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## Introduction

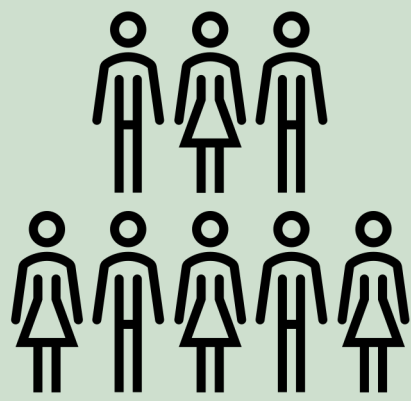
Clinicians have noticed a significant increase in cases of youth with an eating disorder (ED) presenting since the beginning of COVID-19 lockdown. It remains unclear whether the spike in ED presentations reflects broader behavioural changes in young people or exacerbations of symptoms in groups already at greater risk. The evidence-based treatment of ED in children is family-based treatment (FBT) as an outpatient. Authors hypothesised that differences would exist in the characteristics of pre-COVID referrals to a FBT clinic compared to those during-COVID.

## Aims and Objectives

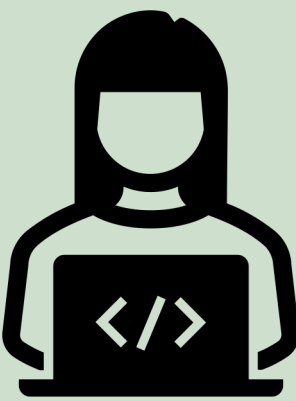
To explore the effect of COVID-19 on presentations to an FBT team in a child and adolescent mental health service (CAMHS) setting.

1. To examine the numbers, clinical type and complexity of all children presenting to CAMHS with ED during the pre COVID timeframe of January 2018, to March 2020 to establish a baseline for comparison.
2. To compare clinical presentations and patterns over a 15-month period pre (January 2019-March 2020) and during COVID-19 (March 2020-May 2021).
3. To observe changing patterns and consider whether these relate to the COVID-19 related restrictions or follow a more general increase in ED over time.

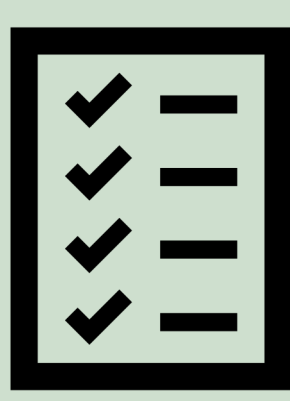
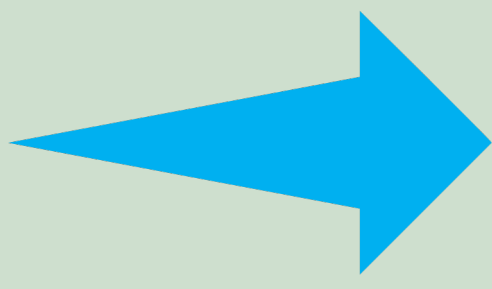
## Methods



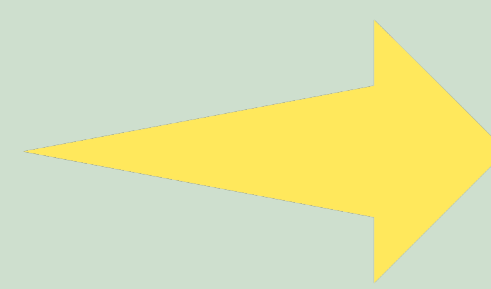
Participants were referred to a CAMHS specialist FBT ED service. Individuals meeting criteria for FBT are children and adolescents aged 9 to 17 years with EDs who are referred by medical practitioners



A retrospective chart review was completed of all initial multi-disciplinary assessment patient notes

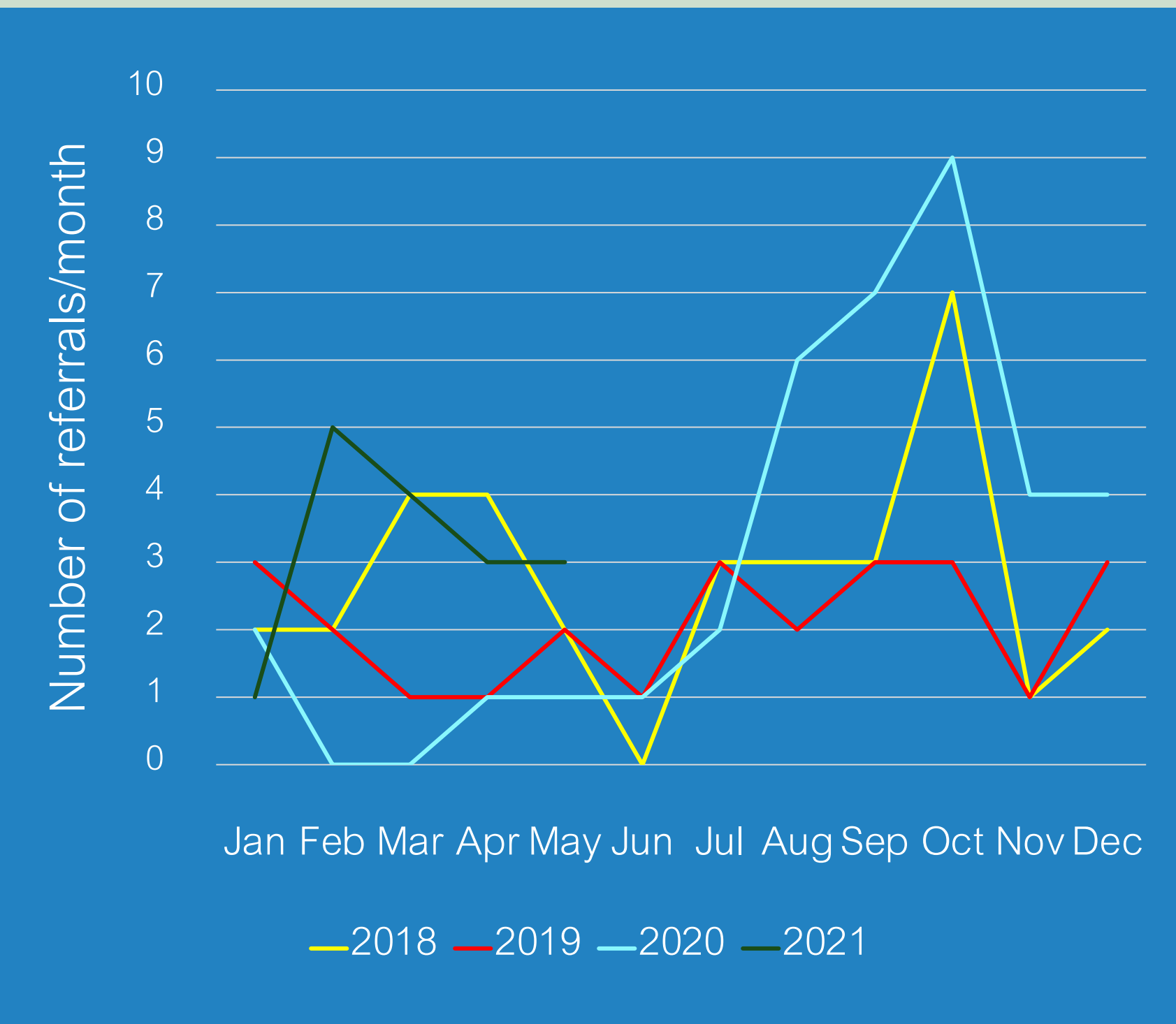


Data was extracted from the mental health information system (MHIS) record and entered into a specific study proforma

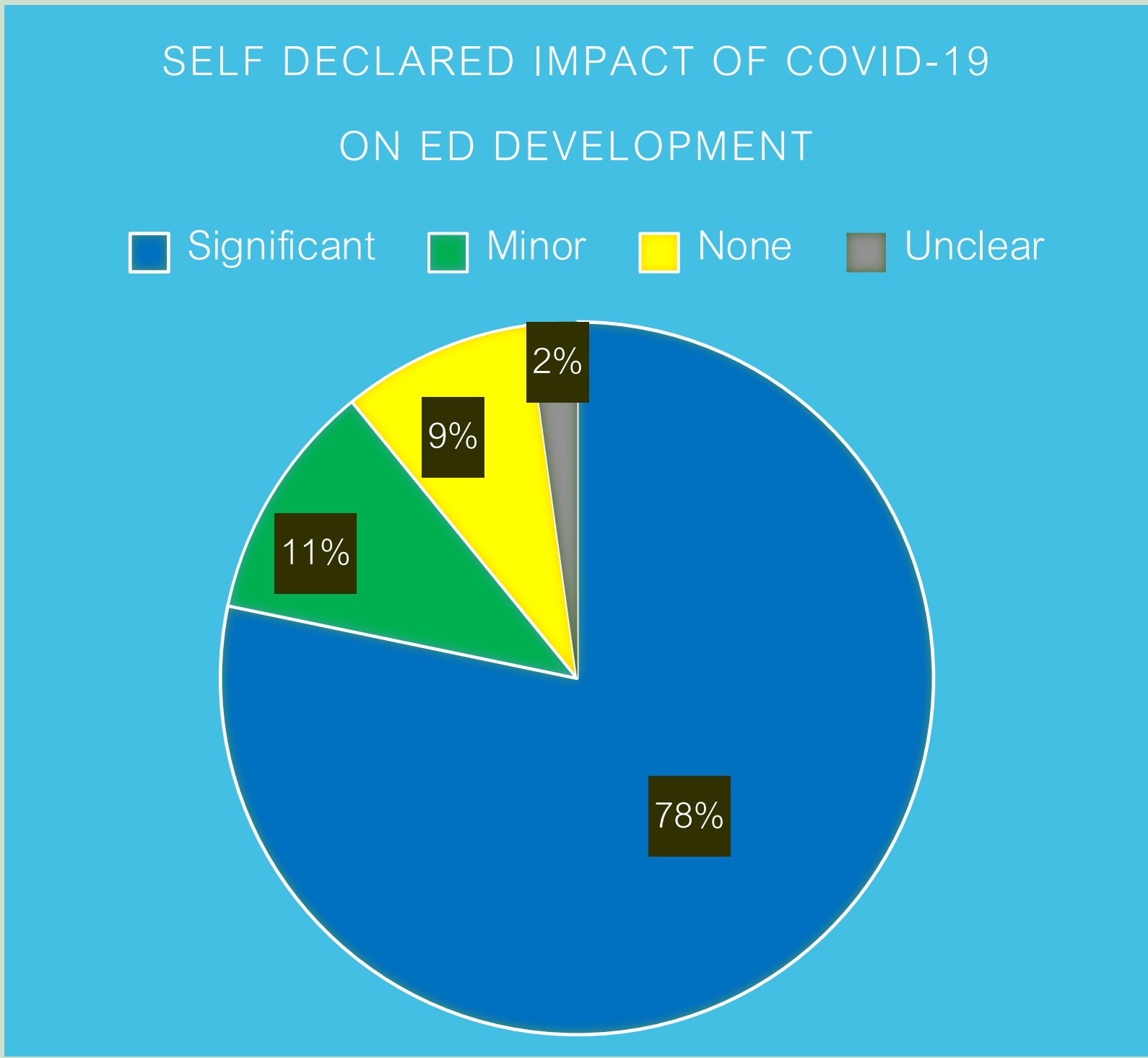


Data was compared over the study time periods pre-COVID and during COVID

## Results



**Graph 1.** Monthly trend in referrals rate by month for 2018 to 2021 to a specialist eating disorder service



**Graph 2.** Self declared impact of COVID-19 on eating disorder development in young people referred to a specialist eating disorder service

Characteristics	Total Sample	Pre-COVID	During/post-COVID	p-value <sup>a</sup> (chi-square or independent samples t-test)
N (%)	111	65 (59)	46 (41)	
Referrals per month	2.7	2.4	3.3	
Age years, mean (SD)	14.43 (2.03)	14.6 (2.1)	14.2 (2)	.304
Sex, n (%)	F: 102 (92) M: 9 (8)	F: 60 (92) M: 5 (8)	F: 42 (91) M: 4 (9)	.849
In primary or secondary school, n (%)	Primary: 15 (14) Secondary: 96 (87)	Primary: 10 (15) Secondary: 55 (85)	Primary: 5 (11) Secondary: 41 (89)	.493
Eating disorder type, n (%)	AN <sup>b</sup> : 102 (92) ARFID <sup>c</sup> : 5 (5) EDNOS <sup>d</sup> : 3 (3) Exercise addiction: 1 (1)	AN: 62 (95) ARFID: 2 (3) EDNOS: 1 (2) Exercise addiction: 0 (0)	AN: 40 (87) ARFID: 3 (7) EDNOS: 2 (4) Exercise addiction: 1 (2)	.374
Number of co-morbidities n (%)	None: 23 (21) 1: 52 (47) >1: 36 (32)	None: 13 (20) 1: 33 (51) >1: 19 (29)	None: 10 (22) 1: 19 (41) >1: 17 (37)	.592
Mood disorder, n (%)	64 (58)	36 (55)	28 (61)	.565
Anxiety disorder, n (%)	36 (32)	22 (34)	14 (30)	.705
Autism Spectrum Disorder, n (%)	13 (12)	6 (9)	7 (15)	.334
ADHD <sup>e</sup> , n (%)	5 (5)	3 (5)	2 (4)	.947
OCD <sup>f</sup> , n (%)	4 (4)	3 (5)	1 (2)	.497
Other disorder, n (%)	7 (6)	6 (9)	1 (2)	.132
Any psychotropic medication, n (%)	38 (34)	28 (43)	10 (22)	.039
Self-harm or overdose, n (%)	26 (23)	15 (23)	11 (24)	.956
Thoughts of self-harm or overdose, n (%)	33 (30)	21 (32)	12 (26)	.728
Any inpatient admission for ED, n (%)	48 (43)	27 (42)	18 (39)	.302

<sup>a</sup> *p*-values comparing pre-COVID and during-COVID referrals, <sup>b</sup> Anorexia nervosa, <sup>c</sup> Avoidant restrictive food intake disorder, <sup>d</sup> Eating disorder not otherwise specified, <sup>e</sup> Attention-deficit/hyperactivity disorder, <sup>f</sup> Obsessive-compulsive disorder

**Table 1.** Referral characteristics of children and adolescents pre-COVID and during-COVID referred to a CAMHS specialist family based therapy eating disorder service with an eating disorder.

Characteristics	Total Sample	Pre-COVID	During/post-COVID	p-value <sup>a</sup> (chi-square or independent samples t-test)
Duration weight loss months pre referral, mean (SD)	6.1 (4.1) N: 108	7.4 (4.5) N: 62	4.4 (2.9) N: 46	<.001
Weight loss rate per month from premorbid weight to assessment weight kg/month, mean (SD)	2.16 (1.8) N: 65	1.94 (2.3) N: 14	2.3 (1.4) N: 41	.050
Premorbid IBW <sup>b</sup> %, mean (SD)	103.4 (14.3) N: 50	101 (14.2) N: 10	103.9 (14.5) N: 40	.575
Assessment IBW <sup>b</sup> %, mean (SD)	85.39 (11.1) N: 101	83.1 (8.3) N: 55	88.13 (13.4) N: 46	.023
Lowest IBW <sup>b</sup> %, mean (SD)	83.13 (10.2) N: 92	81.3 (8.6) N: 50	85.29 (11.6) N: 42	.062
FBT discharge/latest review IBW <sup>b</sup> %, mean (SD)	92.8 (16.6) N: 88	89.93 (19.9) N: 50	96.46 (9.9) N: 38	.047

<sup>a</sup> *p*-values comparing pre-COVID and during-COVID referrals, <sup>b</sup> Ideal bodyweight

**Table 2.** Ideal bodyweights of children and adolescents pre-COVID and during-COVID referred to a CAMHS specialist family-based therapy eating disorder service with an eating disorder.

## Discussion

- Differences existed between the referral characteristics of the pre-COVID and during-COVID cohorts.
- An increase in the rate of FBT referrals from 2.4/month pre-COVID to 3.2/month during-COVID was observed. This aligns with the internationally observed surge in CAMHS referrals during COVID-19, particularly with ED. <sup>[1]</sup>
- There was a higher proportion young people taking psychotropic medication pre-COVID while a higher rate of ASD diagnoses was observed during-COVID along with a higher proportion of ARFID and EDNOS diagnoses. Pandemic related changes in schooling, structure and routine might have contributed to additional anxiety in youth with ASD. Increase selective eating in youth with ASD might reflect a coping strategy to deal with COVID-19 related unpredictability and stress.
- The duration of ED symptoms, speed of weight loss and ideal bodyweight (IBW) at time of referral also differed between time frames. Youth referred post-pandemic had a more rapid weight loss per month, suggestive of a more aggressive ED presentation during COVID. This is consistent with other authors. <sup>[2]</sup> The higher IBW at time of assessment of 83% pre-COVID compared to 88% during-COVID (P value: .023) most likely reflects the shorter duration between illness onset and referral.
- Many youth (80%) self-declared COVID-19 as having had an adverse effect on their overall wellbeing and as a contributory factor to their ED pathology.

## Conclusion

Youth with EDs referred to specialist ED services during the COVID-19 pandemic exhibit a shorter duration of weight loss, a faster rate of weight loss and are more likely to receive an ED diagnosis other than AN. ED services are seeing increased rate of referrals. Health services should mobilise funds to ensure access to appropriate ED treatment.

## References

1. Solmi, F., Downs, J., & Nicholls, D. (2021). COVID-19 and eating disorders in young people. *The Lancet Child & Adolescent Health*, 5(5), 316-318. doi: 10.1016/s2352-4642(21)00094-8
2. Spettigue, W., Obeid, N., Erbach, M., Feder, S., Finner, N., & Harrison, M. et al. (2021). The impact of COVID-19 on adolescents with eating disorders: a cohort study. *Journal Of Eating Disorders*, 9(1). doi: 10.1186/s40337-021-00419-3