

Suicide Attempts Using Medications During the COVID-19 Pandemic in the State of Piauí

Tentativas de suicídio usando medicamentos durante a pandemia da Covid-19 no Estado do Piauí

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ABSTRACT

Attempts of suicide represent a significant public health issue, exacerbated during the COVID-19 pandemic due to social isolation and the increase in mental disorders. This study aimed to analyze the epidemiological profile of suicide attempts involving medications in Piauí between 2020 and 2022. It is an epidemiological, retrospective study based on SINAN data. Variables such as year, gender, age group, ethnicity, and education level were analyzed, with calculations of simple and relative frequencies and the use of the Chi-Square test ($p < 0.05$). Between 2020 and 2022, 2,155 suicide attempts were recorded, with the highest number occurring in 2022 (38.2%). Most cases involved women (80.6%), particularly those aged 20 to 39 years (47.8%), of mixed ethnicity (52%), and with a high school education (18.6%). The lethality rate was 0.23%, and complete recovery without sequelae was the main clinical outcome (69.2%). The increase in cases over time may be attributed to the exacerbation of pandemic effects, such as social isolation and financial stress. Thus, public policies focused on mental health, access to psychological support, and medication control are essential to address this challenge and reduce the rates of morbidity and mortality associated with it.

Keywords: Suicide Attempt. COVID-19. Pandemic.

RESUMO

As tentativas de suicídio representam um importante problema de saúde pública, agravado durante a pandemia de COVID-19 devido ao isolamento social e ao aumento de transtornos mentais. Este estudo teve como objetivo analisar o perfil epidemiológico de tentativas de suicídio utilizando medicamentos no Piauí entre 2020 e 2022. Trata-se de um estudo epidemiológico, retrospectivo, baseado em dados do SINAN. Foram analisadas variáveis como ano, sexo, faixa etária, etnia e escolaridade, com cálculo de frequências simples e relativa e uso do teste Qui-Quadrado ($p < 0,05$). Entre 2020 e 2022 foram registradas 2.155 tentativas de suicídio, em que o maior número ocorreu em 2022 (38,2%). A maioria dos agravos envolveu mulheres (80,6%), especialmente entre 20 a 39 anos (47,8%), de etnia parda (52%), nível médio de escolaridade (18,6%). A taxa de letalidade foi de 0,23% e a cura sem sequela foi o principal desfecho clínico (69,2%). O aumento nos casos ao longo do tempo pode ser atribuído à exacerbção dos efeitos da pandemia, como isolamento social e o estresse financeiro. Desse modo, políticas públicas focadas em saúde mental, acesso a suporte psicológico e controle do uso de medicamentos são essenciais para enfrentar esse desafio e reduzir as taxas de morbimortalidade associadas.

Palavras-chave: Tentativa de Suicídio. COVID-19. Pandemia.

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1. INTRODUCTION

A suicide attempt is a harmful and non-fatal behavior, whereas suicide is self-directed violence that results in death (MESQUITA et al., 2024). In this context, the development of suicidal behavior is complex and may involve biological, psychological, clinical, social, and environmental factors, so that, depending on these variables, some individuals may exhibit a higher or lower likelihood of engaging in this act (TURECKI et al., 2019).

From an epidemiological perspective, more than 700,000 people die by suicide annually. Between 2000 and 2019, the global suicide rate decreased by 36%; however, in the Americas, there was a 17% increase. Among younger individuals aged 15 to 29 years, suicide has emerged as the fourth leading cause of death, ranking behind only traffic accidents, tuberculosis, and interpersonal violence (BRASIL, 2022).

Thus, suicide represents a significant public health issue, contributing to increased expenditures for the Unified Health System (SUS) and the distress of families affected by this burden (BRASIL, 2022; MESQUITA et al., 2024).

Among the primary means used in suicide attempts and suicide itself, medications, such as analgesics and psychotropics, stand out (TURECKI et al., 2019; CHANG et al., 2020). This may be related to the easy access to medications (SOUSA et al., 2020). Furthermore, the pandemic caused by the SARS-CoV-2 virus necessitated social isolation, which contributes to the development of mental health disorders, such as anxiety and depression, that can increase suicide rates (SOARES et al., 2024). Thus, social isolation and psychopathologies, coupled with access to medications, contribute to suicide attempts using drugs as exogenous intoxicants (MESQUITA et al., 2024).

In this regard, the present study aimed to analyze the epidemiological profile of individuals who attempted suicide using medications during the SARS-CoV-2 pandemic in the state of Piauí, between 2020 and 2022.

2. MATERIALS AND METHODS

This is an epidemiological, retrospective, descriptive, and analytical study that utilized secondary data retrieved from the Information System for Notifiable Diseases (SINAN) (ANDRADE JÚNIOR et al., 2019; ANDRADE JÚNIOR et al., 2021).

The study was conducted in the State of Piauí, located in the Northeast region of Brazil, with Teresina as its capital. Piauí has a territorial area of 251,755.481 km², a resident population of approximately 3,217,199 people in 2023, and a population density of 12.99

inhabitants per km². Additionally, the Human Development Index (HDI) is 0.69, and the average per capita household income is R\$ 1,342 (IBGE, 2023).

The analyzed variables included year, sex, age group, ethnicity, educational level, and clinical outcome with the calculation of simple and relative frequencies. Furthermore, the overall and sex-specific lethality rates were calculated.

Additionally, the *Statistical Package for the Social Sciences* (SPSS), version 13.0, was used, applying the Chi-Square Independence Test and considering $p < 0.05$ as statistically significant. Adjusted residuals (r) were considered positive when ≥ 1.96 .

3. RESULTS AND DISCUSSION

Between 2020 and 2022, 2,155 cases of suicide attempts were reported in the state of Piauí (Table 1).

Table 1. Simple and absolute frequencies of individuals affected by suicide attempts using medications, between 2020 and 2022.

Year	N	%
2020	535	24.8
2021	797	37.0
2022	823	38.2
Total	2,155	100

Source: Research Data, 2024.

2022 recorded the highest number of affected individuals, consistent with findings from a similar study conducted in the State of Paraíba during the same period (MESQUITA et al., 2024).

The increase in cases over time may be linked to the exacerbation of social isolation, financial issues associated with rising unemployment, fear, and reduced physical activity (SEABRA et al., 2021). Thus, measures encouraging healthier lifestyles and mental health support should be promoted to reduce case numbers after the pandemic period (Schuck et al., 2020), focusing on both individual and community-level interventions through health education (SILVA JÚNIOR et al., 2023).

Furthermore, it is worth noting that the first year of the pandemic in Brazil, 2020, showed the lowest number of cases in this study. Evidence indicates that there was no increase in suicides beyond the expected number during the first year of the SARS-CoV-2 pandemic in Brazil (SOARES; STHANKE; LEVANDOWSKI, 2023).

Regarding gender, women were the most affected (80.6%). For age groups, individuals aged 20 to 39 were most impacted (47.8%), followed by those

aged 15 to 19 (25.6%), 40 to 59 (15.2%), 10 to 14 (8.5%), 0 to 9 and 60 to 69 (both at 1.2%), 70 to 79 (0.3%), and 80 and older (0.2%).

Below, Table 2 shows the association between gender and age group.

Table 2. Cross-tabulation between gender and age group for suicide attempt cases using medications, from 2020 to 2022, in the State of Paraíba.

Variables	Male		Female		Total*	
Age group	N	%	N	%	N	%
Up to 19 years	106	37.6	+653	25.4	759	35.2
20 to 59 years	+299	60.8	1,057	71.7	1,356	62.9
Over 60 years	12	1.6	28	2.9	40	1.9
Total	417	100	1,738	100	2,155	100

*p= <0.001; + adjusted residues ≥1.96.

Source: Research Data, 2024.

When associating age group and sex, a positive association ($p < 0.001$) was observed for men aged 20 to 59 and women under 19. Similar results were found in a study conducted in the state of Paraíba (MESQUITA et al., 2024).

In general, females tend to attempt suicide more frequently, but mortality is more commonly observed in males, as they opt for more violent means, such as hanging and firearms, while females typically use medications for this purpose (RIBEIRO et al., 2018; MESQUITA et al., 2024), which allows for greater chances of patient stabilization and lower morbidity and mortality. In this context, the overall lethality rate was 0.23%, with a rate of 0.48% for males and 0.17% for females.

Cultural factors can also influence, such as smoking and alcoholism, as well as the hormonal cycle in women, contributing to the exacerbation of suicide attempts (QUEIROS et al., 2020).

Regarding age group, adults were the most affected, which coincided with the findings of Mesquita et al. (2024). This may be associated with the fact that individuals in this age group have greater access to medications (PEREIRA et al., 2021). It is interesting to note that the most commonly used drug groups are antidepressants, anticonvulsants, antipsychotics, and anxiolytics (QUEIROS et al., 2020), with the latter's use being intensified during the social isolation caused by the SARS-CoV-2 pandemic (BRAGA; OLIVEIRA; SANTOS, 2020).

Below in Table 3, the ethnicity of those affected by suicide attempts in the state of Piauí can be observed.

Table 3. Ethnicity of individuals affected by suicide attempts in the state of Piauí, using medications, between 2020 and 2022.

Ethnicity	N	%
Ignored	723	33.6
White	215	10.0
Black	87	4.0
Yellow	9	0.4
Mullato	1,120	52.0
Indigenous	1	<0.1
Total	2,155	100

Source: Research Data, 2024.

Regarding ethnicity, the brown group was the most affected (52%), followed by the white group (10%). This can be initially explained by the predominance of brown individuals in the state of Piauí. Similar results were observed in Paraíba (MESQUITA et al., 2024). Additionally, black populations are generally more associated with poverty issues, which intensified during the COVID-19 pandemic, contributing to an increase in stress, anxiety, depression, and consequently, suicide attempts.

Below, in Table 4, the ethnicity of those affected by suicide attempts in the state of Piauí can be observed.

Table 4. Level of education of individuals affected by suicide attempts in the state of Piauí, using medications, between 2020 and 2022.

Level of education	N	%
Ignored	1,345	62.4
No education	3	0.1
Low education	250	11.6
Medium education	401	18.6
High education	133	6.2
Not applicable	23	1.1
Total	2,155	100

Source: Research Data, 2024.

Regarding the average years of education, individuals with medium education levels were the most affected by suicide attempts during the COVID-19 pandemic using medications as an intoxicating agent. Similar results were found in a study conducted in the state of Paraíba (MESQUITA et al., 2024). However, a study conducted in Brazil between 2000 and 2012 showed that individuals with lower education levels are generally the most affected (MACHADO; SANTOS, 2015; MATA; DELTRO; PONDE, 2020).

In this context, individuals with fewer years of schooling tend to have worse job opportunities and are associated with higher stress levels, especially in situations such as social isolation and reduced employability observed during the pandemic, which may contribute to an increased tendency for suicide (DESAULNIERS; DIAGLE, 2008).

In Table 5, it is possible to observe the clinical outcome for suicide attempts in the state of Piauí.

Table 5. Clinical outcome of individuals affected by suicide attempts in the state of Piauí, using medications, between 2020 and 2022.

Clinical outcome	N	%
Ignored	550	25.5
Complete recovery without sequelae	1,492	69.2
Complete recovery with sequelae	22	1.0
Death due to exogenous intoxication	5	0.2
Death due to other causes	1	>0.1
Loss of segment	85	4.0
Total	2,155	100

Source: Research Data, 2024

Regarding the clinical outcomes, it is noteworthy that 1% of the affected individuals experienced recovery with sequelae, while 0.2% succumbed to death. The number of individuals with sequelae was similar to that observed in the state of Paraíba; however, the latter reported a higher percentage of deaths (0.6%) (MESQUITA et al., 2024).

In this context, it is important to highlight that in the Americas, the number of suicide attempt cases is approximately 20 times higher than what is available in public databases, as not all individuals who engage in such acts seek healthcare services (OPAH, 2022). This suggests that the actual number of affected individuals and deaths is significantly higher than what is reflected in this study.

An important point that should be highlighted is the fact that a portion of the data in this study was ignored, which may be linked to inadequate data collection by healthcare professionals (ARAÚJO; ANDRADE JÚNIOR; MAIOR, 2021). This reality highlights the need for the training of workers and active monitoring.

4. FINAL CONSIDERATIONS

The profile of individuals affected by suicide attempts during the social isolation caused by SARS-CoV-2 showed 2022 as the most prevalent year. This group was predominantly composed of individuals aged 20 to 39 years, female, of mixed race, and with medium education levels.

Moreover, the impact of socioeconomic issues and mental health was evident, highlighting the urgency of strategies that include health education, psychological support, and control of access to medications.

Thus, it is crucial to strengthen public policies that contribute to reducing the rates of suicide attempts and the number of deaths.

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