5 (8%)	F: 59 (94%) M: 4 (6%)	0.766
In primary or secondary school, N (%)	Primary: 16 (13%) Secondary: 112 (88)	Primary: 10 (15%) Secondary: 55 (85%)	Primary: 6 (10%) Secondary: 57 (91%)	0.372
Eating Disorder type, N (%)	AN: 119 (93%) ARFID: 5 (4%) EDNOS: 4 (3%)	AN: 62 (95%) ARFID: 2 (3%) EDNOS: 1 (2%)	AN: 57 (91%) ARFID: 3 (5%) EDNOS: 3 (5%)	0.634
Any co-morbidity, N (%)	101 (78.9)	52 (80)	49 (77.8)	0.758
Mood disorder, N (%)	76 (59)	36 (55)	40 (64)	0.350
Anxiety disorder, N (%)	47 (37)	22 (34)	25 (40)	0.493
Autism Spectrum Disorder, N (%)	13 (10)	6 (9)	7 (11)	0.725
Other disorder, N (%)	16 (13)	11 (17)	5 (8)	0.124
Any psychotropic medication, N (%)	40 (31)	28 (43)	12 (19)	0.011
Actions of self-harm or overdose, N (%)	28 (22)	15 (23)	13 (1)	0.796
Thoughts of self-harm or overdose, N (%)	35 (27)	21 (32)	14 (22)	0.349
Prior inpatient admission for ED, N (%)	53 (41)	30 (45)	26 (37)	0.163

Referral pattern and profile post-pandemic

The clinical presentation of pre- COVID-19 patients (n=64; 51%) were compared to the during COVID-19 patients (n=63; 49%) (Table 1). Those referred post pandemic had higher rates of ASD (11%) compared to 9% pre- COVID-19, although not significant [χ^2 (1, n=95) =1.53, p=.725] (Table 1). Fewer post pandemic referred cases were on psychotropic medication (19% as opposed to 43%) [χ^2 (1, n=95) = 2.73, p=.001]. There was no difference in presence of self-harm, suicidal ideation, or admission rates between groups (Table 1). With regards to premorbid IBW%, there was no difference between groups (98% versus 103.5%), or IBW% at assessment (83.7% versus 87%) (Table 2). The rate of monthly weight loss during the pandemic was greater (2.3kg versus 1.94kg) but this was not significant (t (65) = 2.878, p=.395). However, the duration of illness pre-referral was significantly shorter in youth referred during COVID-19 (4.8 months versus 7.4) ;(t (91) =2.151, p=.001). Furthermore, the rate of IBW% loss/month was significantly greater during COVID-19 (4.8% month versus 2.6; (t (91) = 2.151, p=.001).

Table 2: Anthropometric characteristics pre- COVID-19 and during COVID-19.

	Total Sample	Pre- COVID-19	During COVID-19	Significance (Independent samples t-test)
Duration of weight loss months pre-referral, months (mean ± SD)	6.1 (4.1) N: 108	7.4 (4.5) N: 62	4.8 (3) N: 54	<.001
Premorbid IBW % (mean ± SD)	100.6 (13.2) N: 128	98 (12) N: 65	103.5 (14) N: 63	.120
IBW% at FBT assessment % (mean ± SD)	85.32 (11) N: 128	83.7 (9.2) N: 65	87 (12.7) N: 63	.100
Difference in IBW% (from premorbid to assessment) % (mean ± SD)	15.24 (10.2) N: 128	13.99 (10.6) N: 65	16.5 (9.5) N: 63	.159
Rate change in IBW%/month (mean ± SD)	3.7 (3.5) N: 125	2.6 (3) N: 62	4.8 (3.6) N: 63	<.001
Weight loss from premorbid weight to assessment weight kg (mean ± SD)	8.6 (5.4) N: 79	9.13 (7.2) N: 25	8.35 (4.5) N: 54	.625
Weight loss from premorbid weight to assessment weight kg/month (mean ± SD)	2.2 (1.8) N: 78	1.94 (2.3) N: 24	2.3 (1.5) N: 54	.395

Significantly more referrals were received in the 18 months during the pandemic, with a rate of 3.78 per month compared to a pre-COVID-19 rate of 2.31 (p=.021) (Figure 1). Of cases referred during COVID-19, mention was made in the clinical notes of the pandemic having had a significantly negative effect on the youth person in 58 (82.9%). In 49 cases (70%), entries recorded a perceived ‘significant’ adverse impact. Specific clinical entries related to the impact of lockdown restrictions on social contact and general activities (32, 45.7%) and an initial adoption of a focus on exercise and healthy eating as a coping strategy (9, 12.9%). School related anxieties⁵ and health anxieties regarding possible infection with COVID-19⁷ were less commonly cited. Over a fifth of pre- COVID-19 cases regressed during COVID-19, but 3 youth, already in treatment at the start of COVID-19, reported an improvement during COVID-19, describing less social pressure, and reduced social comparisons due to restrictions on social contact.

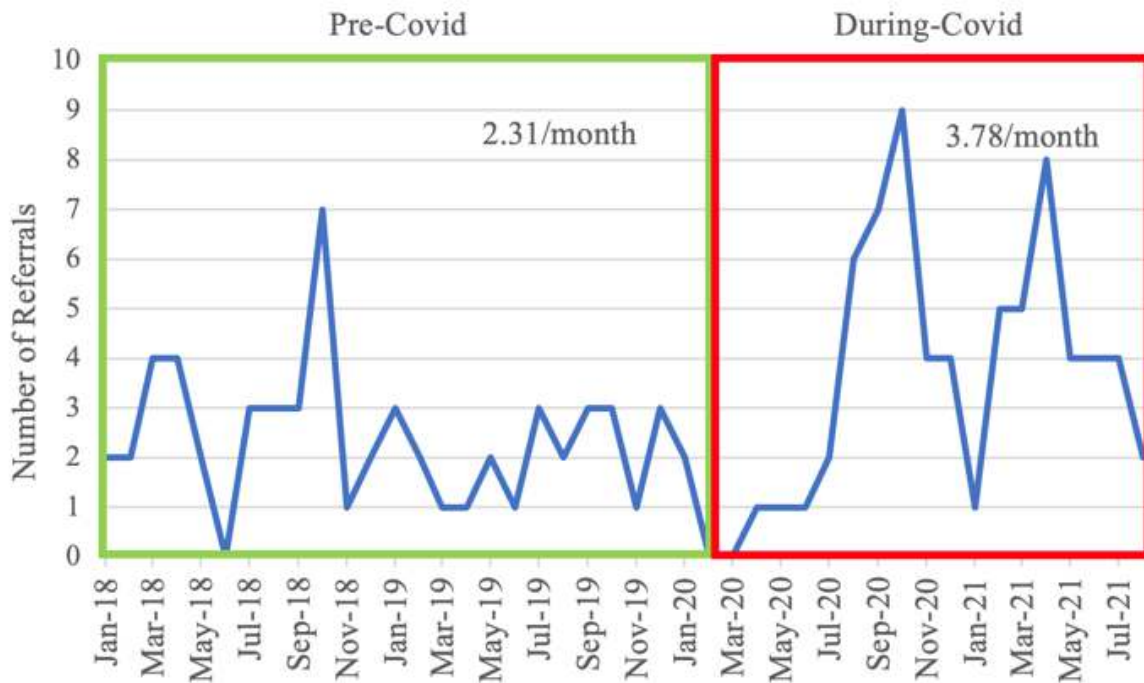


Figure 1: Number of FBT referrals from January 2018-August 2021.

ID number _____

Year Presenting: 2017/2018/2019/2020/2021	Month: J/F/M/A/M/J/J/A/S/O/N/D
Age at PC (Month and year only)	Gender: M/F/O
Exam Year at PC: JC/LC	School: Primary or secondary
Referral Source: Other: _____	GP/CAMHS/PLP/In-Pt/Other
Priority given by FBT clinic at referral: Urgent/Semi-U/ Routine	Priority given by GP/referrer at referral: Urgent/Semi-U/ Routine
Dx Given: AN/ BN/ BED/ ARFID/ EDNOS/ other Other: _____	Co-morbid Dx: Mood/Anx/ASD/OCD/ other Other: _____
Deliberate self-harm/Overdose: Yes/No/NK *Actions*	Thoughts self-harm/Overdose: Yes/No/NK *Thought Only*
Premorbid (last healthy) wt/ht/BMI/IBW:	Assessment wt/ht/BMI/IBW:
Lowest wt/ht/BMI/IBW	FBT DC wt/ht/BMI/IBW
Admitted anywhere? Medical / psychiatry; Yes/No/NK Duration in months: _____	Duration wt loss in months (refers to from onset of illness to CAMHS referral): _____
Physical issues of concern: HR/ BP/ ECG/ Bloods/ Phys symptoms _____	Yes/No/NK
Degree of concern re any physical issues	Significant/ minor/none
Treatment FBT alone, Shared FBT-CAMHS OPD	FBT/ Shared
Temporal Relationship to Covid: ED-related psychopathology preceded Covid (pre), linked to Covid onset (Onset -i.e., March-May 2020), during Covid (from June 2020 on-referred to as 'post')	Pre-C/Onset-C/Post-C
Specific Covid factors: Covid-illness/Death/Job Loss/Lockdown Restrictions/adversity; other State: _____	Yes/No/NK
Perceived Impact /relevance of Covid:	Significant/ minor/none
Medication	Yes/No/NK _____
Post FBT involvement, Discharge to CAMHS/ GP / Other	CAMHS/ GP / Other

Figure 2. Data collection project proforma.

Discussion

This review of referrals over a three-year period to a specialist ED program, confirms what is already known about EDs in terms of occurrence typically having a female predominance, occurring during adolescence, and presenting with low IBW%.

However, in line with Irish National Data, this review confirms an increase in presentations during COVID-19 to specialist eating disorder teams in community settings and suggests that clinical presentations are somewhat different⁴.

Worldwide, paediatric ED presentations have increased, leading concerned clinicians to refer to a 'tsunami' or 'an outbreak' of AN admissions, following a 104% increase in referrals^{10,11}. A retrospective case note review of referrals to a paediatric tertiary ED treatment program in Canada (N=48) covering a seven-month period (April-October 2020), examined the impact of COVID-19 on clinical profile¹². Of their sample, 40% were considered to have their ED triggered by the pandemic. They found a higher rate of medical instability in COVID-19 triggered cases (79% versus 55%) and when IBW% was compared with 2019, youth presenting during the pandemic had lower IBW%, higher self-reported impairment and were medically more unstable¹¹.

Fear was expressed early on about the impact of 'stay at home' orders and lockdowns on help-seeking hesitancy and lack of access to services. Although there was a successful compensatory move to telepsychiatry, limited access to face-to-face services for youth where medical reviews constitute an important part of treatment monitoring was a concern¹², and might have contributed to delayed help seeking, lower IBW% and account in part for the increased ED attendances⁸. The increased number of referrals, and shorter time to refer to the ED specialist program, might reflect a true increase of more clinically sinister ED pathology, during COVID-19, or might reflect an increased onward referral from generic CAMHS exposed to unmanageable demand. Data collected from the CAMHS linked to the ED specialist program, saw a dramatic 50% increase in both routine and urgent referrals from September 2020 compared to previous years (2018-2019), with the highest increase in November 2020 (180%)¹⁴. Clinic activity also increased from September 2020, with double the number of out-patient appointments offered compared to previous years and significantly lower rates of non-attendance¹⁴. This increased CAMHS demand might have triggered increased referrals to the specialist ED program.

The extent and nature of psychological difficulties in youth during COVID-19 is complex. In the current study, many youths self-declared COVID-19 as having had an adverse effect on their overall wellbeing, and this was viewed as contributory to their ED pathology. Reduced peer support, school attendance and inability to engage in usual sporting and academic endeavors were reported by youth to have contributed to increased anxiety and low mood, prompting self-doubt and poor self-image, including body dissatisfaction.

Periods at home, in unstructured settings offered an easy opportunity to be exposed to food, and to engage in binge-purge cycles and to overindulge in exercise routines. However, three youth felt their pre-existing EDs had improved, linked to reduced peer and academic pressure, increased parental meal supervision and an overall increase in family quality time. Further research is warranted investigating how the pandemic may both positively and negatively impact the psychological functioning of youth and the nature by which food and exercise are used to cope with adversity.

It remains unclear whether the spike in referrals witnessed during COVID-19 reflect new onset psychopathology or exacerbations of symptoms in groups already at greater risk. Whether referrals to the specialist ED program reflect changes in prevalence and clinical presentation, driven by an increased awareness by clinicians or parents spending more time at home, as to possible ED psychopathology, or reflective of increased workloads on CAMHS needs further examination. Despite these limitations, to the author's knowledge, this is the first study to describe in detail patterns of referrals to a specialist ED program over a 3.5 year period, allowing comparison of pre and post COVID-19 periods. The study's relatively small sample size limits statistical power. Given the specialist nature of the study's ED program, the results may also not be generalizable to youth with EDs being treated in CAMHS.

Lockdown restrictions during the pandemic may have triggered EDs in young people. Youth with EDs referred to a specialist ED program during COVID-19 exhibited a shorter duration of illness but faster rate of % ideal body weight loss. The clinical presentation differed with significantly fewer youth prescribed psychotropic medication and a trend for increased comorbidity.

Research shows, early intervention is associated with better outcomes¹⁵. In our study, cases were referred with a shorter duration of illness allowing the possibility of early intervention and associated positive outcomes. However, these cases may alternatively represent a more aggressive presentation, with rapid and significant weight loss, clouding or confounding the treatment trajectory. To examine whether the early referral of covid related eating disorders have the expected benefit of early intervention, further longitudinal assessment is warranted.

Health services should mobilize funds to ensure adequate access to ED assessment and appropriate treatment. Future research is warranted to better understand the effects of the COVID-19 pandemic on ED onset, presentation, and trajectory amongst youth. Health promotion campaigns also need to be evaluated to limit any unintended consequences and to ensure a balance between adaptive and maladaptive responses.

Declaration of Conflicts of Interest:

The author, SC, KM, OL, MMcK and FMcN have no competing interests to declare.

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