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Experiences Which Add Risk for Development of Suicidal Ideations

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Abstract- There are a number of known suicide risk factors. Nevertheless, these risk factors are not necessarily closely related in time to the onset of suicidal behaviors – nor does any risk factor alone increase or decrease risk. Population-based research suggests that the risk for suicide increases with an increase in the number of risk factors present, such that when more risk factors are present at any one time the more likely that they indicate an increased risk for suicidal behaviors at that time. Child maltreatment has been investigated as a suicide risk for decades. The aim of this study was to evaluate the prevalence of women from the general population with suicidal ideas or attempts and add to the actual literature a larger perspective of different types of maltreatment in regards to experiences such as neglect, psychological, physical or sexual abuse, and its association to risk factor for suicide ideas and attempts. Data were collected during a telephone survey held between March and May, 2012 among a sample of 1,001 female adult respondents from Kenyan Public Universities. Questions were selected to investigate childhood maltreatment as a risk factor for probable depression, and actual post-traumatic stress disorders, and suicidal behaviours in the course of their lives. Regression analysis indicates a positive association between sexual abuse and suicidal ideations, as well as a positive association between sexual abuse, psychological abuse, probable depression and suicide attempts. Respondents, who attempted suicide, were two to three times more likely to have experienced the presence of sexual or psychological abuse in the past and four times more likely to have been screened for a probable depression. Interventions that target the early reduction of sexual or psychological abuse, may translate into ulterior reduction in mental health and suicidal behaviours.

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1. INTRODUCTION

Suicide Latin suicidium, from *sui caedere*, "to kill oneself") is the act of intentionally causing one's own death. Suicide is considered a possible complication of depressive illness in combination with other risk factors because suicidal thoughts and behavior can be symptoms of moderate to severe depression. Suicide is a major public health concern and it ranks among the top ten causes of death for individuals of all ages in most countries [World Health Organization (WHO), 2005]. Suicidal ideas and attempts

have been found as more often associated with women. For example, in the Kenyan population of 2011, 14.4% of the people that are 15 years and older had been acknowledged to have suicidal ideas during their lives (12.6% for men and 16.1% for women), and 3.5% said they had made a serious suicide attempt in their lifetime. A suicide attempt is a cry for help that should never be ignored. It is a warning that something is terribly wrong. Chronic depression can lead to feelings of despair and hopelessness, and a suicide attempt is one way some people choose to express these feelings. Most people who attempt or commit suicide don't really want to die - they just want their pain and suffering to end. A suicide attempt is also not done to gain someone's sympathy, as those that attempt to take their life do it for internal reasons-they simply can't stand the pain they feel emotionally and/or physically. It isn't to try and get someone to feel bad for them, that's the last thing they would want. A suicide attempt must always be taken seriously. Without intervention and proper treatment, a person who has attempted suicide is at greater risk of another attempt and possible suicide.

In 2011, 1.9% of the Kenyan population that are 15 years old and older had seriously thought of suicide within the past 12 months: 1.8% for men and 2% for women; and 0.5% of the population had made a serious attempt: 0.4% for men and 0.5% for women (Kairouz et al., 2008). Over the past 40 years, numerous studies have examined the relationship between suicide and mental disorders (Barracough et al., 1974; Lesage et al., 1994; Zhang et al., 2003). These studies have identified numerous clinical risk factors for suicide completion: previous suicide attempts, male sex, a family history of suicide, presence of psychiatric problems, as well as inadequate treatment of mental disorders and addictive behaviours (Arsenault-Lapierre et al., 2004). Psychiatric problems that are most commonly associated with suicide, have been characterized as affective disorders (McGirr et al., 2007), dependence disorders (Séguin et al., 2006), anxiety disorders (Sareen et al., 2005), as well as the presence of post-traumatic stress disorder (PTSD), which has been proposed to be associated with ulterior personality disorders (Oquendo et al., 2003; Vaiva et al., 2008). As for the presence of suicide ideation, a wide range of mental disorders have been found to increase the odds of experiencing suicide ideation, but the disorders have been characterized by anxiety and poor

impulse-control predict, which an individual with suicide ideation would act on such thoughts (Nock et al., 2010).

Besides the unequivocal importance of mental disorders, other experiential and environmental factors have also been supposed to contribute to the onset and persistence of suicidal ailing (Bruffaerts et al., 2010). In the wake of the interest in epigenetic and resilience (McGowan et al., 2009), some variables are again capturing the attention of researchers and clinicians. Early adversity, violence, and sexual abuse have been established to be among the most common risk factors, associated with ulterior mental health problems and suicide ailing (Kessler et al., 1997; McGirr et al., 2007; McGowan et al., 2009). The proportion of mental health outcomes attributable to physical abuse, sexual abuse, witnessing domestic violence or being a victim of domestic violence varies between studies. A study by Dube et al. (2001) have found that any one of these adverse childhood experiences: emotional, physical and sexual abuse; household substance abuse, mental illness, and incarceration; as well as parental domestic violence, separation or divorce, increased the risk of suicide attempted 2- to 5-fold. Molnar et al. (2001) noted that 7 to 12% of serious suicide attempts were attributable to rape or molestation in a nationally representative US sample.

More recently, a number of large-scale studies have investigated the link between specific types of childhood maltreatment, and future suicidal ideas and attempts (Afifi et al., 2008; Bebbington et al., 2009; Belik et al., 2007; Bruffaerts et al., 2010; Enns et al., 2006; Nock et al., 2010). Each study used a public dataset, including wide range of specific types of socio-demographic groups, and most studies have explored at least one or more type of childhood maltreatment and some additional traumatic experiences. The relationship between childhood past adverse events, and poor adult mental health and suicide attempts has been widely acknowledged in the clinical population (Bebbington et al., 2009), as well as in the general population (Belik et al., 2007; Bruffaerts et al., 2010). Enns et al. (2006) noted that childhood neglect, psychological abuse and physical abuse were strongly attempts. Other study has identified sexual and physical abuse (Hardt et al., 2008; Bruffaerts et al., 2010) as the strongest risk factor for onset and persistence of suicidal ailing. Other results suggested that a combination of exposure to three or more types of traumatic events were associated with suicidal ailing (Belik et al., 2007).

II. OBJECTIVES OF THE STUDY

The aim of this study is to add to the actual literature a larger perspective on different types of maltreatment. First, our objective is to have a better understanding of the early environmental factors associated with the suicidal ideas in a Kenyan female

population, by detailing the individual types of childhood maltreatment, such as different degree of neglect, of psychological, physical or sexual abuse, and their relation to future suicidal ideas. Secondly, our goal is to explore the specific experience, or the cumulative experiences, which add risk for development of suicidal ideas and behaviours.

III. RESEARCH HYPOTHESES

We hypothesized

- a positive link between child maltreatment (neglect, psychological, physical, and sexual abuse) and suicide attempts or suicidal ideas; and
- sexual violence would be a predictor of suicidal ideas and suicide attempts among a general population of female respondent.

IV. METHODOLOGY

a) Procedures

Data were collected via a telephone survey, conducted between March 23 and May 21 of 2012, among a sample of 1,001 female adult respondents from public universities admission records in Kenya. Two steps were carried out to select without substitution of respondent. Universities were first selected by a technique called "random digit dialing" among those having a telephone number in the universities. Then, in each selected university, a woman was chosen using a random selection schedule among those aged 18 years and over, and who could complete the survey in either Kiswahili or English. No substitution of respondent was allowed. In 2011, 86.4% of the university students in Kenya owned a mobile phone, which suggests that majority of the population have been included using this methodology (Statistics Kenya, 2011). The responses rate was calculated using the methods proposed by MRIA1 (MRIA, 2011). Using this empirical method, we obtained a response rate of 45.5%, but taking into account the calculation of the estimation method, the response rate becomes 73%. This last rate gives a secondary measure to assess the quality of the survey data.

Verbal consent of respondents was requested at the time of the interview, and the study received approval from Kenya Science ethics review Board. Each interviewer received specific training regarding the study's objectives, the questions and possible answers from the researcher. In addition, a portion (around 10%) of the interview was subjected to an audio systematic review in order to check the quality of the interview.

b) Sample

Data from 1,001 university female respondents were weighted by education level and age. Adults aged 18 years and over. Afterward (Institut de la Statistique, 2001), a correction for design effect was applied. Design effect is equal to $1/(1 + \text{variance of weighting})$

coefficients), and each weighting coefficient was multiplied by 0.62 (or 1/1.61), in order to correct the weighting effect on statistical accuracy (Kish, 1965). The initial sample of 1,001 respondents corresponded, following this correction, to a sample of 620 respondents with the same characteristics of the population in terms of distribution by education level and age. This weighting and correction for design effect thus reduced disparities between characteristics of the sample and those in the population. It also prevented overestimating data.

c) *Measurements*

Socio-demographic variables were identified using questions regarding age, geographic region of residence and academic level. These variables were selected from a questionnaire, developed by Tourigny et al. (2006), for a previous prevalence study of child maltreatment. Other questions were selected to investigate early childhood abuse, as well as to screen for the presence of probable depression, actual post-traumatic stress disorders, and actual suicidal behaviours.

d) *Independent variables*

Neglect, psychological, physical and sexual abuse in childhood neglect

Neglect during childhood was measured using items from the Comprehensive Child Maltreatment Scale for Adults (CCMS) (Higgins and McCabe, 2001). These questions evaluated the lack of basic care (food, bathing, clean clothes, and medical attention) and the experience of being locked-up for a long period of time; or experience of being ignored for a long period of time. These questions were answered using a Likert's scale, ranging from "never" to "very often". Obtaining an above-average score was a positive indication of neglect.

e) Psychological abuse during childhood

Direct and indirect psychological abuse before the age of 18 years old was evaluated: direct psychological abuse aimed at the child (that is, being threatened, humiliated or ridiculed "often" or "very often" in childhood) and indirect psychological violence was defined as having witnessed inter-parental violence, respectively. Prevalence of psychological abuse was defined as having experienced either direct or indirect psychological abuse (Clément et al., 2000).

f) Physical abuse during childhood

Questions were used to evaluate childhood physical abuse (mild and severe), experienced by the respondent. Respondents indicated their answers on a four point Likert's scale, ranging from "no, never" to "yes, very often".

Mild physical abuse was defined as receiving a spanking "often" or "very often", while severe physical abuse was defined as being hit harder than a spanking

at least once (Clément et al., 2000). In Health Survey, mild physical abuse was defined as "adult conduct toward a child that aims to modify behaviours through the use of corporal punishment or physical force". These conducts may provoke discomfort or pain without hurting the child; they are generally admitted by law, and even, may be recognized as a right in the exercise of the parental role.

For severe physical abuse, Clément et al. (2000) referred to "[...] disciplinary conducts or corporal punishments of such a nature that they are likely to hurt the child. These conducts may be similar to abusive forms of conduct toward the child"). The prevalence of physical abuse is defined as having experienced either mild or severe physical abuse.

g) Sexual abuse during childhood

Items measured the presence of sexual abuse during early childhood. Questions concerning forced sexual relations (either complete sexual relations or fondling before the age of 18) were part of the interview. These items were selected from a study by Finkelhor et al. (1990), which permitted the identification of a dichotomized variable.

h) Screening for symptoms of depression

The screener included the items for assessing major depressive and dysthymic disorders from the 12-month Composite International Diagnostic Interview (CIDI), and items assessing depression symptoms in the past month (Essau and Wittchen, 1993; Pez et al., 2010). We defined people as having a probable disorder if they experienced at least two weeks of being depressed or having lost interest in pleasurable activities during the last year, or persistent depression over the year, plus having at least one week of depression within the last 30 days. Based on a sample of 1,485 study patients, who underwent the full CIDI affective disorders section, the positive predictive value of this self-administered screener is about 55%. In other words, in the population of patients identified by the screening questionnaire, about half have clinical depression.

i) Symptoms of post-traumatic stress disorders

Symptoms of posttraumatic stress disorders were screened using four questions in the Primary Care Post-Traumatic Stress Disorder (PC-PTSD). This screening has been used to identify the presence of symptoms by first-line clinicians (Prins et al., 2003). Questions, concerning flashbacks, dissociative reactions, hypervigilance and avoidance behaviours, were assessed. This measurement has had good psychometric properties and high test-retest fidelity (Prins et al., 2003). Its diagnostic validity has been good (Prins et al., 2003). With this screening test, three positive responses out of four were needed to be considered as a clinical threshold for the presence of PTSD.

i) *Dependant variables*

Suicidal behaviours : Questions regarding the presence of suicidal behaviours were based on questions taken from the Epidemiological Study (Kairouz et al., 2008). The questions were: (1) Did you ever think of committing suicide? (2) Have you ever made a suicidal attempt that did not require a visit to the hospital? (3) Have you ever made a suicidal attempt that did require a visit to the hospital? Other questions that were assessed focused on the age at which the first suicidal ideas appeared, the age of the first suicide attempt, the number of suicide attempts requiring a visit to the emergency unit of a hospital, as well as the number of attempts that did not require a visit to the emergency unit of a hospital.

j) *Statistical analysis*

Statistical analyses were performed using the Statistical Package for Social Sciences (SPSS), version 15.0. Chi-squared analysis was performed to analyze the demographics and to compare the proportion of the population against the presence of clinical variables. Logistic regression (odds ratio and 95% confidence interval) was used to identify the variables mostly associated with the presence of suicidal behaviours.

V. RESULTS

a) *Socio-demographic variables*

A sample of 621 respondents was selected from the initial population of 1,001 respondents in order to ensure representation of female respondents in the population by age, education and geographical region. Respondents were living in different parts of the province with 69.5%, in age between 25 and 64 years old. Their incomes varied from Ksh.20,000 to more than Ksh.80,000, and 31.8% had either their second or third year in the university.

b) *Prevalence of suicidal behaviours*

The results indicate rates of suicidal ideation and attempt similar to those found in epidemiologic studies for other population. The rates for women having experienced suicidal ideations alone is 15.0% when compared with 16.1% found in epidemiologic studies from other places (Kairouz et al., 2008). The rates for suicide attempts are slightly higher, reaching 8.2% when taking into account all types of suicidal attempts (with and without hospitalization), while the rates found in epidemiologic studies were closer to 5.3% (Kairouz et al., 2008).

The suicidal ideas or attempts were present at a relatively young age: 24.7 and 22.9 years old, respectively. When identifying suicide attempts that required a visit to an emergency room (ER) of a hospital, 5.0% of respondents indicated having gone at least once, compared with the 5.6%, who attempted suicide and did not need to go to an ER ($p = ns$). Suicidal

thoughts and behaviors (including suicide attempts and death by suicide) are commonly found at increased rates among individuals with psychiatric disorders, especially major depressive disorder, bipolar disorders, schizophrenia, PTSD, anxiety, chemical dependency, and personality disorders (e.g., antisocial and borderline). A history of a suicide attempt is the strongest predictor of future suicide attempts, as well as death by suicide. Intentional self-harm (i.e., intentional self-injury without the expressed intent to die) is also associated with long-term risk for repeated attempts as well as death by suicide.

c) *Prevalence of child maltreatment and mental health problems*

The results indicate a significant difference between the prevalence of people having experienced child maltreatment and mental health difficulties (neglect, psychological, physical and sexual abuse, as well as symptoms of depression and symptoms of PTSD) when compared with those with no experiences of these adverse situations. Respondents had experienced psychological abuse range from 11 to 18.5%: direct violence 11%, indirect violence 13%, and both types of violence 18.5%, respectively. Physical abuse ranged between 9.5 and 12.4%: mild 9.5%, severe 9.8%, and 12.4% experienced both types. Respondents, who were exposed to childhood neglect, were among 11.6% of the population. The range for sexual abuse varied between 6.5 and 21.2%. Respondents, who were victims of fondling, were among 20.2% of the population, and those who were victims of rape were among 6.5% of the population, respectively.

As for the presence of mental disorders, using a screening questionnaire, we identified that 12.6% of the population have been screened for probable depression, and 7.7% had three or more symptoms of PTSD. As for the respondents who attempted suicide, we found a positive association for the presence of all clinical variables. Those, who experienced one or more types of adversity, were significantly more at risk of a suicide attempt over their lives (psychological, physical and sexual abuse, neglect were screened for probable depression, and symptoms of PTSD). As for the respondents with lifetime suicidal ideas, we found a positive association for the presence of neglect, fondling and rape, and they were screened for probable depression.

d) *Predictors of suicide attempts and suicidal ideas*

Logistic regression analysis revealed that respondents who attempt suicide (with or without a medical visit) were more likely to have been exposed to the presence of specific clinical variables. Respondents who attempted suicide were two to three times more likely to have experienced the presence of sexual violence (OR = 2.93; CI95% = 1.074 – 9.020) or

psychological violence (OR = 2.72; CI95% = 0.999 – 5.827) in their earlier years. They were almost four times more likely to have been screened for probable depression (OR = 3.79; CI95% = 1.333 – 11.083).

A second logistic regression analysis revealed that respondents who had suicidal ideas were more likely to have been exposed to the presence of sexual abuse. They were 2.5 times more likely to have experienced the presence of sexual violence.

Besides that, Psychiatric co-morbidity (greater than one psychiatric disorder present at the same time) increases risk for suicide, especially when substance abuse or depressive symptoms coexist with another psychiatric disorder or condition. A number of psychosocial factors are also associated with risk for suicide and suicide attempts. These include recent life events such as losses (esp. employment, careers, finances, housing, marital relationships, physical health, and a sense of a future), and chronic or long-term problems such as relationship difficulties, unemployment, and problems with the legal authorities (legal charges). Psychological states of acute or extreme distress (especially humiliation, despair, guilt and shame) are often present in association with suicidal ideation, planning and attempts. While not uniformly predictive of suicidal ideation and behavior, they are warning signs of psychological vulnerability and indicate a need for mental health evaluation to minimize immediate discomfort and to evaluate suicide risk.

VI. DISCUSSION

Methodologically, many precautions were taken to make sure that the population investigated in the current study was representative of the female population (Kish, 1965). Our results indicate almost the same prevalence for suicidal ideas and attempts as those, found in epidemiologic studies in other places (Institut de la Statistique du Québec, 2010) and those, found in two literature review, who have concluded that 22.3 and 19.7% of women were sexual abuse as children, respectively (Gorey and Leslie, 1997; Pereda et al., 2009). Results from the presented study are consistent with results from other studies (Bebbington et al., 2009; Bruffaerts et al., 2010; Enns et al., 2006; Hardt et al., 2008). We observed the same association between the presence of violence, mental health problems and suicidal behaviour in a sample of the general female population.

We confirmed our hypothesis since the results indicated a positive association between the presence of suicidal attempts and of past adversity like neglect, psychological abuse, sexual abuse, as well as the presence of current mental health difficulties among a sample of the female population. Respondents, who had experienced sexual violence and psychological violence before 18 years of age and were screened for

probable depression, were two to almost four times more likely to have attempted suicide. The presented results suggest the co-occurrence of difficulties among women having attempted suicide, more so than for women having suicidal ideas.

VII. SUGGESTIONS FOR FURTHER RESEARCH

Due to the methodology, there is no way of being certain that the current symptoms of depression and PTSD are directly linked to past violence, since other events may have triggered the episode of depression or PTSD. Further research would be necessary to confirm this causal link. The results from this study are not sufficient for establishment of a case for sequential developmental difficulties, however, it is clear that suicidal behavior does not happen “out of the blue” (Bebbington et al., 2009), but it also emerges from a sequence of events that may start with early adverse events with the presence of child maltreatment, whose impact on affective disorders may be long lasting and culminate at one or more times over lifetime of suicidal attempts.

VIII. LIMITATIONS

The presented study has the advantage of exploring all forms of family violence in childhood with a sufficient large representative sample of Kenyan university female participants. Nevertheless, there are some classical limits for this type of study, namely: 1) the sampling method by telephone number does not allow reaching respondents, who may have been particularly at-risk for childhood victimization and suicidal behaviours, such as homeless or institutionalized adults; 2) the reliance on a few questions to measure childhood victimization experiences does not permit a detailed description of the nature and severity of each form of violence, and 3) an empirical response rate of 45.5%, but an adequate estimative response rate of 75%. Even though, we used a number of best practices designed for the recruitment process in order to help maximize response rates, this empirical response rate seems to stay the same across studies.

Indeed, Gorey and Leslie (1997) noted that prevalence studies of sexual violence with adult populations showed an average response rate of 49%. However, a tendency for a lower participation rate in studies relying on phone interviews has also been observed internationally in the past years (Government of Canada, 2007). Finally, another limitation is a lack of knowledge about the sequential occurrence of different adversities in the lives of the respondents.

However, despite these limitations, the prevalence for suicidal behaviour and sexual abuse, identified in this research, are similar to those, found in epidemiologic studies. Unfortunately, lack of data

concerning the sequential occurrence of events, limits the possibility of elucidating the temporal relationship between presence of clinical variables, and the onset of psychopathology and suicidal behaviours.

IX. CONCLUSION

Results from this study, in agreement with the data from other studies, suggest a greater awareness for caregivers in order to investigate the presence of child maltreatment, especially psychological and sexual abuse, when evaluating suicidal behaviours or affective disorders, since the presence of these variables could warrant more specific and targeted interventions. Similarly, with a number of other studies (Bebbington et al., 2009; Enns et al., 2006; Kessler et al., 1997) that have suggested from a public health prevention perspective, interventions that target the early reduction in violence (sexual and psychological) may be translated into reduction in mental health, and, in this way, suicidal behaviours. Factors that may increase risk or factors that may decrease risk are those that have been found to be statistically related to the presence or absence of suicidal behaviors. They do not necessarily impart a causal relationship. Rather they serve as guidelines for the clinician to weigh the relative risk of an individual engaging in suicidal behaviors within the context of the current clinical presentation and psychosocial setting. Individuals differ in the degree to which risk and protective factors affect their propensity for engaging in suicidal behaviors. Within an individual, the contribution of each risk and protective factor to their suicidality will vary over the course of their lives. No one risk factor, or set of risk factors, necessarily conveys increased suicidal risk. Nor does one protective factor, or set of protective factors, insure protection against engagement in suicidal behaviors. Furthermore, because of their different statistical correlations with suicidal behaviors, these factors are not equal and one cannot "balance" one set of factors against another in order to derive a sum total score of relative suicidal risk. Some risk factors are immutable (e.g., age, gender, race/ethnicity), while others are more situation-specific (e.g., loss of housing, exacerbation of pain in a chronic condition, and onset or exacerbation of psychiatric symptoms).

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