Intentional Self-Harm Overdoses Before and During the COVID-19 Pandemic in Adolescents Managed by a Medical Toxicology Consultation Service

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Intentional Self-Harm Overdoses Before and During the COVID-19 Pandemic in Adolescents Managed by a Medical Toxicology Consultation Service

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Background

Since March 2020 to present, the world has been coping with the COVID-19 pandemic and the associated social ramifications. It has impacted community mental health, with several studies demonstrating an increase in anxiety and depression among adults and adolescents during the pandemic. The reasons are multifactorial, however, may be related to a decrease in access to outpatient appointments, social distancing, financial hardships, loss of loved ones, and closures of schools, jobs, and recreational activities. We aim to review adolescent intentional self-harm overdose cases presenting to our tertiary care hospital system's medical toxicology consultation service prior to and during the pandemic.

Methods

We reviewed bedside medical toxicology consultations from May 2018-Feburary 2020 (22 months preCOVID-19) and March 2020-December 2021 (22 months during COVID-19) for self-harm cases in adolescents ages 10-19 years old. Descriptive analysis was performed on these groups for variables including number of self-harm cases, number of intentional overdoses, age, sex, and primary agent used.

Results

The total number of intentional ingestions in adolescents 10-19 years-old from May of 2018-December of 2021 was 396: there were 174 cases between May 2018-Feburary of 2020 with 95 cases (54.5%) being self-harm cases, and 222 cases between March of 2020-December of 2021 with 145 (65.3%) cases being self-harm cases.

Of the 95 intentional self-harm overdoses in the preCOVID-19 timeframe, analgesics were the most commonly used medication class (30.5%; n=29). Analgesic medications included acetaminophen, aspirin, and ibuprofen. Acetaminophen was the most commonly used medication for overdose from May of 2018-Feburary 2020 (23.1%; n=21). Antidepressants were the next largest group of medications used (27.4%; n=13). The other types used for overdose preCOVID-19 were anticonvulsants (5.3%, n=5), anticholinergic/antihistamine (13.7%, n=13), antimicrobials (2.1%, n=2), antipsychotics (8.4%, n=8), cardiovascular medications (4.2%, n=4), Lithium (n=1), Iron (n=1), opioids (n=1), and sedatives-hypnotics (5.3%; n=5). In the preCOVID19 time period, cases were 84.2% female (n=80), 13.7% male (n=13), and 2.1% (n=2) transgender (male-to-female, female-to-male, and gender non-conforming).

In the 145 self-harm cases during the COVID-19 timeframe, analgesics were most commonly used (32.4%; n=47), and acetaminophen was the most common medication used overall (24.1%; n=35). Antidepressants were involved in 31% (n=45). Other agents were ethanol (n=1), methanol (n=1), anticholinergic/antihistamine (8.3%, n=1), anticonvulsants (5.5%, n=8), antimicrobials (n=1), antipsychotics (4.1%, n=6), cardiovascular medications (5.5%, n=8), caustic (n=1), Dextromethorphan (n=1), Lithium (1.4%, n=2), opioids (2.1%, n=3), sedative hypnotics (3.4%, n=5), and sympathomimetics (1.4%, n=2). Out of this group, 78.6% (n=114) were female, 16.6% (n=24) were male, and 4.8% (n=7) were transgender.

Conclusion

In the COVID-19 time period, there was an increase in self-harm cases and intentional overdoses managed by the medical toxicology consultation service. The most common medications used for intentional overdose during both time periods were analgesics and antidepressants, with the most commonly used agent being acetaminophen. The majority of intentional self-harm cases were among females. Future research could focus on larger scale epidemiological data on self-harm overdoses to determine the impact of the pandemic on mental health.

CHART 1: MEDICATIONS USED FOR INTENTIONAL SELF-HARM OVERDOSE PRECOVID-19 AND DURING COVID-19

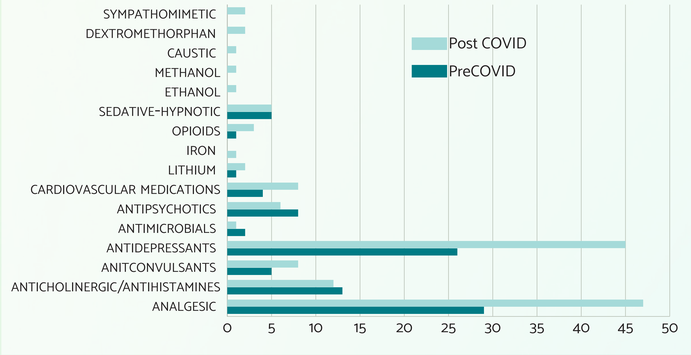

TABLE 1: MEDICATIONS USED FOR INTENTIONAL SELF-HARM AMONG ADOLESCENTS IN PRECOVID-19 TIMEFRAME AND DURING COVID-19 TIMEFRAME.

PreCOVID-19 (May 2018-Feb. 2020) Intentional Overdoses		During COVID-19 (March 2020-Dec. 2021) Intentional Overdoses	
Medication Used	Number of Patients	Medication Used	Number of Patients
Acetaminophen (Analgesic)	21	Ethanol	1
Aspirin (Analgesic)	3	Methanol	1
Ibuprofen (Analgesic)	5	Acetaminophen (Analgesic)	35
Diphenhydramine (Anticholinergic/Antihistamine)	12	Acetylsalicylic Acid (Analgesic)	4
Hydroxyzine (Anticholinergic/Antihistamine)	1	Aspirin (Analgesic)	4
Ethosuximide (Anticonvulsant)	1	Gabapentin (Analgesic)	1
Lamotrigine (Anticonvulsant)	3	Ibuprofen (Analgesic)	3
Valproic Acid (Anticonvulsant)	1	Dicyclomine (Anticholinergic/Antihistamine)	1
Amitriptyline (Antidepressant)	1	Diphenhydramine (Anticholinergic/Antihistamine)	8
Bupropion (Antidepressant)	6	Doxylamine (Anticholinergic/Antihistamine)	1
Citalopram (Antidepressant)	6	Hydroxyzine (Anticholinergic/Antihistamine)	2
Escitalopram (Antidepressant)	3	Lamotrigine (Anticonvulsant)	2
Fluoxetine (Antidepressant)	2	Oxcarbazepine (Anticonvulsant)	2
Nortriptyline (Antidepressant)	1	Topiramate (Anticonvulsant)	2
Sertraline (Antidepressant)	3	Valproic Acid (Anticonvulsant)	1
Trazadone (Antidepressant)	1	Unspecified Anticonvulsant (Anticonvulsant)	1
Venlafaxine (Antidepressant)	3	Escitalopram (Antidepressant)	10
Doxycycline (Antimicrobial)	1	Citalopram (Antidepressant)	2
TMP/SMX (Antimicrobial)	1	Amitriptyline (Antidepressant)	3
Quetiapine (Antipsychotic)	8	Bupropion (Antidepressant)	9
Clonidine (Cardiovascular)	2	Duloxetine (Antidepressant)	2
Guanfacine (Cardiovascular)	1	Fluoxetine (Antidepressant)	4
Lisinopril (Cardiovascular)	1	Fluvoxamine (Antidepressant)	1
Lithium	1	Mirtazapine (Antidepressant)	2
Iron	1	Nortriptyline (Antidepressant)	1
Tramadol (Opioid)	1	Paroxetine (Antidepressant)	2
Alprazolam (Sedative-Hypnotic)	1	Sertraline (Antidepressant)	5
Baclofen (Sedative-Hypnotic)	2	Venlafaxine (Antidepressant)	4
Tizanidine (Sedative-Hypnotic)	1	Nitrofurantoin (Antimicrobial)	1
Unspecified sedative (Sedative-Hypnotic)	1	Olanzapine (Antipsychotic)	1
		Quetiapine (Antipsychotic)	5
		Clonidine (Cardiovascular)	4
		Guanfacine (Cardiovascular)	3
		Prazosin (Cardiovascular)	1
		Caustic (cleaning agent)	1
		Dextromethorphan	2
		Lithium	2
		Codeine (Opioids)	1
		Methadone (Opioids)	1
		Oxycodone (Opioids)	1
		Buspirone (Sedative-Hypnotic)	1
		Clonazepam (Sedative-Hypnotic)	2
		Lorazepam (Sedative-Hypnotic)	1
		Phenobarbital (Sedative-Hypnotic)	1
		Amphetamine (Sympathomimetic)	1
		Dextroamphetamine (Sympathomimetic)	1

In the COVID-19 time period there was an increase in self-harm cases and intentional overdoses, the most common agent being acetaminophen.

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