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Commentary

Suicide Prevention in Brazil: General concepts and the Experience of a Life Support Program (PRAVIDA)

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Abstract

Aims: This paper has several objectives: First, it reviews the concept of suicide; Second, it presents epidemiologic data about suicide and suicidal behavior in the world, in Brazil and in Fortaleza – capital of Ceará - the second ranking city in suicide deaths in Brazil losing only to Sao Paulo which is 5 times bigger; Third, it describes the most common risk factors for suicide; Fourth, it shows interventions to reduce the risk of suicide; Fifth, it proposes useful questions to identify a person with suicide risk; Finally, it presents the PRAVIDA Program.

Methods: More specialized programs dedicated to caring for people at serious suicide risk are necessary. The manuscript describes the Life Support Program (PRAVIDA) implemented in a university hospital of Fortaleza – Ceará – Brazil.

Results: This Program was especially designed to deal with this most urgent problem in public health which suicide. PRAVIDA has broad range of activities in suicide prevention strategies are divided into three levels:

1) **Primary Prevention**: targets the general population a wide range of interventions such as a skills development program, educational approaches campaigns to reduce stigma during the whole year.

2) **Secondary Prevention**: programs such as the training of gatekeepers that seek to train individuals who can acquire knowledge and develop skills and attitudes to identify those who are at risk, determine risk levels and make referrals when necessary; school interventions involving administration, teachers, administrative and infrastructure staff, students (Pravida at Schools), screening in the emergency medical room in Instituto JoséFrota.

3) **Tertiary prevention**: interventions aimed at individuals who attempted suicide and include psychotherapeutic and pharmacological interventions, addressing the individual and his support network. In 17 years of continuous activities PRAVIDA did not registered a single suicide among outpatients with high suicidal risk. That it was followed up for three months after a suicide attempt.

Conclusions: Specialized team to evaluate and treat patients with severe suicidal risk is a useful strategy to prevent deaths by suicide.

Keywords: Suicide prevention, Suicidal behavior, Suicide risk factors, Epidemiology, Brazil, PRAVIDA

Abbreviations

PRAVIDA: Life Support Program (Programa de Apoio à Vida); WHO: World Health Organization; GDB: Global Disease Burden; LGBTQIA +: Lesbians, Gays, Bisexuals, Transgender, Queers, Intersex, Asexuals, +; COVID 19: Disease caused by coronavirus SARS-CoV-2; UFC: Federal University of Ceará; HUWC: Walter Cantídio University Hospital

Introduction

Suicide is defined as "the act of taking one's own life", it is a behavior that has existed over the centuries, in different cultures of human civilization. In general, reflects an individual's distress, pain and hopelessness (or psychache), in a critically negative emotional and social state. It is an effort to stopped the emotional pain that exceeds the individual coping ability [1,2].

The current definition suggested by the Center for Disease Control and Prevention and which will be used in this text includes:

- Suicidal ideation: thinking, considering or planning suicide.
- Suicide attempt: non-fatal, self-directed and potentially harmful behavior with the intention of dying as a result of the behavior; it may not result in injury.
- Suicide: death caused by self-directed insulting behavior with the intention of dying as a result of that behavior [3].

Suicidal behavior can be understood as resulting from the interaction of different factors: biological, sociological, epidemiological, philosophical, psychological and cultural, both of an intrapsychic and interpersonal nature. Contemplating all aspects can guarantee a broader view and possible avoid reductionism.

Epidemiology

According to the World Health Organization (WHO), there are more than 800,000 suicides per year, which means a rate of 11.4 suicides per 100,000 inhabitants and one suicide each 40 seconds. It is responsible for 1.4% of all deaths in the world, becoming, in 2012, the 15th cause of mortality in the general population and the 2nd among young people aged 15 to 29 years [4,5].

In Brazil, in 2016, the death rate of 6.13 per 100,000 inhabitants due to suicide (9.8 for men and 2.5 for women) was reported, totaling 11,433 deaths [6]. Between 1996 and 2016, the suicide mortality rate in Brazil increased by 29.4%. Such increase was verified in the five Brazilian regions: Northeast Region (104.9%), North Region (54.9%), Southeast Region (16.9%), Midwest Region (15.6%) and South Region (7.2%) [6].

Data from the city of Fortaleza, capital of the state of Ceará, indicate that in the period between the years 2000 and 2009, 1903 suicides were identified, of which 81% were in men (ratio 4.3:1). This survey pointed out that the most used methods were hanging, poisoning, firearms and jumping from high places [7].

A broad survey covering the period from 1959 to 2001, which included 15,629 suicides in the general population, found that in 97% of cases there was a mental disorder diagnosed in individuals at the time of death [8]. The mental disorders most associated with suicide are major depressive disorder, bipolar disorder, schizophrenia, alcohol and substance use disorder and borderline personality disorder [4,9]. In others words, the presence of a mental disorder is necessary but not sufficient for suicidal behavior [4,5].

More broadly, when the analysis involves the range of suicidal behavior including suicidal ideation, planning, attempted suicide and suicide, there is a greater impact. For each suicide death, more than 20 attempts are estimated. It is important to highlight that suicidal ideation and non-fatal suicide attempts also cause suffering and significant losses. Globally, there are lifetime prevalence rates of approximately 9.2% for suicidal ideation and 2.7% for suicide attempt. Ideation and suicide attempts are predictors of suicide deaths and can lead to serious injuries, hospitalization and the need for temporary restriction of freedom, resulting in high direct and indirect economic costs. Taken together, suicide and suicidal behavior make up the 19th cause of 'global disease burden' (GDB) [global burden of disease that includes years lost due to disability, illness or early death] and the 6th and 9th causes of GDB among men and women aged 15 and 44 years, respectively [10].

Register about Brazil indexes, between 2011 and 2018, there were 339,730 cases of self-inflicted violence, of which 154,279 (45.4%) occurred in the age group 15 to 29 years, with 103,881 (67.3%) in women and 50,388 (32.7%) in men. Of the total records of self-inflicted violence among young people aged 15 to 29, 52,444 (34.0%) cases could be classified as suicide attempts. Over the period, there was a substantial increase in the proportion of suicide attempts records, in relation to the total number of self-harm, from 18.3% in 2011 to 39.9% in 2018. Between 2011 and 2017 there was an increase in the number of deaths due to suicide in individuals aged 15 to 29 years, with 8.7% among men and 7.3% among women [6].

The impact that this type of loss has on family, friends and the community needs attention; it is like a stone that falls into the lake and generates many waves of pain and suffering. It is estimated that 6 to 10 people are strongly impacted by each suicide death, that is, it is a contingent of at least 4.8 million people mourning in the world, per year, by suicide. Postvention means intervention after and was proposed in 1967 by Edwin Shneidman. Postvention refers to the care of the bereaved by suicide (survivors), to help them deal with the specific aspects of this type of loss and to prevent suicide among the survivors. The tools of postvention can categorize in different axes of assistance: information, support, psychological counseling and mental health services, among others [11].

Suicide Risk Factors

Risk factors for suicide have been investigated at a population and individual level; in addition, predisposing factors and precipitating events are also described, mainly at the individual level. One approach to understanding suicide takes into account the life course analysis, which is based on the premise that risk factors act at different stages of life and that suicide is the cumulative result of risk factors throughout life [12].

Individual factors, particularly mental disorders, have a robust effect on suicide rates. Depression, bipolar disorder, schizophrenia spectrum disorders, substance use disorders and borderline personality disorder increase the risk of suicide by an order of 3. Other predisposing factors include previous suicide attempt (the biggest factor), childhood sexual abuse, family history of suicidal behavior, loss of a parent by suicide in early childhood. There is also an asymmetry regarding sex; women make the most attempts, but it is men who die most from suicide [4].

Among the precipitating factors, stressful life events can precede suicides and suicide attempts. Such events include relationship difficulties (particularly separation or divorce), death of a partner and death by suicide of someone close. A very relevant factor in the situation in Brazil is unemployment. Other precipitating factors include being diagnosed with a chronic illness, especially in the first week after the cancer diagnosis. The risk of suicide is also high among victims of assaults, people who have been arrested and prisoners, people from the LGBTQIA + group (lesbians, gays, bisexuals, transgender, queers, intersex, asexuals, +). Another population extract extremely vulnerable to suicide is the indigenous population [9].

At the population level, natural disasters or others catastrophes can act as triggers for suicide, supposedly in a dose-response form in some cases. There is an increase in suicide rates after a celebrity's

suicide, and the effect is amplified when press guidelines to avoid explicit descriptions of death and speculation about the causes are disregarded [12].

Social factors, particularly economic adversity, modify the influence of many risk factors for suicide. Unspecialized professionals have an increased risk of suicide, which is partly explained by greater psychosocial stress; however, people in professions with access to lethal means for suicide have high rates, such as physician and policeman [9,12].

At the moment, there are concerns about the 'fourth wave' of the COVID 19 pandemic. The phenomena include the increase of mental disorders and psychological morbidity associated with pandemic and all strategies of control disease (social isolation, lock-down and quarantine). Social isolation can contribute to suicidal behavior. In his book about suicide, Émile Durkheim wrote that social connectedness is a critical factor in emotional health and social stability [13].

Social isolation, anxiety, fear of contagion, uncertainty, chronic stress, economic difficulties, and unemployment may lead to the development or exacerbation of stress-related disorders and suicidality in vulnerable populations including individuals with previous mental disorder, with low-resilience traits, residents in high coronavirus prevalence areas and those who are mourning because someone close to them died a victim of COVID. Other groups that deserve attention are the COVID-19 survivors (especially those with severe disease) and front-line health care professionals [14,15].

Impulsivity is a component of most psychological models of suicide. This trait is partly familiar and has a great influence on the risk of suicide among young people. Perfectionism can be another personality trait that contributes, leading to isolation for fear of being stigmatized by an interpersonal crisis. Rigidity, inflexibility and rumination hinder problem solving in relation to common stressors, including trying to find solutions to financial problems, unemployment, involvement in criminal justice, interpersonal conflicts and family conflicts [9].

It must be remembered that the individual is not suicidal (in a permanent sense), but the subject is suicidal (in a temporary sense). What does that mean? There is also ambivalence between 'life drive' and 'death drive' [9]. Family history of suicide is a risk factor for suicide and children, whose parents had suicidal behavior, will have a higher risk of suicide throughout their lives. This risk is partially explained by the parents' mental disorders, impulsiveness and aggression traits or neurocognitive disorders, all of which are partially genetically heritable. However, studies have not been able to separate behavioral imitation of a family member and genetic predisposition to suicide. Twin studies have produced estimates of the genetic contribution to the risk of suicidal behavior ranging from 30 to 50% [12].

Interventions to Reduce the Risk of Suicide

Suicide prevention strategies can be classified as universal (at the population level) or individual [16,17]. Universal measures include restricting access to means of suicide, particularly if certain methods are lethal and frequently used in a given population and include [16,17]:

- Prohibited the sale of pesticides,
- Control of medications,
- Restriction of weapon ownership,
- Construction of barriers at potential suicide points,
- Smaller packages of certain over-the-counter drugs that are used for suicide
- Suicide prevention campaigns.

Individual (or selective) strategies are aimed at the target population of individuals who are at higher risk of suicide. This group includes people with mental disorders, adolescents, people with chronic diseases (example: epilepsy), among others.

How to Identify a Person at Risk for Suicide

To identify those patients in high risk for suicide is a challenging task. In accordance with the Pravida Program that have followed up more than 2500 people with high risk for suicide in 17 years the three questions cited bellow are of fundamental importance [9]:

1. Do you have plans for the future? (to assess hopelessness)

The response of the patient with suicide risk is not.

2. Is life worth living? (to evaluate the value of life for oneself)

The response of the patient with suicide risk is not.

3. If death comes today, would it be welcome? (to examine the guilty associated with suicide behavior)

The response of the patient with suicide risk is yes.

If the patient answered as mentioned above, the healthcare professional will ask these next questions:

4. Are you thinking of hurting yourself or dying?

The response of patient with suicide risk is likely to be yes.

5. Do you have any specific plans to die/kill yourself/take your life?

The response of patient with suicide risk is likely to be yes.

6. Have you made any suicide attempts recently?

The response of patient with suicide risk is likely to be yes.

The Life Support Program (PRAVIDA)

The Life Support Program (PRAVIDA) was created in Fortaleza in 2004, as a project linked to the Department of Clinical Medicine of the Medicine Faculty of the Federal University of Ceará (UFC). The acronym Pravida means For Life in Portuguese.

The idea of implementing PRAVIDA came about as a result of the large number of patients with a history of suicide attempt who received initial care at the José Frota Institute and after discharge were referred to the Mental Health Outpatient Clinic of the Walter Cantídio University Hospital – HUWC of the UFC.

The work that takes place at PRAVIDA is interdisciplinary, in which professionals of Psychiatry, Psychology, Social Worker and Nurse and graduations and post-graduation students of these areas assist people with high suicide risk in a three months program. After this period patients are referred to other services.

PRAVIDA idealized an annual suicide prevention parade that occurs in the Sunday closest to 10/09 (World Suicide Prevention Day) on Beira Mar Avenue in Fortaleza. This initiative served as an inspiration for the Brazilian Yellow September Campaign.

PRAVIDA has broad range of activities in suicide prevention strategies is divided into three levels: 1) Primary Prevention: targets the general population a wide range of interventions such as a skills development program, educational approaches campaigns to reduce stigma during the whole year. 2) Secondary Prevention: programs such as the training of gatekeepers that seek to train individuals who can acquire knowledge and develop skills and attitudes to identify those who are at risk, determine risk levels and make referrals when necessary; school interventions involving administration, teachers, administrative and infrastructure staff, students (Pravida at Schools), screening in the emergency medical room in Instituto Jose Frota. 3) Tertiary prevention: interventions aimed at individuals who attempted suicide and include psychotherapeutic and pharmacological interventions, addressing the individual and his support network [9,18].

Limitations

This manuscript is a paper about the context where PRAVIDA implements its program of suicide prevention. It is a descriptive and does not report demographic and clinical data of patients that were attended by PRAVIDA. Recently, the Ethics Committee of the Federal University of Ceará approved the PRAVIDA Program as a research and not only a clinical program. Data regarding the demographic and clinical profile of patients will be described elsewhere.

Conclusions

Efforts are needed to develop projects that engage the whole society in suicide prevention strategies. It is a public health issue and a preventable cause of death. PRAVIDA is a pioneering program in Brazil that works on suicide prevention at the primary, secondary and tertiary levels.

Conflicts of Interest

The authors declare no conflict of interest.

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Author Contributions Statement

FGMS and LWB contributed equally in conception of this paper.

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