



The Psychology of Gender, Economics, and Homicide on Suicide in Jamaica: Using Time Series data from 2000-2019

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Abstract

Introduction: There are approximately 800,000 suicides globally each year, with most cases occurring in low to middle-income countries. An individual commits suicide every 40 seconds.

Methods and Materials: This study employs Durkheim's theory on suicide to explain the macro levels of this phenomenon. The Jamaica Constabulary Force (JCF) and the Statistical Institute of Jamaica (STATIN) provided data for this study.

Results: Over the studied period, there were 1,066 suicides (male, 930; females, 136), seven males committed suicides for every female in Jamaica, the suicide rate lies between 0.38 and 2.97, and on average 53 suicides are recorded on an annual basis (male; 47 suicide; female, 7). A non-linear relationship existed between unemployment rates and suicides in Jamaica. Unemployment beyond 12% per cent becomes a psychological stimulus for suicidal thoughts and acts at the micro level. The findings revealed that the number of suicide is best fitted by a polynomial function ($r^2=0.7133$ or 71.33%). The results show that the correlation between the number of suicide and the number of homicides in Jamaica is a curvilinear function, emphasizing that there are periods where homicides and vice versa directly influence suicides. Based on the scatter points, generally, there seems to be no straightforward linear or curvilinear relationship between the two variables above.

Conclusion: The study concludes the occurrences of suicides in this country continue to be a part of the daunting global count of approximately 800,000 suicides annually. This fact, reported by the World Health Organization, provides a certain level of urgency that all global citizens should share as we address the ongoing impacts of suicide on society.

Keywords: Jamaica, suicide, homicide, unemployment, gender, economics.

Introduction

Suicide is an act of consciously taking one's life arising from personal characteristics and relationships (Meda et al., 2022); demographic factors (Yip, Zeng & Wong, 2022); socioeconomic status (Claveria, 2022; Cai, 2022; Henry & Short, 1977; Shand *et al.*, 2020; Turchi *et al.*, 2019; Wang & Wu, 2021; Wormer, 2010; Wormer & Odiah, 1999); psychological (Henry & Short, 1977) and homicide (Bills, 2017; Henry & Short, 1977; Machado et al., 2020; Santos-Hermoso *et al.*, 2022). There are approximately 800,000 suicides annually, with most cases occurring in low to middle-income countries (World Health Organization, 2022). An individual commits suicide every 40 seconds (Ritchie, Roser & Ortiz-Ospina, 2015). However, there are incongruities in the distribution of suicide cases in the populations by gender (Furqatovich & Sattorovich, 2022; Meda et al., 2022; & Sun, 2022). Also, heterogeneity in age was evident in the distribution of cases (Yip et al., 2022; Furqatovich & Sattorovich, 2022; Meda et al., 2022; Ramesh et al., 2022; & Dávila-Cervantes, 2022). Unemployment was positively associated with an increase in suicide cases (Claveria, 2022; Shand, Duffy & Torok, 2021). In addition, populations with a rate of suicide reported a higher level of exposure to poverty (Ferretti & Coluccia, 2009). There is a higher rate of suicide in Lower-income-countries than in middle-income countries (Bantjes et al., 2016).

The World Health Organization (WHO) indicated that the Continent of Africa experiences the highest rate of suicides among males and females; the incidences in males are more excessive than in females (IAHO, 2022). However, in an international study conducted in 2015 across 182 countries, it was observed that the highest suicide rate was in males of the Americas, and the lowest was in the continents of Africa and Asia (Alothman, & Fogarty, 2020). The 2014 World Health Organization report revealed that the ratio of suicide from male to female was estimated to be 3:1 or higher for most high-income countries (Tong et al., 2020), which means that females committed less suicide than males (American Foundation for Suicide Prevention. (2022; Hedegaard, *et al.*, 2018; Mendez-Bustos, *et al.*, 2013; Poynton-Smith, nd; WHO, 2019). The American Foundation for Suicide Prevention (2022) reported that in 2020, male suicide was 3.9 times more than female suicide. Males account for 69.9% of the suicides in the Americas, with most of the males being middle-aged Caucasians. However, in the Americas, 1) males account for 79% of the deaths by suicide, 2) the age-adjusted male/female suicide rate is 4.0 in Latin America and the Caribbean, and 3) 36.8% of the suicide occur among people aged 25-44 years and 25.6% of those ages 45-59 years old (Cayetano, 2016).

The only countries where the ratio was higher for females than males were Bangladesh, Myanmar, Morocco, Lesotho and China (WHO, 2019). According to the report, as mentioned earlier, the majority of suicides occur in individuals below the age of 45 years (52.1%). One study, using data from 2000 to 2019 in a mixture of 183 developed and developing countries found that unemployment was more directly associated with an increase in suicide rate in high-income countries of Europe than in the low-income countries of Latin America and the Caribbean Region (Claveria, 2022). The realization is that poverty diminishes economic status and wealth; and is an indicator of persons developing suicidal thoughts and taking action in low and middle-income countries (mhinnovation.net, 2016). The younger members of the male gender are using more violent and socially unhealthy means to terminate their lives through suicide (Furqatovich & Sattorovich, 2022).

According to macrotrends.net (n.d), Jamaica has recorded an extremely low suicide rate for the past 22 years; it increased gradually from 1.90 to 2.40. The source, as mentioned above, shows that Jamaica has a lower suicide rate than all members of the Caribbean except St. Vincent and the Grenadine (1.00) and Grenada (0.70). Jamaica also has a lower suicide rate than all the members of the Latin American Region except Venezuela (2.10). The local population has a lower suicide rate than all the countries of the continents of Africa, Asia, Australia, Antarctica, Europe, and North America.

Notwithstanding that, there is no policy guideline on the issue of suicide in Jamaica (Bourne et al., 2022). In addition, Jamaicans with suicidal tendencies and other psychiatric disorders are less likely to seek medical care (Abel et al., 2009). Further studies on the link between suicide rate and socioeconomic status may present a clearer picture of Jamaica's current challenge compared to other countries globally.

International studies show that there is a solidarity that Jamaica has a low suicide rate as a middle-income country in the Latin America and Caribbean Region; it also has a low socioeconomic divide (Claveria, 2022). What is missing from the crime discourse in Jamaica is the psychology of economics and homicide on suicide. Hence, this study evaluates the psychology of economics and homicide on suicide using data for Jamaica. To contextualize this quantitative research, Durkheim's theory on suicide provides the theoretical framework.

Theoretical framework

This study employs Durkheim's theory on suicide to explain the macro levels of this phenomenon. Durkheim's theory purports two core issues: 1. the structure of suicide is directly related to the structure of a group of people's social relationship, and 2. social relationship changes according to the levels of integration and regulation (Durkheim, 1897/1951; Mueller et al., 2021). According to Mueller et al. (2021), "Durkheim forcefully argued that societal- or macro-level forces (integration and regulation) caused individual-level behaviour (suicide), and yet the link between societal-level social forces and individual behaviour is challenging yet crucial to document". Individual suicide is related to social integration and regulation, including egoistic/altruistic suicide (too little to too much integration) and anomic/fatalistic suicide (too little to too much regulation) (Mueller *et al.*,

2021; Mueller & Abrutyn, 2016; Pescosolido, 1990, 1992). Suicide rates are explained by "the degree to which a given group's rules and social norms were consensually clear, coherent, and shared. Living in a poorly regulated society or social group results in what Durkheim term 'anomic suicides" (Mueller *et al.*, 2021).

Despite the articulated weaknesses of Durkheim's theory on suicide (Mueller *et al.*, 2021), individual suicide is an act brought about by the macro environment, which the individual then internalizes. It follows, therefore, that suicide rates are a by-product of a failed society to properly regulate the social group's rules in a clear, coherent, and shared way that the individual can fit within the social norms of that group. As such, poverty, unemployment, homicide, violence, and other macro-level indicators play a role in determining suicide rates in a society. Therefore, this study hypothesizes a conceptual framework for suicide rates in Jamaica to demonstrate (Figure 1) the influence of the macro-economic environment (poverty, unemployment, homicide).

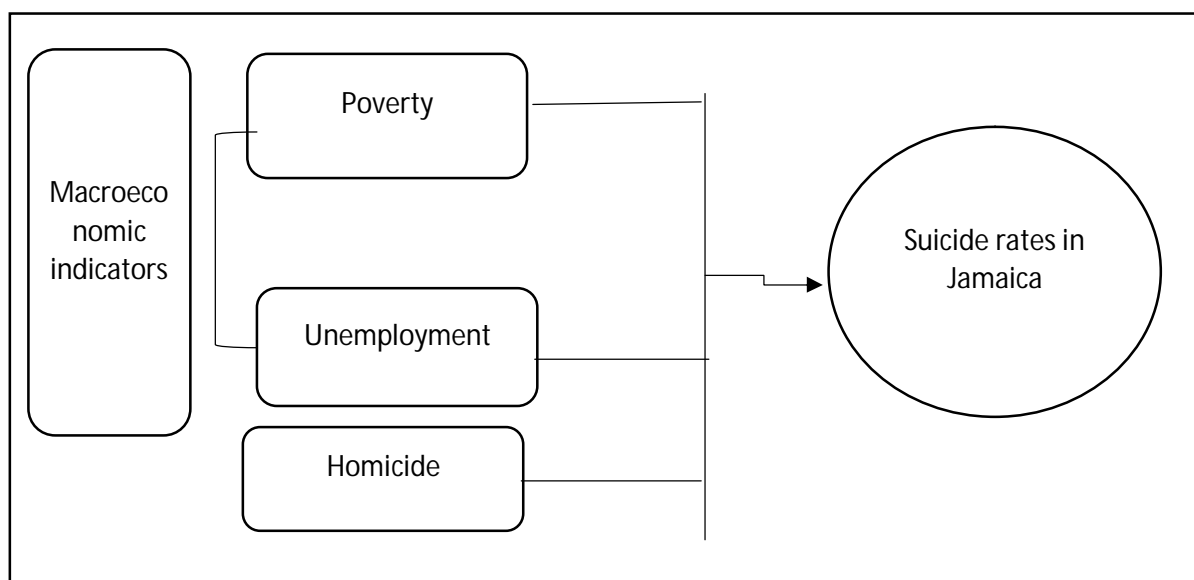


Figure 1: Conceptual framework of suicide rates in Jamaica

Methods and materials

The Jamaica Constabulary Force (JCF) and the Statistical Institute of Jamaica (STATIN) provided data for this study. More specifically, the Statistical department of the JCF provided the homicide and suicide data, while STATIN provided the data on unemployment and poverty. The period for this work is from 2000 through 2019. The Statistical Package for the Social Sciences (SPSS) for Windows, Version 29.0, and Microsoft Excel served as a repository for the data. The level of significance used to determine statistical significance was less than 5% (0.05) at the 2-tailed level of significance. The data were analyzed using percentages, frequency distribution curves, and sex ratios.

Data validity

The Jamaica Constabulary Force (JCF) has instituted a robust surveillance system that tracks, monitors, records, and validates missing people in Jamaica. The surveillance system is updated daily to ensure the accurate recording and accounting of missing people. The purpose of this data set is for national planning and record-keeping in an attempt to monitor this phenomenon.

Operational definitions

Murder-suicide (or homicide-suicide): According to Rouchy et al. (2020), “the murder of one or several individuals followed by the perpetrator’s suicide (p. 3)

Suicide: The act of consciously taking one's life arising from personal characteristics and relationships.

Poverty: According to the Planning Institute of Jamaica (PIOJ) (2018), "In Jamaica, a consumption methodology measured poverty. The process of poverty measurement begins by defining a food poverty line, which represents the recommended minimum caloric requirement needed to sustain a family of five (two adults and three children). The minimum caloric requirement is captured in a food basket, where the total caloric value equals the minimum. The monetary cost of the food basket then represents the food poverty line (after some adjustments for the age and sex distribution of the family of five). To this food poverty line, the basic value of non-food items is added to obtain Jamaica's poverty line. The basic value of non-food items is determined by estimating the ratio of total non-food cost to total food cost. [The] Total ratio of food cost to non-food cost is approximately 2:1... Implicit in the non-food share are all the other basic expenditures typical to the family, including housing and education. In 2014, the poverty line was estimated to be \$169 044. If an individual's consumption is below this figure, that person is in **poverty** (p.1).

Unemployment: The number of unemployed Jamaicans as a per cent of the total labour force

Results

Table 1 presents the number of suicides in Jamaica by gender from 2000 to 2019. In the last two decades (2000-2019), there were 1,066 suicides in Jamaica, with 930 being males and 136 being females. Over the studied period, seven males committed suicide for every female in Jamaica. Furthermore, in 2009, there were 17 males committing suicide to 1 female, and on average 53 suicides are committed on annual basis (male, 47; female, 7). Between 2004 and 2005, there was a 480% increase in suicides in Jamaica, representing the biggest single-year year jump. That year, there was notably a 700% increase in male suicides and 150% in females. However, it must be noted that the year 2004 was anomalous within the study period, given that it registered an 89% reduction in male suicides, which translated to an overall 84% overall decline.

Table 1: Suicides in Jamaica by Gender, 2000-2019

| Year | Male | Female | Total | Sex ratio ¹ | Male: Female ¹ | Annual % change (Male) ¹ | Annual % change (female) ¹ | Annual % change (total) ¹ |
|-------|------|--------|-------|------------------------|---------------------------|-------------------------------------|---------------------------------------|--------------------------------------|
| 2000 | 66 | 11 | 77 | 600 | 6:1 | - | - | - |
| 2001 | 62 | 13 | 75 | 477 | 5:1 | -6.06 | 18.18 | -2.60 |
| 2002 | 51 | 6 | 57 | 850 | 9:1 | -17.74 | -53.85 | -24.00 |
| 2003 | 55 | 9 | 64 | 611 | 6:1 | 7.84 | 50.00 | 12.28 |
| 2004 | 6 | 4 | 10 | 150 | 2:1 | -89.09 | -55.56 | -84.38 |
| 2005 | 48 | 10 | 58 | 480 | 5:1 | 700.00 | 150.00 | 480.00 |
| 2006 | 42 | 5 | 47 | 840 | 8:1 | -12.50 | -50.00 | -18.97 |
| 2007 | 46 | 4 | 50 | 1150 | 12:1 | 9.52 | -20.00 | 6.38 |
| 2008 | 41 | 6 | 47 | 683 | 7:1 | -10.87 | 50.00 | -6.00 |
| 2009 | 51 | 3 | 54 | 1700 | 17:1 | 24.39 | -50.00 | 14.89 |
| 2010 | 29 | 6 | 35 | 483 | 5:1 | -43.14 | 100.00 | -35.19 |
| 2011 | 47 | 5 | 52 | 940 | 9:1 | 62.07 | -16.67 | 48.57 |
| 2012 | 45 | 8 | 53 | 563 | 6:1 | -4.26 | 60.00 | 1.92 |
| 2013 | 45 | 10 | 55 | 450 | 5:1 | 0.00 | 25.00 | 3.77 |
| 2014 | 46 | 6 | 52 | 767 | 8:1 | 2.22 | -40.00 | -5.45 |
| 2015 | 51 | 8 | 59 | 638 | 6:1 | 10.87 | 33.33 | 13.46 |
| 2016 | 50 | 5 | 55 | 1000 | 10:1 | -1.96 | -37.50 | -6.78 |
| 2017 | 42 | 5 | 47 | 840 | 8:1 | -16.00 | 0.00 | -14.55 |
| 2018 | 56 | 5 | 61 | 1120 | 11:1 | 33.33 | 0.00 | 29.79 |
| 2019 | 51 | 7 | 58 | 729 | 7:1 | -8.93 | | -4.92 |
| Total | 930 | 136 | 1066 | | 7:1 | | | |
| Mean | 47 | 7 | 53 | | | | | |

Paul Andrew Bourne computed the figures.

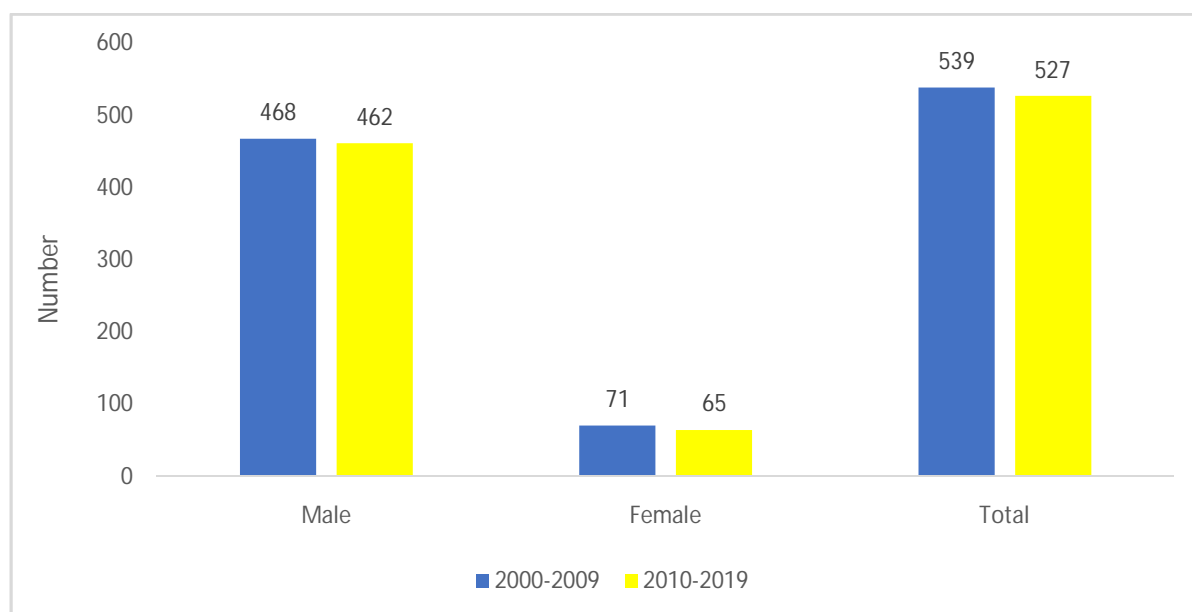


Figure 2.1: Number of Suicide by Gender for 10-year periods

Figure 2.1 depicts the number of suicide by gender for two 10-year periods (2000-2009 and 2010-2019). The results revealed that suicides declined by twelve (i.e., 2.2%) in the second decade over the first decade (2010-2019). The number of male suicides fell by six (i.e., 1.3%) in the first decade compared to the second decade. In contrast, the number of female suicide decreased by six (8.5%) in the same period. A deduction from the current result is that the psychology that influences female suicide has marginally declined change, but this is not the same for the males in Jamaica.

Figure 2.2 depicts the average per cent of males and females who committed suicide for two 10-year periods in Jamaica and the two decades. Overall (2000-2019), on average, 86.2% of the suicides were committed by males and 13.8% by females in Jamaica. On disaggregating the suicides by gender for the two 10-year periods, an increase in males who committed suicide was recorded in the second decade (2010-2019) compared to the previous decade (2000-2009). Furthermore, an annual per cent distribution of the males and females who committed suicide is present in Annexe 2. Furthermore, over the studied period (2000-2019), the per cent of males who committed suicide in 2004 was 60% which was the lowest for the time and as high as 94.4% in 2009 (see Annexe 2)

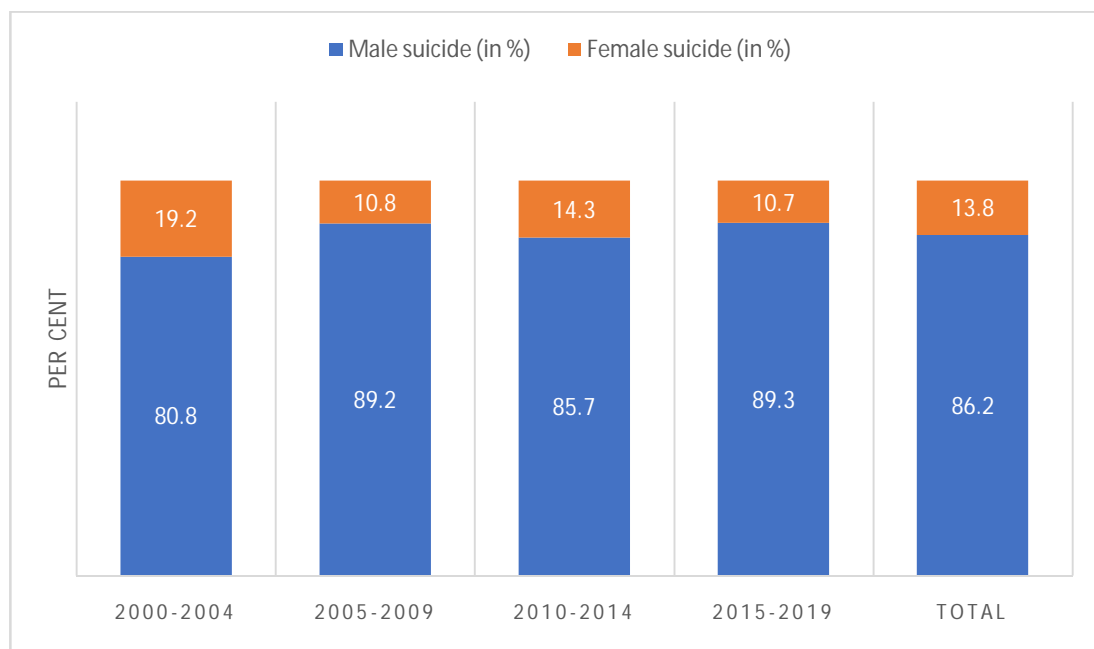


Figure 2.2: Per cent of males and females who commit suicide by decades

Figure 3.1 shows the number of suicides by gender and total for four 5-year periods. The results revealed a fluctuation in the total number of suicides in Jamaica over the last four 5-year periods. The second 5-year period (2005-2009) showed a 9.5% decline, with a further reduction in 2010-2015 by 3.5%, and in the last 5-year period, there was a rise of 13.6% over 2010-2014.

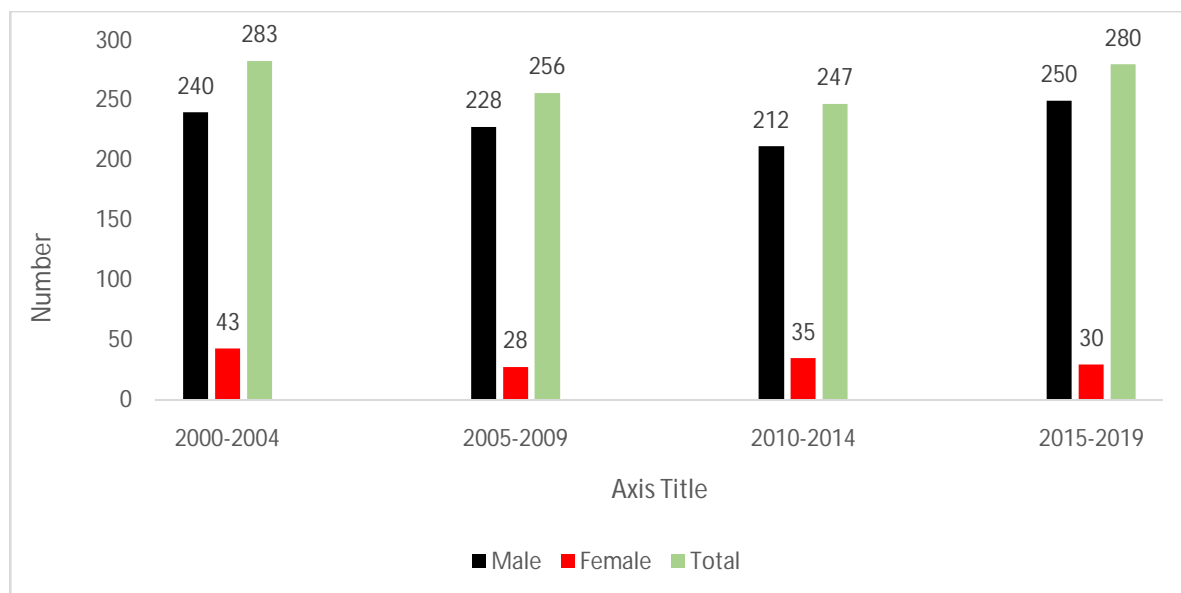


Figure 3.1: Number of Suicide by Gender for 5-year periods

For the first 5-year period (200-2004), on average, 80.8% of the suicides were committed by males and 19.2% by females. The figure for male suicide increased to 89.2% in 2005-2009, declined during 2010-2015, and again increased during 2015-2019 (Figure 3.2).

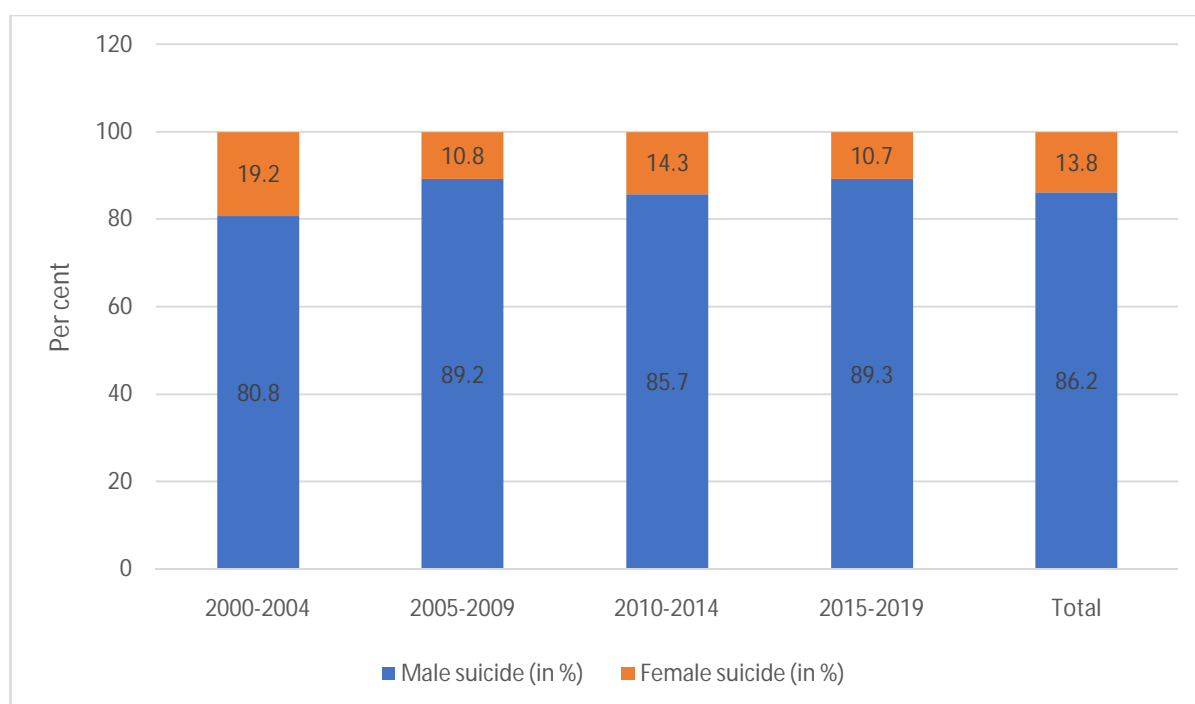


Figure 3.2: Per cent of males and females who commit suicide by 5-year periods

Table 2 presents the mid-year population and the suicide rates for Jamaica from 2000 to 2019. The rates revealed that suicides have been fluctuating in the last two decades in Jamaica and that it was at its zenith in 2000. Despite the fluctuating trends in suicide rates, they have been relatively low.

Table 2: The suicide rate in Jamaica, 2000=2019

| Year | Mid-year population ¹ | Suicide rate (/100,000) ³ |
|------|----------------------------------|--------------------------------------|
| 2000 | 2,589,400 | 2.97 |
| 2001 | 2,604,100 | 2.88 |
| 2002 | 2,615,200 | 2.18 |
| 2003 | 2,625,700 | 2.44 |
| 2004 | 2,638,100 | 0.38 |
| 2005 | 2,650,400 | 2.19 |
| 2006 | 2,663,100 | 1.76 |
| 2007 | 2,675,800 | 1.87 |
| 2008 | 2,687,200 | 1.75 |
| 2009 | 2,695,600 | 2.00 |
| 2010 | 2,695,543 | 1.30 |
| 2011 | 2,699,838 | 1.93 |
| 2012 | 2,707,805 | 1.96 |
| 2013 | 2,714,869 | 2.03 |
| 2014 | 2,720,554 | 1.91 |
| 2015 | 2,725,228 | 2.16 |
| 2016 | 2,728,148 | 2.02 |
| 2017 | 2,728,917 | 1.72 |
| 2018 | 2,727,503 | 2.24 |
| 2019 | 2,820,436 ² | 2.06 |

¹Statistical Institute of Jamaica (STATIN)

²Estimated by Macrotrend

³The figures were calculated by Paul Andrew Bourne

Figure 4 shows a scatter plot diagram with a superimposed, best-fitted polynomial function of the number of male suicides and the number of female suicides in Jamaica. Based on the polynomial function, female suicides in Jamaica affect male suicides; but the effect is curvilinear ($r^2 = 0.371$).

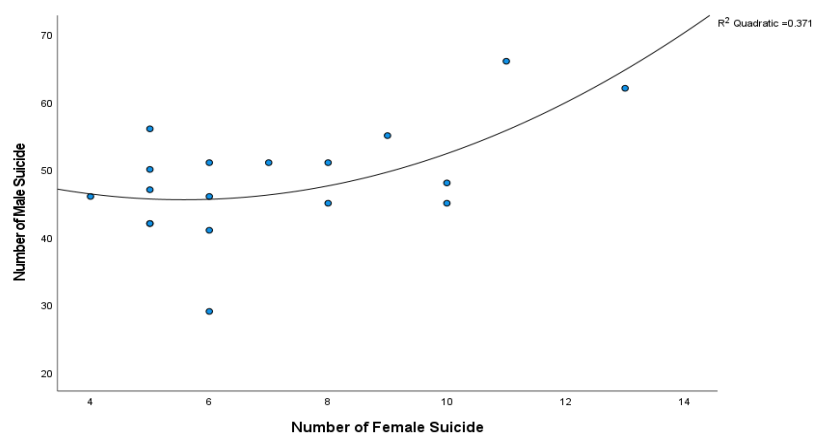


Figure 4: Scatter plots of and a superimposed polynomial function of the number of male and female suicides in Jamaica from 2000-2019

Economics and Suicides in Jamaica

Figure 5 depicts a scatter graph of suicide and poverty rates in Jamaica. Based on the scatter points, generally, there is no straightforward linear or curvilinear relationship between the two variables above.

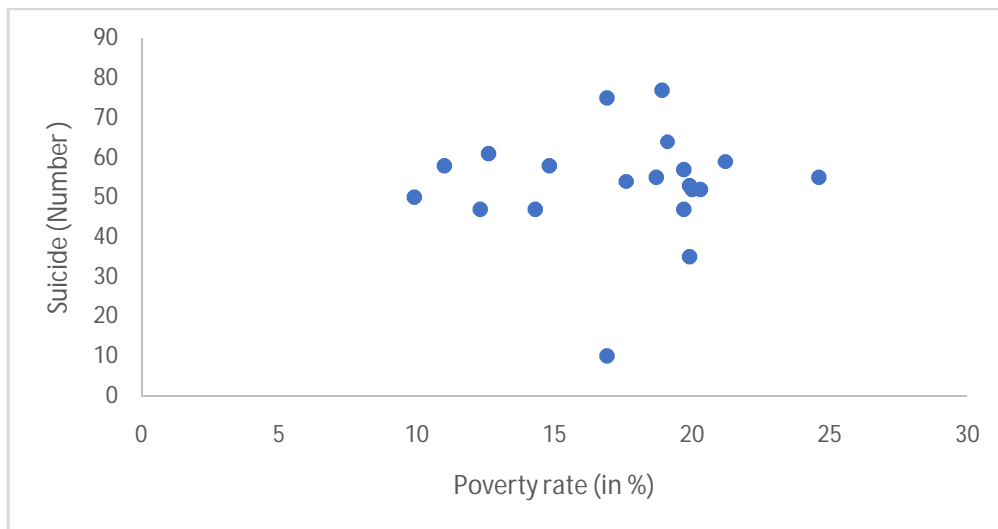


Figure 5: Number of Suicide by Poverty Rates (in %)

A superimposed function was created on a series of scatter points, and these are depicted in Figure 6. Based on the scatter points, a curvilinear relationship existed between the number of suicide and the unemployment rates in Jamaica. A polynomial function is best fitted for the scatter points. Hence, an inverse statistical correlation exists between the number of suicide and the unemployment rates in Jamaica whenever the unemployment rate is less than 11.6%. On the other hand, when the unemployment rate passes 12.6%, a direct correlation emerges between the number of suicide and the unemployment rate.

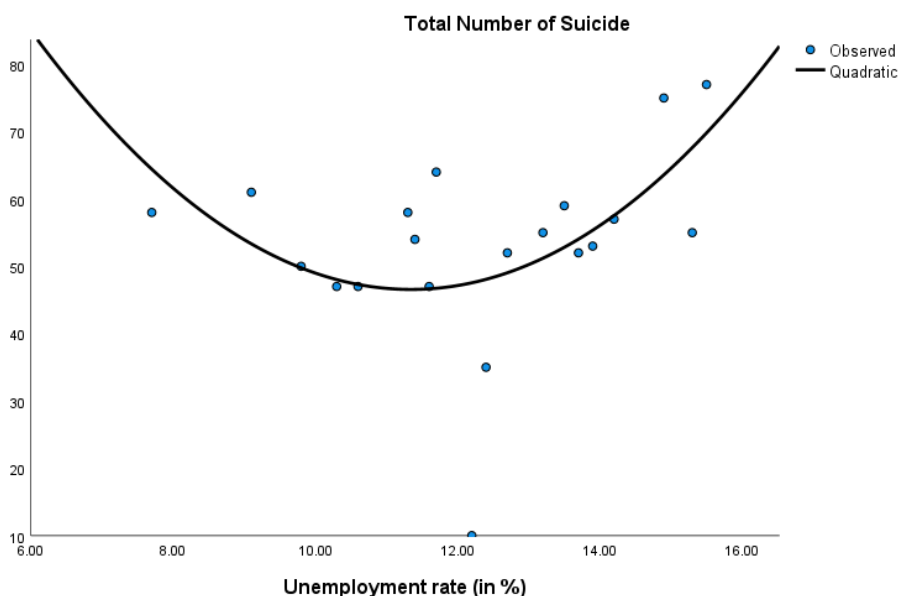


Figure 6: Number of Suicide by Unemployment Rates (in %)

A superimposed function was created on a series of scatter points, and these are depicted in Figure 7. Based on the scatter points, a curvilinear relationship existed between the number of male suicide and the unemployment rates in Jamaica. The polynomial function shows an inverse relationship between the two variables above up to a certain point. Then it reaches a minimum unemployment rate and the relationship changes to a direct one.

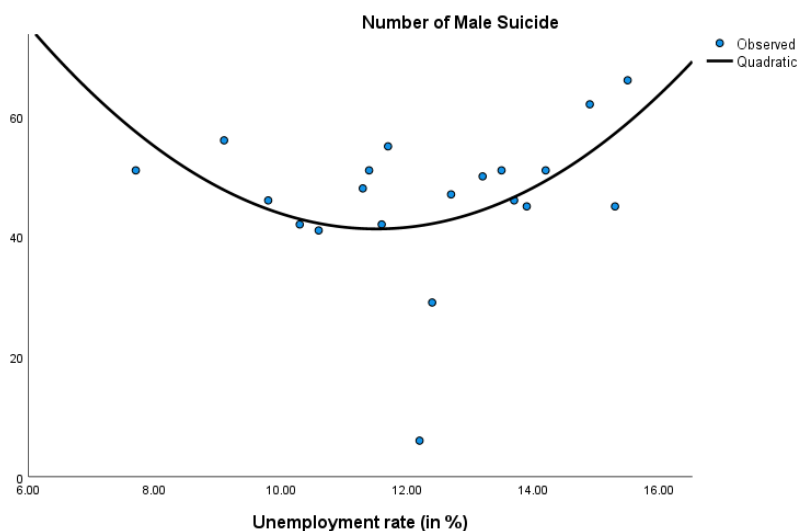


Figure 7: Number of Male Suicide by Unemployment Rates (in %)

A superimposed function was created on a series of scatter points, and these are depicted in Figure 8. Based on the scatter points, a curvilinear relationship existed between the number of female suicide and the unemployment rates in Jamaica. The polynomial function shows an inverse relationship between the two variables above up to a certain point. Then it reaches a minimum unemployment rate and the relationship changes to a direct one.

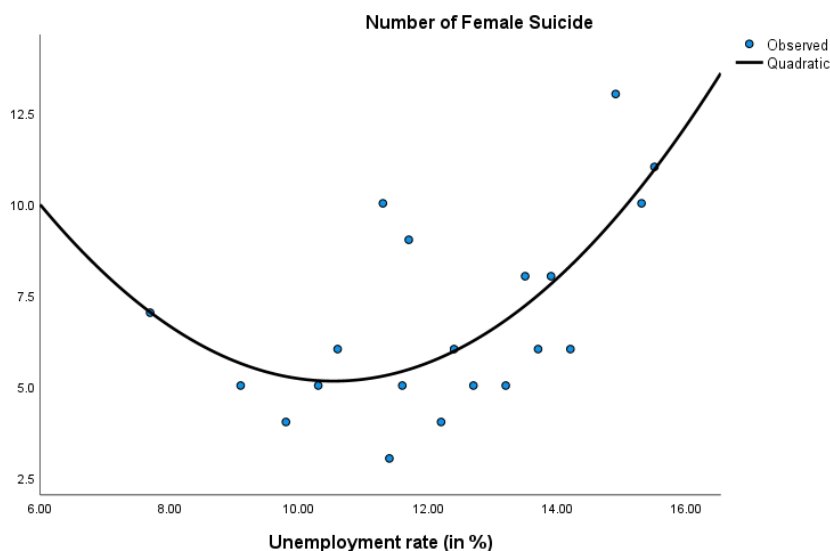


Figure 8: Number of Female Suicide by Unemployment Rates (in %)

Figures 9 and 10 depict scatter graphs of suicide by gender and poverty rates in Jamaica. Based on the scatter points, generally, there seems to be no straightforward linear or curvilinear relationship between the two variables above.

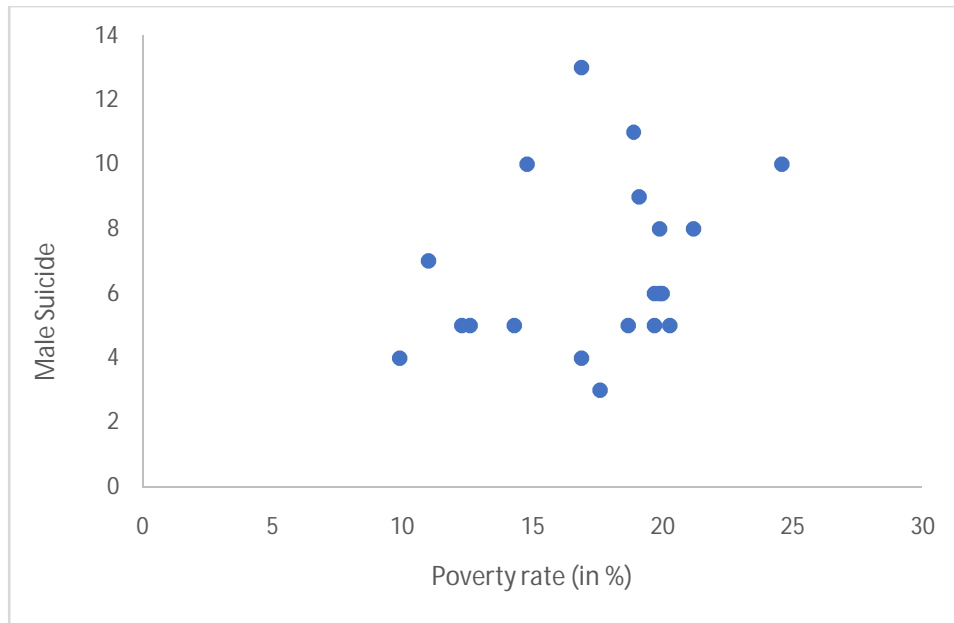


Figure 9: Number of Male Suicide by Poverty Rates (in %)

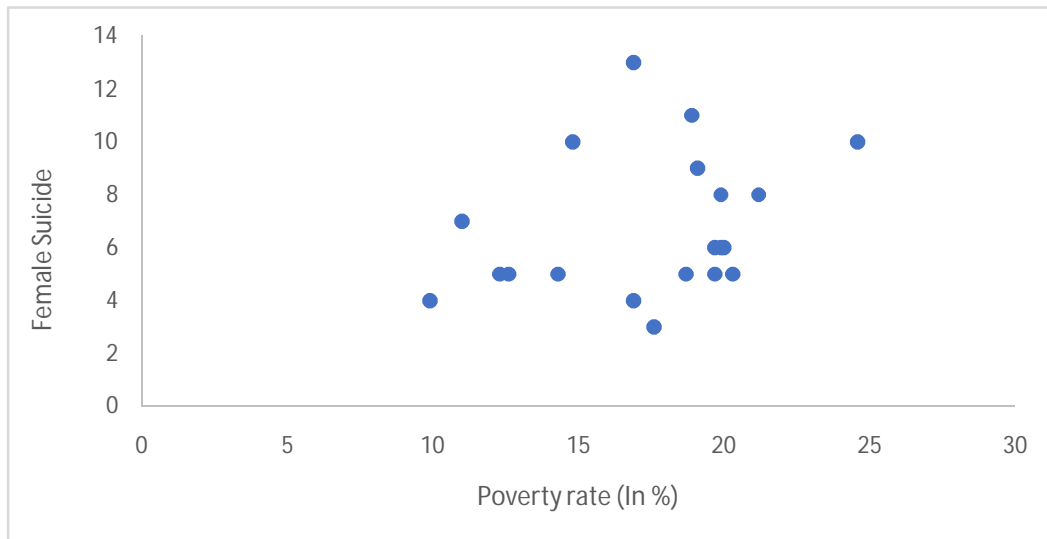


Figure 10: Number of Female Suicide by Poverty Rates (in %)

Figure 11 depicts a scatter diagram of the number of suicide and homicides in Jamaica from 2000 to 2019. The findings revealed that the number of suicide is best fitted by a polynomial function ($r^2=0.7133$ or 71.33%). The results show that the correlation between the number of suicide and the number of homicides in Jamaica is a curvilinear function, emphasizing that there are periods where homicides and vice versa directly influence suicides.

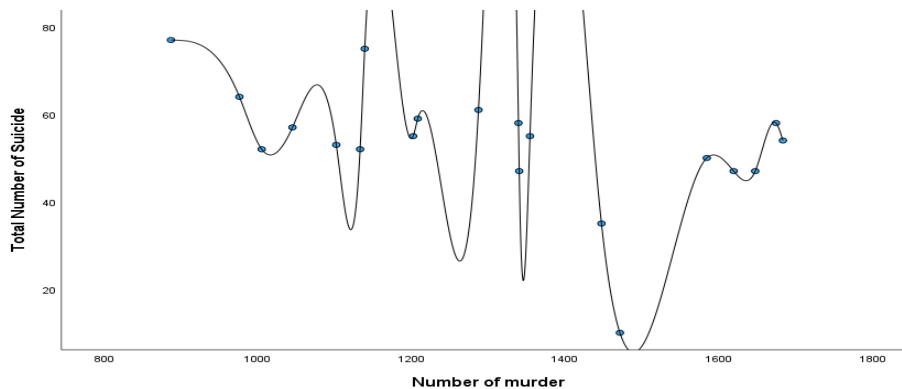


Figure 11: Scatter plots and a superimposed polynomial function of suicide and homicide

Discussion

Durkheim's theory on suicide rates in a society provides a broad context for individual suicide, the power of social integration. Based on Durkheim's theory on suicide, a society in which there is social disintegration, the rules are not followed, there is low social cohesion, and a low bond between individuals, that social group is expected to have a high suicide rate. The macro-environment in society holds the key to understanding suicidal behaviour. Durkheim's work on suicide sets the premise for researchers studying sociological, psychological, and economic factors influencing suicide (Schrijvers *et al.*, 2012). According to Schrijvers *et al.* (2012), "Several factors had a gender-dependent impact on suicidal behaviour: psychosocial life stressors such as stressful life events but also socio-demographic or socio-economical factors, and sexual abuse. The gender differences in psychiatric (co)morbidity and response to or attitude towards antidepressant treatment also appear to have an impact." Another group of researchers, Shand *et al.* (2020), cited that "Social determinants such as poverty, unemployment, homelessness, alcohol use and domestic violence are risk factors for suicide; their amelioration will lead to decreased suicide rates. A range of federal and state government policies can influence suicide rates, but what is not clear is which policy levers are likely to have the highest impact and to be most cost-effective." The current study has examined the macro environment in Jamaica (i.e., poverty rate, unemployment rate, and homicide) and provides insights into the influence of the macro on the micro level.

A study by Wang & Wu (2021) found that "After adjusting for demographic and socioeconomic characteristics, black males who lived up to two times the poverty line had a higher likelihood of suicidal thoughts ($p = 0.011$), and religion protected against suicidal thoughts ($p = 0.012$)." The current study does not concur with the literature that a linear relationship exists between poverty and suicides in Jamaica. No clear pattern emerged between the two variables in this study. Such findings mean that macro poverty in Jamaica does not have an evident influence on people's suicidal behaviour. A deduction that can be made from the current data in Jamaica is that the psychology associated with poverty is not influencing individuals' decisions to kill themselves. Poverty does not create a psychological state of depression at the individual level that frames social disintegration, social exclusion, and thoughts of committing suicide.

On the other hand, unemployment or economic deprivation caused by the structural environment exposes people to suicidal thoughts and acts. The current study found a non-linear relationship between unemployment rates and suicides in Jamaica. This research showed that unemployment beyond a certain per cent becomes a psychological stimulus for suicidal thoughts and acts at the micro level. Such results offer an insight into the individual difficulties that people experience during high unemployment rates and that when the macro environment contracts, it creates psychological stressors that frame a mindset around hopelessness. Based on Durkheim's theory on suicide, if the social framework does not correctly socialize people, they are likely to be victims of suicide in periods of physical, economic or psychological traumas. In this case, unemployment creates this truth in Jamaica. Mueller *et al.* (2021), "He [Durkheim] continue that suffering physically, psychologically, or spiritually, "does not exist for the believer firm in his faith or the man strongly bound by ties of domestic or political society."

Unemployment is, therefore, more than a macroeconomic phenomenon. It carries a psychological component in psychology (Goldsmith *et al.*, 1996) and public health discourse (Achdut & Refaeli, 2020; Pharr *et al.*, 2012). The current study is forwarding that when the unemployment rate in Jamaica exceeds 12 per cent, this macroeconomic phenomenon changes into a psychological force that induces suicidal thoughts and acts. During periods of unemployment of over 12 per cent in Jamaica, people's state of belonging and connectedness falls, opening the door for suicidal thoughts and acts. Wilson & Finch (2021) provides some support for the psychological of unemployment postulated by the current study as they opined, "Unemployment causes stress, which ultimately has long-term physiological health effects and can have negative consequences for people's mental health, including depression, anxiety and lower self-esteem." This study does not entirely support the argument that unemployment influences mental health conditions but offers a modification that unemployment beyond a certain per cent is a negative psychological stimulus and a warning for mental health challenges and the final act of suicide.

Like unemployment which has a psychological component, homicide/murder is no different (Buss, 2006; Fields, 2016; Kamaluddin *et al.*, 2021; Samuel, 2021, 2022) and can act as a stimulus for mental health challenges at the micro level. The psychology of homicide which this study purports is not the stimulus for revenge on another but that of personal harm. This research is forwarding that homicide has a micro-level stimulus for personal harm that must be brought into public health and social intervention programmes, particularly in Jamaica. The relationship between homicide and suicides in Jamaica is complex, and the current results provide a quantitative outlook on this issue. The literature has already established the correlation between homicide and suicide (Bills, 2017; Geddes, 1999; Pokorny, 1965; Wilson *et al.*, 1998), but current research has clarified this relationship. This study found a non-linear relationship between homicide and suicide, which indicates that variations in homicide directly influence suicides and vice versa. There is also a time lag before the individual internalizes committed homicide, and this process then fosters social exclusion from the group. This study shows that many homicide-suicides or murder-suicides are occurring in Jamaica, fueling the suicide rates in society.

On examination of the literature on suicide and Durkheim's theory on suicide, no study brought to the discourse the psychology of gender in explaining suicide in society. The literature has shown that, generally, across the globe, suicide is a male phenomenon (Tong et al., 2020; American Foundation for Suicide Prevention. (2022; Hedegaard, *et al.*, 2018; Mendez-Bustos, *et al.*, 2013; Poynton-Smith, nd; WHO, 2019). The American Foundation for Suicide Prevention (2022) reported that in 2020, male suicide was 3.9 times more than female suicide and that males account for 69.9% of the suicides in the Americas, with most of the males being middle-aged Caucasians. Furthermore, Cayetano (2016) found that in the Americas, males account for 79% of the deaths by suicide, the age-adjusted male and female suicide rate is 4.0 in Latin America and the Caribbean, and 36.8% of the suicide are committed by people ages 25-44 years and 25.6% of those ages 45-59 years old. The gender phenomenon in Jamaica is even worse than that across Latin America and the Caribbean. The current study found that for the studied period (2000-2019), on average, 86.2% of the suicides were committed by males and 18.8% by females in Jamaica. During 2000-2019, the per cent of males who committed suicide in 2004 was 60% which was the lowest for the time and as high as 94.4% in 2009 (male: female suicide rates: Generally on average 7:1; annually ranges from 5:1 to 17:1). A critical question to be answered in the suicide discourse is why there is a disparity in gender suicides across the globe.

This study purports that the sociology of gender has psychology that must be brought into the suicide discourse. The rationale for the psychology of gender is embedded in the biopsychosocial model developed and used by George Engel (1960, 1977a, 1977b, 1978, 1980) to treat psychiatric patients in the United States. Engel was of the view that psychiatric patients who seek medical care that mental health issue (symptoms of actual sickness (biomedical) is a result of social and psychological conditions. Based on Engel's perspective, he introduced social, environmental, and psychological components in the Medical curriculum at Rochester medical school (Dowling 2005: Brown 2000). Engel's biopsychosocial model became the anchor for the social determinants of health that the World Health Organization purported. This research purports that the psychological aspect brought into health treatment and the definition of health can only be so if the individual is also psychological. The reality is, using the biopsychosocial model, it can assume that people are a general system comprised of physical, social, psychological, and environmental. Hence, there is a difference in the psychological structure of males than males, so social disintegration and the macroeconomic climate influence them differently. Based on the current findings and that of the literature, this study purports that the systematic structure of society places more stressors on males, and this accounts for higher rates of suicides in periods of economic downturn, social upheavals, and social disintegration of society.

Conclusion

One suicide is one too many, which places the responsibility of recognition and necessary resources squarely on society's shoulders. Addressing suicide within society cannot be relegated to just the government as "it takes a village". The evidence is clear that this phenomenon mainly plagues males in society with females at a much lower rate. The

approach to addressing this issue must be holistic and multidisciplinary. The coordination that provides both standardized and individual treatment must be a part of the initial steps in addressing this deep-seated issue that is, for some, still taboo.

This study concludes that there are 1066 suicides (male, 930; females, 136), on average, 53 suicides are committed on an annual basis in Jamaica (male, 47; female, 7), and that the suicide rate lies between 0.38 and 2.97. The Jamaican suicide rate is considerably low in comparison with global and regional averages. In fact, except for the suicide rates for 2000 (2.97) and 2001 (2.88), Jamaica could be classified among the 10 countries with the least suicides in the world.

Durkheim's position on the macro socio-economic factors that influence suicide rates also holds in Jamaica. The current study found that unemployment and murders do influence suicides; but that the correlation is not a simple linear one. A polynomial function is best fitted for the scatter points of suicides and unemployment rates in Jamaica. Hence, an inverse statistical correlation exists between the number of suicide and the unemployment rates in Jamaica whenever the unemployment rate is less than 11.6%. On the other hand, when the unemployment rate passes 12.6%, a direct correlation emerges between the number of suicide and the unemployment rate. Furthermore, the findings revealed that the number of suicide and homicide is best fitted by a polynomial function ($r^2=0.7133$ or 71.33%). The results show that the correlation between the number of suicide and the number of homicides in Jamaica is a curvilinear function, emphasizing that there are periods where homicides and vice versa directly influence suicides. However, poverty does not influence suicide and so should not be brought into the discourse. Clearly, there is a psychology to gender, economics, and murder on suicide in Jamaica. This fact, reported by the World Health Organization, provides a certain level of urgency that all global citizens should share as we address the ongoing impacts of suicide on society.

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Annexe 1

Number of Suicides, Number of Suicides by Gender, Poverty rates, Unemployment rates, and number of homicides in Jamaica from 2000-2019

| Year | Suicide | | | Poverty rate (in %) | Unemployment rate (in %) | Homicide |
|------|---------|--------|-------|---------------------|--------------------------|----------|
| | Male | Female | Total | | | |
| 2000 | 66 | 11 | 77 | 18.9 | 15.5 | 887 |
| 2001 | 62 | 13 | 75 | 16.9 | 14.9 | 1139 |
| 2002 | 51 | 6 | 57 | 19.7 | 14.2 | 1045 |
| 2003 | 55 | 9 | 64 | 19.1 | 11.7 | 976 |
| 2004 | 6 | 4 | 10 | 16.9 | 12.2 | 1471 |
| 2005 | 48 | 10 | 58 | 14.8 | 11.3 | 1674 |
| 2006 | 42 | 5 | 47 | 14.3 | 10.3 | 1340 |
| 2007 | 46 | 4 | 50 | 9.90 | 9.80 | 1584 |
| 2008 | 41 | 6 | 47 | 12.3 | 10.6 | 1619 |
| 2009 | 51 | 3 | 54 | 17.6 | 11.4 | 1683 |
| 2010 | 29 | 6 | 35 | 19.9 | 12.4 | 1447 |
| 2011 | 47 | 5 | 52 | 20.3 | 12.7 | 1133 |
| 2012 | 45 | 8 | 53 | 19.9 | 13.9 | 1102 |
| 2013 | 45 | 10 | 55 | 24.6 | 15.3 | 1202 |
| 2014 | 46 | 6 | 52 | 20.0 | 13.7 | 1005 |
| 2015 | 51 | 8 | 59 | 21.2 | 13.5 | 1208 |
| 2016 | 50 | 5 | 55 | 18.7 | 13.2 | 1354 |
| 2017 | 42 | 5 | 47 | 19.7 | 11.6 | 1647 |
| 2018 | 56 | 5 | 61 | 12.6 | 9.10 | 1287 |
| 2019 | 51 | 7 | 58 | 11.0 | 7.70 | 1339 |

Annexe 2

Male and Female per cent of total suicides in Jamaica, 2000-2019

| Year | Male % of total | Female % of total | Total |
|-------------|------------------------|--------------------------|--------------|
| 2000 | 85.71 | 14.29 | 77 |
| 2001 | 82.67 | 17.33 | 75 |
| 2002 | 89.47 | 10.53 | 57 |
| 2003 | 85.94 | 14.06 | 64 |
| 2004 | 60.00 | 40.00 | 10 |
| 2005 | 82.76 | 17.24 | 58 |
| 2006 | 89.36 | 10.64 | 47 |
| 2007 | 92.00 | 8.00 | 50 |
| 2008 | 87.23 | 12.77 | 47 |
| 2009 | 94.44 | 5.56 | 54 |
| 2010 | 82.86 | 17.14 | 35 |
| 2011 | 90.38 | 9.62 | 52 |
| 2012 | 84.91 | 15.09 | 53 |
| 2013 | 81.82 | 18.18 | 55 |
| 2014 | 88.46 | 11.54 | 52 |
| 2015 | 86.44 | 13.56 | 59 |
| 2016 | 90.91 | 9.09 | 55 |
| 2017 | 89.36 | 10.64 | 47 |
| 2018 | 91.80 | 8.20 | 61 |
| 2019 | 87.93 | 12.07 | 58 |
| Average | 86.20 | 13.80 | |