

Psychosocial Risk Factors for Suicidal Behavior among Adolescents in Informal Settlements of Nairobi County, Kenya

Priscilla Mugambi, Alice Munene and Mary Mogute
Daystar University P.O Box 44400 -00100, Nairobi, Kenya
Department of Clinical Psychology,
Email: priscillawmugambi@daystar.ac.ke

Abstract

Suicidal Behavior (SB) is a precursor to eventual death by suicide. Hence, in suicide preventive effort there's the need for accurate identification of those at risk. The main objective of this study was to assess the psychosocial risk factors for SB among adolescents in the informal settlements of Nairobi. The study used quasi-experimental design and results are at baseline analysis. High-school students aged between 14-22 years old from the informal settlements of Nairobi were targeted. Four high schools were purposively sampled and data was drawn from the 1,040 respondents in the entire school population who were screened at baseline. Data was collected using Suicide Behavior Questionnaire-Revised (SBQ-R), PTSD Checklist for DSM-5 (PCL-5), Beck's Depression Inventory (BDI-II), and a socio-demographic questionnaire. Data analyzed using SPSS version 24 software was presented in tables and results were discussed. The findings revealed DD and PTSD as significant ($p < 0.001$) risk factors for SB. Separate logistic models established the following life stressors as psychosocial risk factors ($p < 0.001$) for SB in the following order of severity; hopelessness and worthlessness, relationship problems, traumatic experiences, mental disturbances, family problems, alcohol or substance abuse, physical illness, academic challenges, financial problems and death of dear ones. Considering these risk factors, psycho-education on SB among adolescents is imperative for early detection of those at risk. This would lead to timely intervention for the prevention of suicide.

Keywords: Risk factors, suicidal behavior, psychosocial, adolescents.

1. Introduction

Suicide is a top cause of death, ranking second globally, on causes of death among adolescents and young adults aged 15 to 29 years old (World Health Organization [WHO], 2017). Death by suicide causes great distress to the dear ones and society at large. Hence, the need to investigate the factors that put adolescents at risk of SB for awareness creation and enhancement of support systems. Risk factors are defined as characteristics that increase the likelihood of an outcome. Information on risk factors is crucial in the detection and management of high-risk suicidal patients (Turecki & Brent, 2016). The risk factors for SB are classified into three broad categories; the community or relationship risk factors, individual risk factors, and genetic or biological factors (WHO, 2013). The biological factors are associated with psychiatric disorders caused by low serotonin levels which characterize the mood and personality disorders (Carballo, Akamnonu & Oquendo, 2008). It's been established that 90% of suicidal cases are associated with psychiatric problems (Arsenault, Kim & Turecki, 2004; Uwakwe & Gureje, 2011). This qualifies SB as a mental health problem. These problems include the following: psychiatric disorders, psychological distress, family problems, dysfunctional interpersonal relationships, alcohol or substance abuse and financial constraints

1.1 Psychiatric disorders

Psychiatric disorders that increase the likelihood of SB include; mood disorders, anxiety, personality, and psychotic disorders. A majority of suicidal persons suffer from mood disorders such as DD (Isometsa, 2014). A study by Farabaugh et al., (2012), found DD, hopelessness, and suicidal ideation to be associated with multiple suicide attempts. Suicidal individuals have reported varied personality and anxiety disorders, among them PTSD (Miranda et al. 2008; Osváth, et al. 2003). Personality disorders such as borderline personality disorder (BPD), are highly associated with both a history of childhood trauma and SB (Soloff, Lynch & Kelly, 2002). According to Filinto et al., (2009) most of the persons who had experienced trauma in the form of physical, emotional, and sexual abuse were likely to have attempted suicide more times than the general population.

Studies in South Africa and Nigeria found a history of traumatic experiences such as sexual abuse, physical attacks, and involvement in physical fights to be significant predictors of SB (Fine et al., 2012; Omigbodun et al., 2008). Adolescents in Kenya who had experienced trauma were found to be at a high risk of developing DD (Mugambi & Gitonga, 2015). Therefore, trauma-related difficulties are likely to lead to mental disorders and consequently a sense of despair leading to suicidality. DD has been highly endorsed as a major causal factor for suicidality among adolescents and adults in Kenya (Khasakhala, et al., 2013; Ongeru et al., 2018). In a study conducted in one of the universities in Kenya, Othieno et al., (2015), noted a history of physical abuse and DD to be among the risk factors for suicidality. This implies that DD and PTSD among other psychiatric disorders are associated with high rates of suicidality.

1.2 Psychological distress

Psychiatric disorders tend to be aggravated by the diverse community, relationship, and individual life stressors (Arango, 2018). Hence, each suicidal case tends to arise from diverse predisposing, precipitating, and perpetuating factors. Aspects ranging from childhood experiences to family factors, individual and interpersonal difficulties, as well as biological dispositions, lead to psychological distress which may consequently pose a great risk to both mental illness and SB (Eskin et al., 2016; Tosevski, Milovancevic, & Gajic, 2010). Among adolescents, stressors arising from intrapersonal and interpersonal anguish qualify as strong predictors for SB (Eskin et al., 2016).

Adolescents who are mostly in high schools are in a critical transition period from childhood to and early adulthood (American College Health Association, 2013). Thus, they are likely to present with psychological distress as they struggle to adjust in life demands. Gallagher (2015), noted that about 44% of the students receiving counseling services at universities in the United States of America were experiencing severe psychological distress. In Canada, a study with a sample of about 30,000 students from 34 universities and colleges established that a significant number of students felt overwhelmed, exhausted, hopeless, and lonely (ACHA, 2013) leading to psychological distress and the likely SB. These may arise from increased responsibilities as well as cognitive and psychosocial development leading to heightened self-awareness, overwhelming thoughts, and need for independence among other developmental crises that challenge their coping abilities (Tsang, Hui, & Law, 2012).

1.3 Family problems

Adolescents are likely to experience distress due to problems emanating from family cohesion since they are still dependent on their parents. Some of the family factors that pose risks to suicidality include; childhood sexual or physical abuse, emotional abuse, poor parent-child relationship, poor parenting styles, loss of primary caregivers, and psychopathology in close family members (Miller et al., 2013; Zhai et al., 2015). A history of family psychopathology has been established as a risk factor for high levels of hopelessness and suicidal ideations (Filinto et al., 2009). Moreover, having cases of suicide and suicidal attempts in the family is a strong predictor for suicidality (Forman et al., 2004; Jang et al., 2016). In Nigeria, adolescents from polygamous and disrupted families had higher rates of SB (Omigbodun, 2008), whereas in Kenya higher rates of SB were noted among the youths whose mothers had DD and exhibited rejecting behavior towards their children (Khasakhala et al., 2013). This may be an indication of mental abuse through negligence and poor parental care. Thus, children from dysfunctional families and those with mentally disturbed caregivers, are likely to be at risk of engaging in SB.

1.4 Dysfunctional interpersonal relationships

Dysfunctional interpersonal relationships act as stressors leading to SB. According to Van Orden et al. (2010), SB results from perceived interpersonal detachment and feelings of being burdensome and despair. Higher rates of SB among the youth have been reported after break-ups in romantic relationships (Baker, Helm, Bifulco & Chung-Do, 2015; Brent et al., 2010). The romantic relationships could be their way of seeking solace from other distressing relationships since, Mugambi and Gitonga (2015), noted a high number of adolescents in Kenya experienced conflicting parent-child relationships, rejection by friends and low self-esteem which made them vulnerable to DD. Therefore, distressing interpersonal relationships lead to emotional anguish which may result in SB due to perceptions of being unloved, burdensome and unwanted by significant others.

1.5 Alcohol or substance abuse

Distressed youths tend to seek relief from alcohol or substance abuse, which are established risk factors for SB (Bottorff, Johnson, Moffat, & Mulvogue, 2009; Kaslow et al., 2006; Poorolajal et al., 2015). According to Kokkevi et al., (2012), in a study among adolescents in 17 European countries, SB had significant associations with gender, substance use, family integrity, and socioeconomic status. A study by Dragisic, Dickov, Dickov, and Mijatovic (2015) among drug addicts, noted that higher risks of suicide attempts were related to the duration of substance use and use of intravenous drugs. Thus, the longer a person had used these substances the higher the likelihood of eventual death by suicide.

Analysis of data from middle and low-income countries found SB to be highly associated with the use of all forms of substances including drugs that were not medically prescribed (Breet, Goldstone & Bantjes, 2018). In Africa just as in developed countries, abusing drugs and substances is highly related to suicidality. A study in Benin found high rates of suicide attempts to be associated with the use of illicit drugs (Randall, Doku, Wilson, & Peltzer, 2014). Similarly, Dunlavy, Aquah, and Wilson (2015) noted that the youths in Tanzania who were using illicit

substances were likely to have suicidal tendencies. A study in Kenya concurred that youths who had a history of alcohol, tobacco and substance use were at a high risk of SB (Ndegwa, Munene & Oladipo, 2017; Othieno et al., 2015). Therefore, alcohol and substance abuse are among the globally established risk factors for SB.

1.6 Financial Constraints

Financial constraints act as stressors and can therefore, precipitate SB especially when accompanied by feelings of hopelessness. An increase in suicide rates has been noted during times of economic downturns in the United States of America and Portugal (Luo et al., 2011; Pereira et al., 2016). According to Chang, Stuckler, Yip, and Gunnell (2013), when financial instability is comorbid with mental disorders, it is likely to heighten the risk for suicidality. In South Africa, the greater socioeconomic disadvantage was found to be associated with higher rates of suicide attempts (Burrows & Laflamme, 2010). Hence, financial constraints intensify psychological distress in effort to cope with financial demands leading to SB.

Among the youth, financial difficulties may lead to high-risk behavior as they seek ways of resolving their financial concerns. In Uganda, youths from low social-economic background reported the major precipitating factors for SB were; alcohol abuse (48.12%), sexually transmitted diseases (53.38%) and HIV (13.91%), experiencing rape (28.95%) and having been abused in childhood by parents (51.50%) (Culbreth, et al., 2018). Similarly, poor social-economic backgrounds were identified as risk factors for SB among university students in Kenya. These students were also found to be at a high risk of alcohol and tobacco abuse, testing positive with HIV, and having a history of physical abuse and DD (Othieno et al., 2015). Most adolescents from a low social-economic background may have had difficult childhoods and persistence financial constraints that are likely to lead to a sense of hopelessness regarding their lives' ambitions. Hence, opting for suicide as a suitable alternative to end their miseries.

The study therefore, intends to establish the risk factors for SB among these vulnerable adolescents. This would lead to enhancement of early detection and support of high-risk suicidal adolescents.

2 Methodology

The study used quasi-experimental design and results are at baseline analysis. The target population was high school students aged between 14-22 years old from the informal settlements of Kibra and Dagoretti North Sub-counties. Kibra Sub-county has a total of 19 private high schools and 7 public high schools whereas, Dagoretti North Sub-county has a total of 31 private high schools and 9 public high schools (MoE, Sub-County Office, 2019). From the 66 high schools in the 2 sub-counties four high schools were purposively selected due to their location in the informal areas and they are in the day-mixed category. The four sampled high schools comprised of two public high schools and two private high schools. The 2 public high schools were in the category of extra-county schools. The extra-county schools rank second after the National schools in admission of students and they tend to have a high population. The 2 private schools from which the study population was drawn are in the category of low-cost private secondary schools.

Since the study took a quasi-experimental design, the sample size was calculated using the formula presented in Fleiss, Levin and Paik (2001), for calculating sample size when comparing two binomial distributions (experimental & control groups). The sample size was calculated at the confidence level of 95%, significance level of 0.05 and the power of 80%. The estimated proportion in arm 2 (P1) was based on 27.9% prevalence of SB among Kenyan adolescent students (Palmier, 2011) and the estimated proportion in arm 1 (P2) was based on 24.1% prevalence of SB in Kenya (Jenkins et al., 2015). Using this formula, the total sample size calculated with the attrition rate was 105. This implies that a total of 105 respondents with SB, DD and PTSD was statistically enough for the post-test procedure. To obtain the 105 respondents with the desired characteristics a higher number of respondents had to be screened at baseline up to the attainment of the sample size. To facilitate this, a total of 1,040 respondents from the 4 sampled high schools were screened at baseline.

The four mixed-day high schools from Kibra and Dagoretti North sub-counties of Nairobi were purposively sampled due to their location in the informal settlements, residential status and population mix of the students. In purposive sampling, the researcher deliberately picks the elements with the desired qualities of study (Kothari, 2013). Most of the youth in informal settlements of Nairobi are exposed to criminal activities, rape, trafficking and usage of drugs and alcohol and females engage in prostitution (Onyango & Tostensen, 2015). Having been exposed to trauma they are at a high risk of PTSD and depressive disorders. Therefore, this high risk population of the students in the 4 schools were screened for SB, DD and PTSD so as to isolate the desired sample size of 105 respondents with the study disorders for the experimental purposes and post-test analysis. However, baseline data from respondents who met the criteria for SB, DD and PTSD as well as those who did not meet the criteria was essential for the calculation of SB prevalence and determination of the risk factors for SB.

In the baseline assessment, the socio-demographic questionnaire, a Likert scale for rating SB stressors, and three standardized psychological assessment tests were self-administered to the respondents. The psychological assessment test used comprised of SBQ-R for assessing SB, PCL-5 for screening PTSD, and BDI-II for DD. Data collected were coded, inputted, and analyzed using the Statistical Package for Social Sciences (SPSS) version 24. The data generated in frequencies, means, percentages, standard deviations, and p-values were presented in tables. Ethical issues were observed throughout the research process.

3 Results

3.1 Key socio-demographic Characteristics of the Respondents

From the 1,040 respondents who participated in the study, the number of females was slightly a higher (51.3%), than that of males (48.2%) and good numbers of them were younger adolescents aged between 14 and 16 years (55.7%). A higher number of the respondents lived with both parents (51.5%) and single parents (27.8%) while the others lived with guardians or relative (18.6%). A high number lived in a one-roomed house (46.7%) compared to those in 2 and 3 roomed houses (41.5%) or four and above roomed houses (11.2%). This indicates that a higher number of the respondents were young adolescents, had both parents, and were from a low social-economic background.

3.2 Psychological Risk Factors for SB: PTSD and DD

The study respondents were categorized into four groups based on whether they had PTSD only, depression only, both PTSD and depression and whether they had none of these two conditions.

Table 1

Psychological risk factors for SB: PTSD and/or DD

PTSD, DD or both	No SB		Pathological SB		Chi-square P value
	N	%	N	%	
None	467	93.78	31	6.23	<0.001*
PTSD only	73	77.66	21	22.34	
DD only	125	87.41	18	12.59	
Both DD & PTSD	141	47.8	154	52.2	

Table 1 reveals the association between having and not having SB with having PTSD, DD, both or none. The majority (93.78%) of respondents with neither PTSD nor DD were unlikely to present with SB and only a minority (6.2%) had SB. This implies that most of the respondents who had no DD or PTSD were not at risk of SB. Suicidal respondents with both PTSD and DD (52.2%) were more likely to exhibit SB compared to those with PTSD only (22.34%) or DD only (12.59%). There was a statistically significant relationship ($p < 0.001$) between SB with DD and PTSD separately and in combination. The results imply that whereas, the presence of one disorder increased the risk of SB, having PTSD comorbid with DD posed greater risks for SB.

3.3 Psychosocial Risk Factors for SB: Stressful Life Experiences

A self-rated Likert scale with diverse stressful life experiences that are likely risk factors for SB was used to evaluate the respondents' level of agreement or disagreement. Since the stressors were highly correlated with each other, separate logistic models were fitted for each of the predictors and average marginal effects were estimated.

Table 2

Association between Life Stressors and Suicidal Behavior

	Not suicidal	Suicidal	Estimate	P value
Stressors	n (%)	n (%)	(95% CI)	
Feeling hopeless, worthless	245(30)	171(76.3)	0.289 (0.25, 0.329)	<0.001
Relationships problems	269(33)	141(62.9)	0.196 (0.151, 0.241)	<0.001
Traumatic Experiences	170(20.8)	100(44.6)	0.18 (0.133, 0.227)	<0.001
Mental problems	231(28.3)	119(53.1)	0.17 (0.124, 0.216)	<0.001
Family problems	258(31.6)	125(56.1)	0.164 (0.117, 0.21)	<0.001
Alcohol, drugs/substance abuse	112(13.7)	62(27.7)	0.145 (0.088, 0.201)	<0.001
Physical illnesses/pain	243(29.8)	111(49.6)	0.138 (0.09, 0.186)	<0.001
Academic Challenges	395(48.4)	152(67.9)	0.134 (0.083, 0.184)	<0.001
Financial problems	473(58)	165(73.7)	0.117 (0.064, 0.171)	<0.001
Death of a close family member	351(43)	133(59.4)	0.11 (0.061, 0.159)	<0.001

Table 2 shows that the majority (76.3%) of respondents who had SB agreed that they had feelings of hopelessness and worthlessness. It is notable that, suicidal respondents had higher levels of agreement with the other life stressors too. All the effects were positive, an indication that those who agreed were more likely to have suicidal tendencies. The statistically significant relationship ($p < 0.001$), implies that the listed life stressors were associated with SB, therefore, they all increase the risk for SB.

The separate logistic models indicated that each stressor was associated with SB at different levels. Hopeless and worthless was ranked as the most severe risk factor for SB, followed by relationship problems, traumatic experiences, mental disturbances, family problems, alcohol or substance abuse, physical illness, academic challenges, financial problems, and finally death of a close family member.

4. Discussion

In assessing the risk factors for SB, a statistically significant relationship ($p < 0.001$) was established between SB with DD and/or PTSD, implying they are risk factors for SB. Presenting with a comorbidity of DD with PTSD posed a greater risk for SB in comparison to having just one of them. Studies in Tanzania and South Africa indicated similar results since

comorbidity of multiple disorders being associated with increased risk and persistence of SB (Khasakhala et al., 2011; Ndosì et al., 2004). Similar results have been found in Kenya where DD and PTSD were highly associated with suicidality among adolescents and adults (Khasakhala et al., 2013; Ongerì et al., 2018; Othieno et al., 2015). Considering that DD and PTSD tend to increase the likelihood of SB, treating mental disorders is crucial in reducing SB. However, Mewton and Andrews (2016) observed that interventions that targeted reduction of suicidal cognitions and behaviors were more effective on SB than those that focused treatment of mental illness alone.

The current study found the assessed stressful life experiences to be risk factors for SB since they were significantly associated ($p < 0.001$). In their rating, hopelessness and worthlessness were the highest risk factors for SB among the stressors. The study by Jeon et al. (2014) agreed with the current study that feelings of worthlessness were more strongly associated with suicidal attempts than other symptoms of DD in individuals with MDD who had also experienced serious trauma. Farabaugh et al. (2012) found DD and hopelessness to be associated with multiple suicide attempts. Hopelessness has also been found to be a strong predictor of eventual suicide in persons with psychiatric problems (Brown et al., 2000; Qiu, Klonsky, & Klein, 2017). Hopelessness which implies a sense of despair leads to feelings of gloom and resignation hence, suicidal tendencies (Huen et al., 2015). Since hopelessness is associated with multiple psychiatric problems, this may be an indication that their symptoms are highly distressing leading to feelings of helplessness and worthlessness. There is therefore, the need to mobilize relevant support and thought restructuring for despairing adolescents. This would help them envision a hopeful future and view themselves positively hence alleviating a sense of worthlessness and despair in life.

The current study rated relationship problems as the second risk factor after hopelessness on life stressors. Among adolescents', higher rates of SB have been reported after a break-up in romantic relationships (Baker, et al., 2015; Brent et al., 2010). Other relationship problems may entail bullying, rejection by friends, poor parental relationship, and low self-esteem (Klomek et al., 2007; Mugambi & Gitonga, 2015). The distress is likely to lead to DD and thus, a higher risk for SB. Negative perception towards interpersonal relationships leads to SB since suicide attempters tend to have feelings of being burdensome to their families thus supposing that their death would bring relief to the family (Van Orden, et al., 2006). Such perceptions indicate cognitive distortions hence the need for thought restructuring to promote logical thoughts (Beck, 2011).

Traumatic experiences were rated third among the stressors that posed as risk factors for SB. This is congruent with the findings by Omigbodun et al. (2008) that a history of traumatic events such as sexual abuse, physical attacks, and fights are significant predictors of SB. Likewise Foa et al., (2000) found that persons who had undergone trauma leading to PTSD were likely to present with multiple psychiatric disorders and multiple suicide attempts. Experiencing trauma is therefore an established risk factor for SB due to its linkage with distress leading to the development of other psychiatric problems.

In the current study, other problems that had a significant association with SB were; mental disturbances, family problems, alcohol or substance abuse, physical illness, academic challenges, financial problems, and death of a dear one. Researchers have found family

problems such as physical and emotional abuse, poor parent-child relationship, poor parenting styles, and psychopathology in close family members to be highly related to SB (Miller et al., 2013; Zhai et al., 2015). Adolescents' perception of poor parental care has also been noted as a predictor of SB (Randall et al., 2014). Adolescents in Kenyan high schools reported distress resulting from loss of close persons, chronic illness, witnessing, or personally being injured, hurt, or having neglecting parents (Karsberg & Elklit, 2012). Parental awareness of these risk factors is therefore of crucial importance since their behavior and psychosocial support have a great impact on adolescents' mental wellness.

Other studies agree with the current one that adolescents suffer psychological distress in their effort to adjust to a new social environment, relationships, and academic demands (Eskin et al., 2016; Pedrelli et al., 2015; Wilcox et al., 2012). They may also be faced with challenges associated with financial hardship, time management, anxiety over peer pressure, and substance use as well as personal problems. These are among the distressing life experiences which may lead to a state of despair when there's coping skills' deficiency. Since life stressors are inevitable there is need for empirically proven SB interventions targeting dysfunctional cognitive, emotional, and behavioral aspects of suicidality, to enhance healthy coping mechanisms (Mewton & Andrews, 2016).

Globally, studies have indicated a history of alcohol and substance abuse among adolescents and youths to be a risk factor for SB (Breet et al., 2018; Dunlavy et al., 2015; Kokkevi et al., 2012; Liu et al., 2019; Ndegwa et al., 2017; Othieno et al., 2015; Randall et al., 2014). Distressed adolescents tend to use substances of abuse to gain relief from their psychological suffering (Bottorff et al., 2009). This implies a need for effective distress tolerance life-skills so that adolescents do not have to rely on alcohol and substance abuse which may lead into despair hence heightening SB. The current study concurred with other studies on the death of a close family member being a risk factor for SB (Forman et al., 2004; Jang et al., 2016; Jeglic et al., 2005; Rostila et al., 2013; Van Orden et al., 2010). The stress associated with complicated grief and justification or role modeling of SB especially in cases of suicidal death by a parent may increase the risk for suicidal tendencies.

Financial instability was also associated with a heightened risk for suicidality in low, middle, and high- income countries (Luo et al., 2011; Pereira et al., 2015). Studies in Kenya and Uganda (Culbreth et al., 2018; Othieno et al., 2015) concur on higher rates of SB among the youth from a poor social-economic background. This category of youths is exposed to criminal activities, rape, trafficking drugs, and alcohol abuse, HIV Aids, and physical as well as sexual abuse (Culbreth et al., 2018; Onyango & Tostensen, 2015). These negative survival behaviors and insecure environments are likely to intensify their stress leading to SB. Hence the need for psychoeducation on SB risk factors at the community level, in learning institutions, and at the individual level through mass media, social media, and in guidance and counseling. Knowledge of SB risk factors is vital in reducing stigma and encouraging open communication on SB. This would consequently prompt social support and motivate at-risk persons to seek professional assistance.

5. Conclusion

The study provided insight into the mental disorders and life stressors that increase the risk for SB. PTSD and DD were established to be risk factors for SB. Having a combination of PTSD and DD posed a greater risk for SB. The fact that persons with DD and PTSD are at a higher risk of SB, indicates the need to equip adolescents with life skills for coping with trauma and distress that leads to these mental problems. Early intervention would entail facilitating relevant life skills for DD, PTSD, and SB in learning institutions.

The study ordered the stressful life experiences that are risk factors for SB according to their severity levels. Hopelessness and worthless ranked highly, followed by relationship problems, traumatic experiences, mental disturbances, family problems, alcohol or substance abuse, physical illness, academic challenges, financial problems, and finally death of close family members. These aspects need to be addressed in suicide prevention efforts since they increase the susceptibility to SB. The study, therefore recommends psychoeducation on SB risk factors among adolescents, their caregivers, and relevant professionals. This would enhance the support of those at risk thus preventing suicide.

References

- American College Health Association [ACHA] (2013). *American College Health Association-National College Health Assessment II: Thompson Rivers University Executive Summary Spring 2013*. Hanover, MD: American College Health Association.
- Arango, C., Díaz-Caneja, C., McGorry, P., Rapoport, J., Sommer, I. ... & Vorstman, A. (2018). "Preventive strategies for mental health" (PDF). *The Lancet Psychiatry*. 5 (7), 591–604.
- Arsenault-Lapierre, G., Kim, C., & Turecki, G. (2004). Psychiatric diagnoses in 3275 suicides: a meta-analysis. *BMC Psychiatry*. 4, 37.
- Baker, C., Helm, S., Bifulco, K., & Chung-Do, J. (2015). The relationship between self-harm and teen dating violence among youth in Hawaii. *Qualitative Health Research*, 25(5), 652–667.
- Bottorff, J. L., Johnson, J. L., Moffat, B. M., & Mulvogue, T. (2009). Relief-oriented use of marijuana by teens. *Substance Abuse, Treatment, Prevention, and Policy*, 4(7), 1–11.
- Breet, E., Goldstone, D., & Bantjes, J. (2018). Substance use and suicidal ideation and behaviour in low- and middle-income countries: a systematic review. *BMC Public Health*. 18(1), 549.
- Brent, D., Perper, J., Moritz, G., Baugher, M., Roth, C. ... Schweers, J. (2010). Stressful life events, psychopathology, and adolescent suicide: A case control study. *Suicide and Life-Threatening Behavior*, 23, 179–187.

- Brown, G. K., Beck, A. T., Steer, R. A., & Grisham, J. R. (2000). Risk factors for suicide in psychiatric outpatients: A 20-year prospective study. *Journal of Consulting and Clinical Psychology, 68*(3), 371–377
- Burrows, S., & Laflamme, L. (2010). Socioeconomic disparities and attempted suicide: state of knowledge and implications for research and prevention. *International journal of injury control and safety promotion, 17*(1), 23–40
- Carballo, J., Akamnonu, C., & Oquendo, M. (2008). Neurobiology of suicidal behavior. An integration of biological and clinical findings. *Archives of Suicide Research, 12*(2), 93–110.
- Chang, S. S., Stuckler, D., Yip, P., & Gunnell, D. (2013). Impact of 2008 global economic crisis on suicide: Time trend study in 54 countries. *British Medical Journal, 347*, f5239.
- Culbreth, R., Swahn, M., Ndeti, D., Ametewee, L. & Kasirye, R. (2018). Suicidal Ideation among youth living in the slums of Kampala, Uganda. *International Journal of Environmental Research and Public Health, 15*(2), 298.
- Dragisic, T., Dickov, A., Dickov, V., & Mijatovic, V. (2015). Drug Addiction as Risk for Suicide Attempts. *Mater Sociomed, 27*(3), 188–191.
- Dunlavy, A., Aquah, O., & Wilson, L. (2015). Suicidal ideation among school-attending adolescents in Dar es Salaam, Tanzania. *Tanzania Journal of Health Research, 17*(1), 1-10.
- Eskin, M., Sun, J., Abuidhail, J., Yoshimasu, K., Kujan, O., ... Voracek, M. (2016). Suicidal behavior and psychological distress in university students: A 12-nation study. *Arch Suicide Res, 20*(3), 369-388.
- Farabaugh, A., Bitran, S., Nyer, M., Holt, J., Pedrelli, P., ... Fava, M. (2012). Depression and suicidal ideation in college students. *Psychopathology. 45*(4), 228–234.
- Filinto, C., Stefanello, S., Fabrício M., Vaz Scavacini de F., & Botega, J. (2009). Factors associated with repeated suicide attempts: Preliminary results of the WHO multisite intervention study on suicidal behavior (SUPRE-MISS) from Campinas, Brazil. *Crisis, 30*(2), 73-78.
- Fine, G., Alison, H., Westhuizen, D., & Kruger, C. (2012). Predicting frequency of suicidal attempts of adolescent outpatients at Weskoppies Hospital using clinical and demographic characteristics. *South African Journal of Psychiatry, 18*(1), 22-26.
- Foa, B., Keane, M., & Friedman, M. (2000). Guidelines for treatment of PTSD. *Journal of Traumatic Stress 13*(4), 539-588.

- Forman, M., Berk, S., Henriques, R., Brown, K., & Beck, T. (2004). History of multiple suicide attempts as a behavioral marker of severe psychopathology. *American Journal of Psychiatry*, *161*, 437-443.
- Gallagher, R. (2015). *National survey of college counseling centers 2014*. The International Association of Counseling Services IACS [Online], Project Report 2015. Retrieved from http://dscholarship.pitt.edu/28178/1/survey_2014.pdf
- Huen, J. M., Ip, B. Y., Ho, S. M., & Yip, P. S. (2015). Hope and hopelessness: The role of hope in buffering the impact of hopelessness on suicidal ideation. *PLoS ONE*, *10*(6), e0130073.
- Isometsa E. (2014). Suicidal behaviour in mood disorders--who, when, and why? *Can J Psychiatry*. *59*(3), 120–130.
- Jang, S. I., Bae, H. C., Shin, J., Jang, S. Y., Hong, S., Han, K. T., & Park, E. C. (2016). The effect of suicide attempts on suicide ideation by family members in fast developed country, Korea. *Comprehensive Psychiatry*, *66*, 132-138.
- Jeglic, E. L., Sharp, I. R., Chapman, J. E., Brown, G. K., & Beck, A. T. (2005). History of family suicide behaviors and negative problem solving in multiple suicide attempters. *Archives of Suicide Research*, *9*(2), 135-146.
- Jeon, H., Park, J., Fava, M., Mischoulon, D., Sohn, J., ... Seong, S. (2014). Feelings of worthlessness, traumatic experience, and their comorbidity in relation to lifetime suicide attempt in community adults with major depressive disorder. *Journal of Affective Disorders*, *166*, 206-212.
- Karsberg, S. H., & Elklit, A., (2012). Victimization and PTSD in a rural Kenyan youth sample. *Clinical Practice & Epidemiology in Mental Health*, *8*, 91-101.
- Kaslow, N. J., Jacobs, C. H., Young, S. L., & Cook, S. (2006). *Suicidal behavior among Kenya*. UK. University of Birmingham.
- Khasakhala, I. L., Ndeti, D. M., & Mathai, M. (2013). Suicidal behavior among youths associated with psychopathology in both parents and youths attending outpatient psychiatric clinic in Kenya. *Annals of General Psychiatry*, *12*, 13.
- Khasakhala, L., Sorsdahl, K., Harder, V. & Williams, D. (2011). Lifetime mental disorders and suicidal behaviour in South Africa. *Afr J Psychiatry (Johannesbg)* *14*, 134-139.
- Klomek, A. B., Marrocco, F., Kleinman, M., Schonfeld, I. S., & Gould, M. S. (2007). Bullying, depression, and suicidality in adolescents. *J Am Acad Child Adolesc Psychiatry*. *46*, 40–49.

- Kokkevi, A., Rotsika, V., Arapaki, A., & Richardson, C. (2012). Adolescents' self-reported suicide attempts, self-harm thoughts and their correlates across 17 European countries. *J Child Psychol Psychiatry*. 53(4), 381–389.
- Liu, X., Chen, H., Liu, Z., Wang, Y. & Jia, X. (2019). Prevalence of suicidal behaviour and associated factors in a large sample of Chinese adolescents. *Epidemiol Psychiatr Sci*. 28(3), 280-289.
- Luo, F., Florence, C., Quispe-Agnoli, M., Ouyang, L., & Crosby, A. (2011). Impact of business cycles on US suicide rates, 1928–2007. *Am J Pub Health*. 101, 1139–46.
- Mewton, L., & Andrews, G. (2016). Cognitive behavioral therapy for suicidal behaviors: Improving patient outcomes. *Psychology Research and Behavior Management*, 9, 21-29.
- Miller, A., Esposito-Smythers, C., Weismoore, J., & Renshaw, K. (2013). The relation between child maltreatment and adolescent suicidal behavior: A systematic review and critical examination of the literature. *Clin Child Fam Psychol Rev*. 16(2), 146-172.
- Miranda, R., Scott, M., Hicks, R., Wilcox, H., Munfakh, J., & Shaffer, D. (2008). Suicide attempt characteristics, diagnoses, and future attempts: Comparing multiple attempters to single attempters and ideators. *Journal of American Academy of Child and Adolescent Psychiatry*, 47(1), 32-40.
- Mugambi, P., & Gitonga, C. (2015). Adolescent awareness of the psychosocial risk factors for depression in selected secondary schools in Nairobi-Kenya. *Journal of Educational and Social Research*, 5(3), 191-200.
- Ndegwa, S., Munene, A., & Oladipo, R. (2017). Factors influencing alcohol use among university students in a Kenyan University. *African Journal of Clinical Psychology*, 1(1), 135-153.
- Ndosi, K., Mbonde, P., & Lyamuya, L. (2004). Profile of Suicide in Dar es Salaam. *East African Medical Journal*. 81, 207–211.
- Offord, R., & Kraemer, C. (2000). Risk factors and prevention. *Evidence-Based Mental Health*, 3, 70-71.
- Omigbodun, O., Dogra, N., Esan, O., & Adedokun, B. (2008). Prevalence and correlates of suicidal behaviour among adolescents in Southwest Nigeria. *International Journal of Social Psychiatry* 54, 34–46.
- Ongeri, L., McCulloch, C., Neylan, T., Bukusi, E., Macfarlane, S., Othieno, C., ... Meffert, S. M. (2018). Suicidality and associated risk factors in outpatients

attending a general medical facility in rural Kenya. *Journal of Affective Disorders*, 225, 413–421.

- Onyango, P. & Tostensen, A. (2015). The situation of youth and children in Kibera. *CMI Report 2015*. CMI, Bergen.
- Osváth, P., Kelemen, G., Erdős, B., Vörös, V., & Fekete, S. (2003). The main factors of repetition: Review of some results of the Pecs Center in the WHO/EURO multicentre study on suicidal behaviour. *Crisis: The Journal of Crisis Intervention and Suicide Prevention*, 24(4), 151-154.
- Othieno, C., Okoth, O., Peltzer, K., Pengpi, S., & Malla, O. (2015). Traumatic experiences, posttraumatic stress symptoms, depression, and health-risk behavior in relation to injury among University of Nairobi students in Kenya. *The International Journal of Psychiatry in Medicine*, 50 (3), 299–316.
- Pedrelli, P., Nyer, M., Yeung, A., Zulauf, C. & Wilens T. (2015). College Students: Mental Health Problems and Treatment Considerations, *Acad Psychiatry*. 39(5), 503–511.
- Pereira dos Santos, J., Tavares, M., & Barros, P. (2016). More than just numbers: Suicide rates and the economic cycle in Portugal (1910–2013). *SSM - Population Health* 2, 14-23.
- Poorolajal, J., Rostami, M., Mahjub, H., & Esmailnasab, N. (2015). Completed suicide and associated risk factors: a six-year population based survey. *Arch Iran Med*. 18(1), 39–43.
- Qiu, T., Klonsky, D., & Klein, N. (2017). Hopelessness predicts suicide ideation but not attempts: A 10- year longitudinal study, *Suicide and Life-Threatening Behavior*, 47(6), 718-722.
- Randall, J. R., Doku, D., Wilson, M. L., & Peltzer, K. (2014). Suicidal behaviour and related risk factors among School-aged youth in the republic of Benin. *PLoS One*. 9(2):e88233.
- Rostila, M., Saarela, J., & Kawachi, I. (2013). Suicide following the death of a sibling: a nationwide follow-up study from Sweden. *BMJ Open* 3, e002618.
- Soloff, H., Lynch, G., & Kelly, M. (2002). Childhood abuse as a risk factor for suicidal behavior in borderline personality disorder. *J Personal Disord*, 16, 201–214
- Tosevski, D., Milovancevic, M., & Gajic, S. (2010). Personality and psychopathology of university students. *Curr Opin Psychiatry*, 23, 48–52.

- Tsang, M., Hui, K. & Law, M. (2012). Positive identity as a positive youth development construct: A conceptual review. *The Scientific World Journal*.
- Uwakwe, R., & Gureje, O. (2011). The relationship of comorbidity of mental and substance use disorders with suicidal behaviors in the Nigerian Survey of Mental Health and Wellbeing. *Soc Psychiatry Psychiatr Epidemiol.* 46(3), 173-180.
- Van Orden, A., Lynam, E., Hollar, D., & Joiner, T. (2006). Perceived Burdensomeness as an Indicator of Suicidal Symptoms. *Cognitive Therapy and Research*, 30, 457-467.
- Van Orden, A., Witte, K., Cukrowicz, C., Braithwaite, R., Selby, A., & Joiner, T. (2010). The interpersonal theory of suicide. *Psychological Review*, 117, 575–600.
- Wilcox, C., Arria, M., Caldeira, M., Vincent, K., Pinchevsky, M., & O’Grady, E., (2012). Longitudinal predictors of past-year non-suicidal self-injury and motives among college students. *Psychol. Med.* 42, 717–726.
- World Health Organization. [WHO] (2017). *Depression and other common mental disorders global health estimates*. Geneva: WHO Press.
- Zhai, H., Bai, B., Chen, L., Han, D., Wang, L. ... Yang, Y. (2015). Correlation between family environment and suicidal ideation in university students in China. *Int J Environ Res Public Health*, 12(2), 1412-1424.