

Understanding and Preventing Suicide

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ABSTRACT

Suicide has become a popular public health of concern. The trend of the event globally has been increasing over time. As it has been projected, there is one death in every 40 second on the earth. It ranked at 15th leading cause of death on the earth and highly affecting elders. This paper provided a broad understanding of the concept of suicide, the cause, and prevention of suicide. The main objective of this paper is to provide different understanding of the concept, causes and prevention of suicide globally. Documentary analysis methodology has been used as many papers, reports, research has been done in public health and especially about suicide. Many authors point psychological problems, sex, mental illness, physical illness, genetics and medication as causes of suicide. There are factors classified as the root cause of the suicide act. There is a view of having two ways traffic to the way factors causing suicide operate. This paper adopted and modified the Pressure and Release to indicates how suicide progress from root cause to unsafe life and ultimately to suicide act. As to say suicide act may root from distance cause of social-economic factor progressing and amplified by psychological problems, mental illness, physical illness, genetics and medication and finale unsafe life prevail. At the end the suicide act took place. To prevent the suicide act, the government, non-governmental organization, community-based organization and people around the world must solve the social-economic problem facing peoples on the earth. In addition strengthening personal relationships, strengthening personal believes; which include religious believes, and strengthening positive copying strategies must be encouraged in our society to get rid of suicide act.

Keywords: Suicide; Prevention; Root cause; Psychology and Death

INTRODUCTION

Suicide is defined as the act of intentionally inflicting one's own death [1]. Is a fatal self-injurious act which has become a global public health concern. Globally, the number of suicide cases has been increasing tremendously. It is reported that, in each year, over 30,000 people in USA and approximately 800,000 to 1 million people all over the world die due to the act of committing suicide; making it to be one of the leading etiology of death [1]. Similar data have been reported by WHO, 2020 of 2016. The death of 800,000 people for every year is equivalent to the death of one person for every 40 seconds WHO, 2020. It is the leading etiology of death to the people having 15-19 years old WHO, 2019. It is also estimated that, at least 6 people are directly affected by each suicide death WHO, 2017.

In the year 2015, its mortality rate was 10.7 per 100,000 populations per year; with variability across age groups, regions and countries. This implies that, it's about a single death in every 20 seconds. Likewise, similar data have been reported by WHO. It is the 15th leading etiology of death worldwide, and accounts for 1.5% of all deaths. It was estimated that, in this year (2020), about 1.5 million people will die because of committing suicide. The data provided by WHO suggest that, the global rates of actual suicides increased between 1950 and 2004; especially for men and data-based estimates suggest that the number of self-inflicted deaths will increase by as much as 50% from 2002 to 2030 [2].

It is also reported that, suicides affects all age groups in the population, but worldwide, rates clearly increase with increasing age. In almost all countries, the highest rates are found among

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the oldest people aged 80+ (60.1 per 100,000 men and 27.8 per 100,000 women), 70–79 years (42.2 per 100,000 men and 18.7 per 100,000 women), and 60–69 years (28.2 per 100,000 men and 12.4 per 100,000 women). There is little doubt that, there are many more men commit actual suicide than women, with the exception of some few countries such as China and Bangladesh, where women attempt suicide 2,3 times more often than men [2].

As introduced earlier, suicide rates differs substantially between countries. Globally, the larger number of the actual suicide cases (78-79%) in the year 2015 were estimated in low and middle-income countries (LMIC) [4]. According to these data, the mortality rates for the actual suicide cases amounted to 1.4% of total mortality rates; ranging from 0.5% in African regions to 1.9% in South-East Asian region. The ratio of suicide between male and female varies between 4 to 1 in Europe and America, 1.5 to 1 in Eastern Mediterranean and Western Pacific regions, and it is estimated to be highest in the high income countries. It should be noted that, these regions defined by WHO do not completely overlap with geographical regions. For example, African region mentioned does not include the Eastern Mediterranean region (the Arabic countries) [3].

Apart from the actual suicide cases, there are also suicide attempts cases. The suicide attempt cases are much frequent compared to the actual suicide cases. They are about 10-30 times more frequent than actual suicide cases. The estimated global prevalence of suicide attempts is about 3 per 1,000 adults. It is also estimated that, about 2.5% of the population commit at least one act of suicide attempt in their lifetime. However, all these suicide data are probably still an under-estimation of a real problem [6].

Registering a suicide cases is not an easy task as you can think. It is very complicated task which often involves judicial authorities. Unless, the phenomena may not be recognised or may be mis-categorized as an accident or another cause of death. Inadequate knowledge among health professionals may also leads to the mis-diagnosing of death as being accidental: Falls, drowning and submersion, assault, exposure to smoke or fire, and accidental poisoning by and exposures to noxious substances. Sometimes suicide cases may not be identified or reported at all: They may be rooted in stigma, beliefs, legislation and politics (for-example, prosecution of suicide attempts in certain countries. About 45% of people who die by suicide consult a primary care physician within one month of death. But still there is rarely documentation of physician inquiry or patient disclosure [4].

The WHO has maintained cross-national data on actual suicide mortality since 1950; however, there are inconsistencies in reporting by individual government, with only 11 countries providing data in 1950, 74 in 1985, and 50 in 1998. In addition to that, the fact that some governments have treated actual suicide as a social or political issue rather than a health problem may have decreased the validity of earlier data and resulting estimates. Due to these inconsistencies, it is difficult to provide an accurate cross-national estimate of trends. Another researcher have reported that, WHO does not receive data from any country in the world on suicide attempts cases, although at least

information from emergency rooms/somatic hospitals and self-reports could be obtained [5].

Under these grounds, what comes into our mind is that, the world is at the highest level of social, economic, political and technological advancements. The greatest civilisation achievements have been reached by human being, then why a whole creature deliberately takes his/her own life for whatever reason? As the world civilisation increase, expectation is to increase human welfare in terms of life expectancy, happiness, social security, increased human dignity, respect and prosperity. The presence of a number of actual suicide cases and suicide attempt cases as stated earlier addresses a negative image to all development achieved by human being. This is quite unexpectedly; it shocks the world and rise the greatest concern to whether these achievements reached by human being is real or fake? As introduced earlier, it is a serious public health concern as the number of both actual suicide cases and suicide attempt cases globally is increasing tremendously. Therefore, it is very important to gain proper understanding of this problem; both psychosocially and biologically [6].

In what follows, this review gives a short overview of the very important social and biological aspects of this problem, including the most important risk factors and preventive measures.

METHODS OF SUICIDE

According to WHO, about 20% of the global actual suicide cases are due to the pesticide poisoning, most of which occur in rural agricultural areas in low-and middle-income countries (WHO, 2019). Other common methods of suicide are firearms and hanging. Understanding the most commonly used suicide methods is very important to device prevention techniques that have been identified to be effective [7].

ROOT CAUSE OF SUICIDE

Figure 1 below is a simplified model showing the root causes of both actual suicides and suicide attempts. As it will be explained, even if mental illnesses and other biological factors mentioned earlier usually play part as dynamic factors, but sometimes they may play part as a root cause. This is the same as to say, while mental illnesses play a very significant role in suicides, other factors; such as psychosocial factors, are also particularly influential.

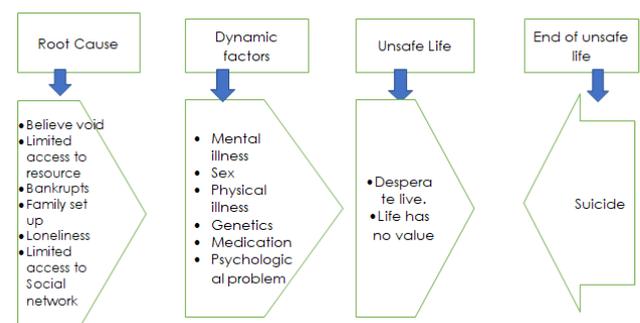


Figure 1: Rooting of Suicide.

PSYCHOSOCIAL FACTORS

As shown in Figure 1 and 2, various psychosocial factors have been reported as the root cause of the actual suicide and suicide attempt. In 2020 have reported the following psychosocial factors as the root causes of both actual suicide and suicide attempts: a sense of no purpose in life; which is equivalent to the believe gape mentioned in Figure 1 and 2, a sudden and major change in an individual's life; such as, marital status divorced or loss of partner; which is similar to the sex mentioned in Figure 1 and 2 and loss of employment, negative life experience such as substance abuse, financial difficulties, social media; those influencing imitation especially for younger people, family history of suicide, major adverse events; such as sexual abuse and harassments, discrimination; such as for being gay, lesbian, transgender or bisexual, and long history of being bullied [8].

Berardelli have also reported the following lifestyle behaviours as the root causes of both actual suicide and suicide attempts: sedentary lifestyle; which is equivalent to the loneliness mentioned in Figure 1 and 2, family conflicts or isolation; which is also equivalent to family environment mentioned in Figure 1 and 2, high prevalence of alcohol and cannabis use, interpersonal factors (family conflicts and peer problems); which is also equivalent to the family environment mentioned in Figure 1 and 2, and lower life satisfaction. All these psychosocial factors; and others that have not mentioned here, may impact mental illness and suicidal behaviours (actual suicide and suicide attempt) by influencing suicidal ideation (suicide emotions and judgement). This is the way biological factors described below can play part as the dynamic factors.

BIOLOGICAL FACTORS

Various biological factors have been reported as the risk factors for both suicide attempt and actual suicide. More recent studies have outlined medication, pain that is continuous, advanced age, chronic illness, mental illness, sex, genetics, neurosis, chronic sleep problem, functional impairment, traumatic brain injury, and physical illness as the prevalent biological factors. But many studies have reported that, suicide acts are closely associated with psychiatric diseases; simply, mental illnesses. Therefore, in this article, we analysed only the mental illness as the main biological root cause.

MENTAL ILLNESS

Biologically, mental illness refers to health conditions that divert a person's feelings, thinking, and behaviour (or all three) and that causes the person distress and difficulty in functioning. There are various mental illnesses that include schizophrenia, attention deficit hyperactivity disorder (DHD), depression, obsessive-compulsive disorder, and autism. Like many other health conditions, mental illness is severe in some of the cases and mild in some other cases. People who are suffering from mental illness don't necessarily look like they are sick, especially if their illnesses are mild. Other people may present with more explicit symptoms like agitation, withdrawal, and confusion. It is reported that, about 90% of people who commit suicide have

suffered from at least one form of mental illness. Mental illness may stand as independent factor as a root cause of the actual suicide or suicide attempts or; as explained before, may have its root from the psychosocial factors. This is also the way biological factors can play part as root causes [9]. See also Figure 3 below.

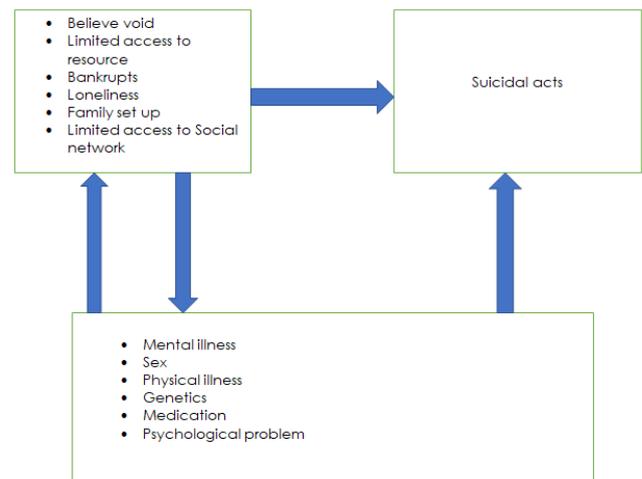


Figure 2: The model showing the causal relationship between depression and other mental disorders, psychiatric factors and suicides. Model A is often preferred by sociologists and health politicians. Model B preferred most by psychiatrists.

Mental illnesses are known to contribute between 47 and 74% of suicide risk. The reported proportion of actual suicide due to mental illness ranges between 60-98%. Many studies have reported that, affective disorders (a set of psychiatric or mood disorders) such as depression and bipolar disorders are the disorders most frequently identified in this context. As many as 87% of people who die because of committing actual suicide meet the criteria for a psychiatric disorder before their death.

In the beginning of the 21st century, the highest mortality rate of actual suicide globally was due to depression (30%), followed by substance-use related disorders (18%), schizophrenia (14%), and personality disorders (13%). In other studies conducted elsewhere, the evidence for depression were found in 50-65% of actual suicide cases, more often among women than men. Substance-use related disorders; more specifically alcohol overuse, were also strongly linked to the suicide risk, especially in older adolescents and males. This is because, they increase impulsiveness and impair judgment, thereby increasing the risk of committing suicide. In these studies, among 30-40% of people who died by suicide presented personality disorders, such as antisocial personality disorder or borderline. Data from the World Mental Health Survey showed that for all countries examined, the risk of first onset of suicide ideation increases sharply during adolescence and young adulthood and then stabilizes in early midlife [10].

SUICIDE BY REGIONS

The global data from WHO indicates that, suicide occurs in approximately 16.7 per 100,000 population per year. It is the 14th leading etiology of death all over the world, and accounts for 1.5% of all deaths. Suicide rates vary significantly across

regions and countries; with respect to the age, gender, and socio-economic status of the people and the respective country, methodology of suicide, and even the access to health care. Even though about 78-80% of all completed suicides (actual suicides) cases occur in low and middle-income countries, but in general, the rates of suicides; both the actual suicides and suicide attempts, are highest in Eastern Europe, followed by the United States of America, Western Europe, and Asia, and it is lowest in Central and South America.

In 2016, actual suicide cases was among of the 10th leading etiology of death in 5 of the 21 Global Burden of Disease defined regions. Some of these regions and their estimates are summarized here: the highest regional age standardized mortality rate was observed for Eastern Europe as 27.5 deaths per 100,000, 95% uncertainty interval 10.1 to 37.2, followed by high income Asia Pacific (18.7, 15.6 to 21.7), and Southern sub-Saharan Africa (16.3, 14.3 to 19.3) [10].

Similar pattern was seen for regional age standardized years of life lost rates with the highest age standardized years of life lost rate estimated for eastern Europe (1200.3 years of life lost per 100,000, 95% uncertainty interval 869.2 to 1635.9), followed by high income Asia Pacific (742.0, 614.6 to 855.6) and southern sub-Saharan Africa (664.1, 579.6 to 809.8). The age standardized mortality rate for actual suicide decreased across most Global Burden of Disease regions between 1990 and 2016, with only non-significant increases observed for the regions of central Latin America (14.6%, 95% uncertainty interval -5.9% to 31.3%), high income Asia Pacific (10.1%, -23.5% to 30.0%), western sub-Saharan Africa (4.3%, -10.4% to 20.7%), and eastern Europe (1.4%, -24.2% to 34.3%). There were periods of increases and decrease in the age standardized mortality rate from actual suicide for men in eastern Europe in particular. The age standardized mortality rate from actual suicide for men in eastern Europe was similar at the beginning and at the end of the study period (27.1 deaths per 100,000, 95% uncertainty interval 23.8 to 34.1 in 1990; 27.5, 20.1 to 37.2 in 2016), and rose as high as 42.8 deaths per 100,000 (95% uncertainty interval 33.7 to 50.2) during this period [10].

SUICIDE BY COUNTRIES

Uneven distribution of actual suicide cases (in both sexes) per 100,000 population between countries in 2015 as reported by WHO, 2017 are summarized here: the lowest suicide rates (between 0 and 4.9) were reported; in order of increasing rates, in Antigua and Barbuda, Barbados, Pakistan, Guatemala, Egypt, Syrian Arab Republic, United Arab Emirates, Indonesia, Iraq, Venezuela, Algeria, Jordan, Saudi Arabia, Philippines, Iran, Kuwait, Greece, and Morocco.

Actual suicide rates between 5.0 and 9.9 were reported in Mexico, Somalia, Bangladesh, Panama, Afghanistan, Libya, Tunisia, Peru, Nepal, Bosnia and Herzegovina, Brazil, Zambia, Kenya, Ghana, United Republic of Tanzania, Uganda, Kyrgyzstan, Viet Nam, Ecuador, Namibia, Italy, Macedonia, Ethiopia, Mozambique, Spain, United Kingdom, Turkey, Congo, Nigeria, Chile, and Singapore. Suicide rates between 10.0 and 14.9 were reported in China, South Africa, Gabon,

Norway, Ireland, Romania, Bhutan, Australia, Cambodia, Cameroon, Netherlands, Denmark, Lao People's Democratic Republic, Canada, Slovakia, New Zealand, Iceland, Germany, Portugal, Czech Republic, Argentina, and USA [11].

The highest rates of greater than or equal to 15 were reported in Switzerland, Sierra Leone, Sweden, India, Democratic People's Republic of Korea (North), Bulgaria, Thailand, Finland, Austria, France, Serbia, Bolivia, Estonia, Japan, Russian Federation, Belgium, Slovenia, Hungary, Latvia, Poland, Kazakhstan, Mongolia, Republic of Korea (South), Lithuania, and Sri Lanka. It is also reported that, high rates of suicide mortality in a few countries influenced regional averages in Global Burden of Disease regions, particularly South Korea in high income Asia Pacific, Indonesia in South East Asia, and Lesotho and Zimbabwe in Southern sub-Saharan Africa.

For countries with populations greater than 1 million, age standardized mortality rates from actual suicide were highest in Lesotho (39.0 deaths per 100,000, 95% uncertainty interval 25.5 to 55.7), Lithuania (31.0, 25.6 to 36.2), Russia (30.6, 20.6 to 43.6), and Zimbabwe (27.8, 21.1 to 37.3). Rates of age standardized years of life lost were highest in Lesotho (1413.2 years per 100,000, 95% uncertainty interval 944.9 to 2065.9), Russia (1349.5, 889.7 to 1922.4), Lithuania (1317.8, 1065.1 to 1547.5), Kazakhstan (1119.9, 858.9 to 1462.7), and Mongolia (998.1, 744.3 to 1230.5). Age standardized mortality rates for actual suicide were lowest in Lebanon (2.4 deaths per 100,000, 95% uncertainty intervals 1.6 to 3.5), Syria (2.5, 2.0 to 3.0), Palestine (2.7, 2.1 to 3.6), Kuwait (2.7, 1.7 to 3.8), and Jamaica (2.9, 2.2 to 3.7). Rates of age standardized years of life lost rates were lowest in the same countries [11].

PREVENTION OF SUICIDE

As depicted in figure 2 and 3, regulating lifestyle behaviours that are the risk factors for committing both suicide attempts and actual suicide is a key component in prevention of the occurrences of suicides. This is what was addressed by Berardelli and many others. Likewise, according to Bilsen and WHO, methods of preventing the risks for committing suicides are of three (3) categories: Universal prevention methods that are designed to reach the whole population; may focus to increase access to health cares, maintaining and promoting mental health, reducing the use of substance abuse, restricting access to the means for committing suicides, and promoting media reporting; those do not influence imitation [11].

Selective prevention methods are designed to reach to the vulnerable population such as people who are suffering from abuse or trauma, people who are affected by disasters and conflicts; including family conflicts, migrants and refugees, people who are bereaved by suicide; deprived of a close relation or friends through suicide, training people who are assisting the vulnerable people, and by providing helping services such as helplines.

Indicated methods are designed to target the specific vulnerable people with community support, follow-up for people that are leaving health-care facilities; such as hospitals and rehabs, providing education and training to the health-care providers,

and strengthening identification and management of substance use and mental illnesses; relevant programs like psycho-educational family treatment, assertive community treatment, psychosocial therapies, and social skills training. Other methods of preventing suicides includes: strengthening personal relationships, strengthening personal believes; which include religious believes, and strengthening positive coping strategies [12].

DISCUSSIONS

Generally, the regional data presented in this study shows that, high income regions; such as European and American regions, have high rates of suicide compared to low income regions; such as Asian and African regions. Similar pattern is seen for countries data. Developed countries have been reported to have high rates of suicide cases compared to the developing countries. This turn back our attention to the question addressed earlier: The greatest civilisations achievement has reached by human being; particularly developed countries, then why a whole creature deliberately takes his/her own life for whatever reason? Responding to this question, the presence of a large number of actual suicide and suicide attempt cases in developed countries addresses a negative image to all development achieved by these countries. That, may be these developments are not real to many people living in these countries. As the world civilisation increases, expectation is to increase human welfare in terms of life expectancy, happiness, social security, increased human dignity, respect and prosperity. If this is not the case, it means that there are something's that are wrong. In large extent, these behavioural risk factors are the things that disrupt the expectation stated above. They include: risk factors include loneliness; lack or inadequate social interaction, substance abuse such as excessive alcohol and cannabis, belief void etc [12].

On the other hand, even though the same or similar risk factors for suicides have been reported in developing countries, but is only few literatures among of the literatures used in this study that have reported about loneliness; lack or inadequate social interaction, and belief void; which include religious believes in developing countries. This is among of the basic reasons of why developed countries demonstrates higher rates of both actual suicides and suicide attempts. In addition to that, according to WHO, developing countries are relatively less equipped to prevent the risk factors for the suicide behaviors. This is also among of the basic reasons of why developing countries demonstrates higher rates of complete suicides (actual suicides). Furthermore, WHO have reported that, even though suicides continues to remain a serious problem in developed countries, it is the low and middle income countries that bear the larger part of the global suicide burden.

CONCLUSION

The best data about both actual suicide cases and suicide attempt cases are updated regularly with WHO; through their

websites. Generally, the available data shows that, suicide rates varies with regions and countries in particular; with the diversity of changing economic, cultural, social, and environmental factors as well as with age and gender.

The specific picture which we are getting here is that, suicide rates are increasing to the people who have chronic physical; such as those with disabilities, and mental illnesses; such as those with affective disorders (a set of psychiatric or mood disorders) such as depression and bipolar disorders, and in those with the history of attempting suicides; who have already attempted suicide. Worldwide, the quality of suicide data is quiet low to medium because of mis-, under-, or un-diagnosing and reporting. Under these grounds, much less is known about suicide attempts; according to Bachmann, 2018, they might outnumber the actual suicides by 30 folds. Prevention of suicides is possible and highly needed. Therefore, the implementation of the preventive measures addressed in this study is warranted [12].

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