Child and adolescent self-harm in a pandemic world: Evidence from a decade of data

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Abstract

Background: Little is known about the COVID-19 pandemic impact on child and adolescent mental health, specifically self-harm. This paper serves to form a basis for understanding and planning an appropriate response to the present and longstanding child and adolescent mental health needs with global recommendations for integrated community support and disaster preparedness.

Methods: Anonymous, aggregated data from an established regional child and adolescent addictions and mental health service was employed to examine differences in the rates of self-harm as the primary reason for referral among the health-seeking population represented by quarter by year from 2010-2022 to examine whether self-harm rates have increased since the onset of the COVID-19 pandemic.

Results: Females and self-defined sex had higher rates of self-harm referrals compared to males. Both total and first-time self-harm referrals since the COVID outbreak in 2020 did not exceed the highest quarterly rates before COVID since 2010.

Discussion: Since the COVID-19 pandemic, self-harm rates in one Canadian region remain stable and lower than the highest rates previously observed over the last decade. Given misplaced alarmist news and reports, a coherent, evidence-based, dynamic national response to mental health, social support, and disaster planning is required to fully understand how best to respond to the pandemic in general with a sustainable social support and disaster preparedness policy strategy and specifically the ongoing and pandemic-related mental health needs of the child and adolescent help-seeking population.

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Acronyms

- CAAMHPP: Child and Adolescent Addictions and Mental Health and Psychiatry Program
- CDC: Centers for Disease Control
- COVID-19: Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)
- Std. Dev.: Standard Deviation

Introduction

In May 2021, the U.S. Centers for Disease Control (CDC) announced a post-COVID-19 surge of “suspected suicide attempt” presentations, especially among adolescent females, across a sample of emergency departments in the United States.[1] Even in Canada, report of projected suicide rates[2] before the fact of a coherent approach to defining estimated suicidality-related parameters may precipitate a ‘moral panic’ and increase the probability of reflexive, misplaced policy development, strategic planning, and investment.

The CDC announcement may have overestimated youth suicidal presentations to emergency departments. Additionally, the approach to pandemic policy with respect to child and adolescent mental health requires thoughtful guidance and rigorous examination of valid and reliable information from across Canada. There remains the ongoing need to focus on the longstanding service gaps around child and adolescent mental health, as with general mental health, health, and social support in general[3][4], that will likely transcend the global pandemic; issues not far removed from the requirement for a sustainable, nationally supported, dynamic, community-level, disaster preparedness policy strategy.

This paper presents an analysis since 2010 of self-harm referrals to regional Child and Adolescent Addictions and Mental Health and Psychiatry Program (CAAMHPP) services in Calgary, Alberta, wherein a standard ‘self-harm’ definition as the primary reason of referral among others is in place. In this region, self-harm includes both suicidal and non-suicidal forms of self-harm.[5]

Methods

The study was a 12-year retrospective case series analysis of self-harm referrals to a regional, publicly funded, child and adolescent addiction and mental health and psychiatry program services that have been fully described.[6]

Study Setting

The study was conducted in CAAMHPP services in Alberta Health Services, Calgary Zone.

Data source

The regional access and intake system (RAIS)[6] is the CAAMHPP registration system containing the referral dates, demographics (sex), reasons for referral (self-harm) employed in the analysis. Aggregated, de-identified information represented in Tables 2 was extracted from the RAIS for the period including January 2010 to June 2022.

Analysis

The aggregated data were employed to calculate the proportion of the total referrals (Table 1: n= 172,563 total referrals) for 84,503 unique individuals with 2.5 admissions on average, standard deviation 2.7, and range 1-116) that were referrals within the help-seeking population for each of two groups. One group was the total referrals for self-harm (13,301 unique individuals with on average 2, standard deviation 2, and range 1-56 referrals) and the third group was the first-time or incident referrals for self-harm for each quarter (3-month intervals) for all years from January 2010 until the end of the second quarter in June 2022.

Ethical approval

Data for this paper was collected under ethics ID-REB15-1057.

Results

Table 1 shows the age and sex distribution of the total referrals and referrals for self-harm from 2010-2022. The self-harming groups for each sex tended to be older and more frequently female or self-defined. Chi square analysis revealed the overall self-harm differences comparing males, females, and self-defined sex.

Table 1. Age and sex distribution by group of the total referrals and referrals for self-harm from 2010-2022.

Sex	Statistic	No Self-Harm	Self-Harm	Total
Male	Mean Age	11.8	15.3	12.1
	Std. Dev.	4.6	2.7	4.6
	n	64,355	6,690	71,044
Female	Mean Age	13.7	15.3	14
	Std. Dev.	4	2	3.8
	n	81,149	17,089	98,238
Self-Defi	Mean Age	14.5	14.9	14.6
	Std. Dev.	2.9	1.9	2.6
	n	2,331	9,49	3,280
Total	Mean Age	12.9	15.3	13.2
	Std. Dev.	4.4	2.2	4.2
	n	147,835	24,728	172,563

The from the aggregated data (Table 2), the proportion of the total referrals by quarter that were self-harm referrals within the help-seeking population for each of two groups were calculated and represented in Figure 1.

Table 2: Total referrals by year.

Referrals	Frequency	Percent	Cumulative
2010	6,445	3.73	3.73
2011	8,851	5.13	8.86
2012	10,028	5.81	14.68
2013	11,667	6.76	21.44
2014	12,530	7.26	28.70
2015	13,354	7.74	36.44
2016	13,690	7.93	44.37
2017	15,782	9.15	53.51
2018	15,821	9.17	62.68
2019	18,020	10.44	73.13
2020	16,990	9.85	82.97
2021	20,704	12.00	94.97
2022	8,681	5.03	100.00
Total	172,563	100	

Figure 1 shows the self-harm proportion (% total) of referrals by quarter by year and the proportion (% total) of the first-time referrals for self-harm.

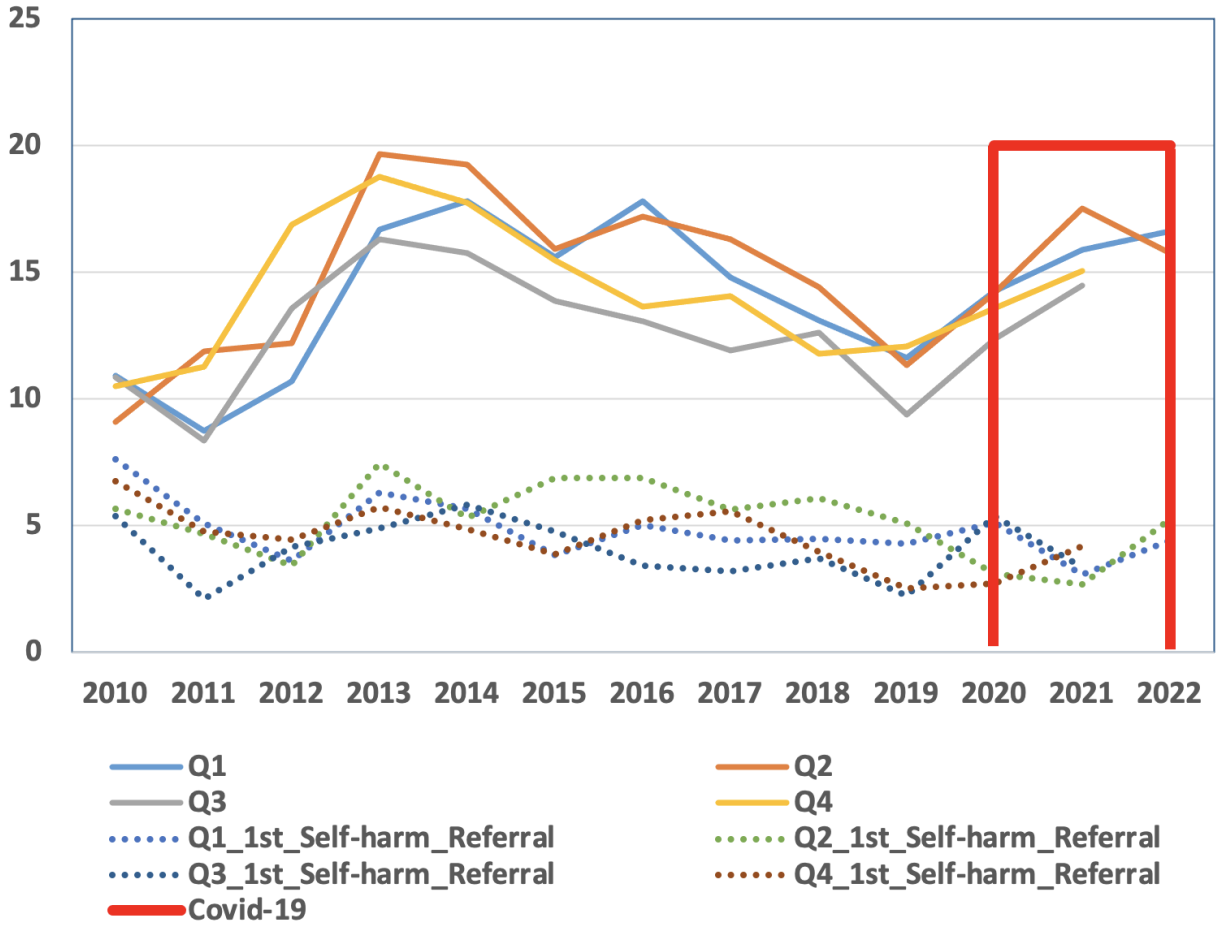

Figure 1. Total unique and first-time quarterly referrals for self-harm by year.

From Figure 1, it may be observed that the proportion of self-harm referrals to CAAMHPP[6] increased in the first quarter of 2020 in comparison to 2019. However, since the COVID-19 pandemic outbreak up to the end of the second quarter of 2022, neither the proportions for total nor first-time referrals have increased disproportionately compared to the maximum (higher) values over the previous ten years (e.g., 2013, 2014, 2016).

Discussion

This study represents only one Canadian catchment area. There may be pockets throughout Canada where the self-harm (e.g., suicidality) might be different. What is called for is a coherent, multi-site, nation-wide approach to define self-harm and collect relevant data. This activity is a necessary precursor for developing a valid and reliable approach to examine whether and where there may have been an actual increase in the rate of self-harm (e.g., suicidality) following the pandemic outbreak of the COVID-19.

To understand and respond to the potential effect of the COVID-19 pandemic, a dynamic, locally integrated, national mental health, social support and disaster preparedness policy at minimum requires a three-fold approach:

1. National health-care integrated surveillance system for rapid measurement of mental and other disorders and diseases.[7]
2. Development of basic community-level social support and disaster preparedness.[8]
3. Address the long-standing unmet need and gaps of child and adolescent mental health services that in future may encompass more evolved and elastic responses to both local and global crises.[6]

Conclusion

Innovations in child and adolescent mental health services in the present and future pandemic world may not be too far removed from innovations in community-level social support integrated with disaster preparedness planning. Also, the movement to providing online services may be here to stay for those that prefer this as a mode of service, along with the development of more futuristic virtual reality services. Both online and virtual services may help to take pressure off required tertiary face-to-face service encounters. To have coherent national, provincial, and local community-level targeted policy guiding programs that integrate local child-care, elder care, together with basic health, mental health, and social resources[15] could necessarily also be a loci for disaster preparedness[8] in addition to sustainably shaping the demand of over-stressed and inadequate social, health, and specifically child and adolescent mental health services.[6]

Limitations

The self-harm definition employed as the primary reason for referral in this study included both suicidal and non-suicidal self-harm. Other services not included in the dataset are available in the Calgary Zone for children and youth, so the reported self-harm rates likely underestimate the true rate of self-harm, even though the dataset does include visits to emergency departments within the catchment.

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