Efficacy of Dialectical Behavior and Prolonged Exposure Therapy in Treating Suicidal Behavior among Adolescents with Posttraumatic Stress and Depressive Disorders in Nairobi, Kenya

by

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APPROVAL

EFFICACY OF DIALECTICAL BEHAVIOR AND PROLONGED EXPOSURE THERAPY IN TREATING SUICIDAL BEHAVIOR AMONG ADOLESCENTS WITH POSTTRAUMATIC STRESS AND DEPRESSIVE DISORDERS IN NAIROBI, KENYA

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DECLARATION

EFFICACY OF DIALECTICAL BEHAVIOR AND PROLONGED EXPOSURE THERAPY IN TREATING SUICIDAL BEHAVIOR AMONG ADOLESCENTS WITH POSTTRAUMATIC STRESS AND DEPRESSIVE DISORDERS IN NAIROBI, KENYA

I declare that this dissertation is my original work and has not been submitted to any other college or university for academic credit.

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LIST OF ABBREVIATIONS AND ACRONYMS

BDI-II  Beck Depression Inventory, Second edition
BPD  Borderline Personality Disorder
DBT  Dialectical Behavioral Therapy
DBT PE  Dialectical Behavioral Therapy and Prolonged Exposure
DD  Depressive Disorders
DU-ERB  Daystar University-Ethical Review Board
EPT  Emotional Processing Theory
MDD  Major Depressive Disorder
MoE  Ministry of Education
MoH  Ministry of Health
NACOSTI  National Commission for Science, Technology and Innovation
PCL-5  Posttraumatic Stress Disorder Checklist for Diagnostic and Statistical Manual of Mental Disorders, fifth Edition (DSM-5)
PCL-5  Posttraumatic Stress Disorder Checklist for Diagnostic and Statistical Manual of Mental Disorders, fifth Edition (DSM-5)
PE  Prolonged Exposure
PTSD  Posttraumatic Stress Disorder
SB  Suicidal Behavior
SBQ-R  Suicidal Behaviors Questionnaire-Revised
WHO  World Health Organization
ABSTRACT

Suicide is a leading cause of death among adolescents thus, necessitating effective interventional measures for those at risk. The effectiveness of DBT PE in the Kenyan population had not been ascertained before this study. This study sought to evaluate the efficacy of Dialectical Behavior Therapy and Prolonged Exposure (DBT PE) in treating Suicidal Behavior (SB) among adolescents with SB, Depressive Disorders (DD), and Posttraumatic Stress Disorders (PTSD) in Nairobi County. The study objectives were to establish the prevalence of SB, DD, and PTSD; determine the severity of SB; examine the risk factors for SB; assess the relationship between PTSD and DD; and evaluate the efficacy of DBT PE in treating SB. Both cognitive-behavioral and biosocial theories were used to inform the development and intervention for the disorders. The quasi-experimental design was used. Data was collected using a sociodemographic questionnaire, Suicide Behaviors Questionnaire-Revised, PTSD Checklist for DSM-5, and Beck's Depression Inventory. From the 1,040 students who were assessed at baseline, a study sample of 104 students was purposively selected. The experimental group received DBT PE treatment but the control group did not. Both groups were evaluated from baseline, midline to end-line. Data was keyed into statistical package for social sciences (SPSS) version 24 and analyzed. The study established SB prevalence (21.5%) and that of comorbid DD, PTSD and SB (15.0%). SB, DD, and PTSD had a significant moderate positive
correlation \( r = 0.48 \text{ to } 0.653, \ p < 0.001 \). The efficacy of DBT PE was established in treatment of SB, DD and PTSD. The study recommends early assessment of the disorders in schools and inclusion of DBT PE in life skills lessons and in the Kenya national suicide prevention plan for the treatment of adolescents and young adults.

DEDICATION

I dedicate this dissertation to my loving husband Mugambi Kimathi for being always there for me and offering all the needed support.
1.1 Introduction

The current study focused on the treatment of suicidal behavior (SB) among high school students. This first chapter presents the introduction and background of the study by delineating the meaning of suicidal behavior, its history, prevalence, risk factors, its comorbidity with posttraumatic stress (PTSD) and depressive disorders (DD), and its possible intervention. The problem statement is explained and the purpose of the study, the objectives, and the research questions are stated. Further, the chapter gives a justification of the study, its significance, assumptions, the scope and limitations as well as delimitations. The key terms have also been defined and operationalized.

Suicidal behavior is a major mental health problem that requires crisis intervention to save lives (Pae, 2010). Suicidal behavior refers to any action by a person that is likely to cause the person’s death. It includes suicidal ideation, planning suicide, attempting suicide, and actual suicide (McKinnon, Gariépy, Sentenac, & Elgar, 2016). Suicidal ideation, which in most cases is a precursor to suicidal planning and attempts entails contemplation of suicide as a solution to psychological distress, whereas, suicide is the act of taking one's own life intentionally (Jordan & McIntosh, 2011). Suicide is, therefore, one of the most devastating tragedies that can occur to a family hence, the demand for effective interventions.

Suicide is a phenomenon that beats human logic since it works against human survival instinct. From time immemorial, human beings have put intense effort towards enhancing their survival (Smith, 2011). On the contrary, SB entails developing strategies towards destroying one's own life. Due to the complexity of
suicidality, its multifactorial causality, and the fact that it affects diverse aspects of a person's life, it has elicited great multidisciplinary interest (Cristina-Laura, Papari, & Sava, 2017; Lee & Jung, 2006; Pandey, 2013).

Different fields of study such as anthropology, philosophy, religion, sociology, psychology, and medicine have provided crucial findings in their search for explanations as well as solutions to the problem of SB. Plato, the great philosopher, argued that although suicide is unacceptable, it is justifiable in some instances. Despite the few philosophical arguments in favor of suicide, most of religions have condemned suicide in all its aspects (Behere, Rao, & Mulmule, 2015).

Historically, religious institutions informed most of the legal laws, thus, any suicide attempt was a punishable illegal act (Sareen & Trivedi, 2009). However, with the increased understanding of suicide as a mental health problem, many nations have put efforts towards decriminalizing attempted suicide. Nevertheless, in Kenyan law, suicide attempt is still a criminal offense (Schlebusch & Burrows, 2009). Such laws view a suicidal person as criminal and thus aim at deterring SB through punitive methods to curtail the social menace. On the contrary, in sociology and psychology, a suicidal person is viewed as distressed and in need of psychosocial intervention to address the underlying issues (Levi-Belz, Gvion, & Apter, 2019; Lopez-Castroman & Calati, 2019).

The beginning of intensive study of suicide in the field of psychology is linked to Sigmund Freud (1856-1939), who was the first person to discover that psychotherapeutic intervention could be used in the treatment of mental illnesses (Schwartz, 2006). Freud influenced Aaron Beck, who later in his research came up with the concept of cognitive disturbances as the major target in psychotherapy (Beck, 1986). Psychotherapeutic intervention entails the treatment of mental disorders
through the use of psychological techniques designed to give insight into problems and encourage communication of conflicts (Linden, 2013). Psychotherapy is administered to bring relief to symptoms and changes in behavior, leading to improved psychosocial functioning as well as personality growth (American Psychological Association, 2013). Some psychotherapeutic interventions have shown promising results in the treatment of SB, thus proving that suicide is preventable (Méndez-Bustos et al., 2019).

Despite psychotherapeutic interventions being crucial in the treatment of psychological aspects underlying SB, Stolberg, Clark, and Bonger (2002) noted that half of all suicide victims had never sought psychotherapy. It is not clear whether the reluctance to seek psychotherapy was due to stigma, poor accessibility, legal measures, ignorance, or uncertainty regarding psychotherapy effectiveness. For greater insight on these aspects, the current study aimed at establishing the prevalence of SB, its severity, risk factors, and associated disorders, as well as evaluating the efficacy of psychotherapeutic intervention for SB in a Kenyan context.

1.2 Background to the Study

Suicide is a major cause of death, ranking second worldwide, on causes of death among adolescents and young adults aged 15 to 29 years old (World Health Organization [WHO], 2020). Suicidal behaviors among this diverse population have been documented globally, regionally, and locally (WHO, 2019). Globally, SB is much higher in adolescents and young adults, causing about 8.64% of deaths (Institute of Health Metrics and Evaluation [IHME], 2016). Researches in Canada noted that 8.1% of the adolescents had suicidal ideations and 4.1% had attempted suicide (Georgiades et al., 2019; Kokkevi, Rotsika, Arapaki, & Richardson, 2012). Similarly, a good number (10.5%) of adolescents were found to have attempted suicide in the
European countries. In China, surveys conducted in schools for adolescents aged 12 to 18 years reported a slightly higher (17.2%) prevalence of suicide attempts in a mean of 12-months (Liu, Huang, & Liu, 2018). This indicates that SB, which is a high-risk factor for suicidal death is a major concern in developed countries.

Although suicide cases occur in high-income countries, most (79%) of the suicidal deaths have been recorded in low- and middle-income countries (WHO, 2020). Despite a scarcity of studies on mental health in Africa, the few studies that have been done have indicated high rates of SB (Owen, Baig, Abbo, & Baheretibeb, 2016). In Africa, a higher prevalence of suicidal ideations (47.5%), and attempts (28.7%) were noted in Botswana among university students (Korb & Plattner, 2014).

A study by Palmier (2011) among adolescents in different sub-Saharan Africa nations found the prevalence of SB to be highest in Zambia (31.9%), followed by Kenya (27.9%), then Botswana (23.1%), Uganda (19.6%) ranked forth, followed by Tanzania (11.2 %). The ranking by Palmier indicates a high prevalence of suicidality in Kenya which was ranked second in sub-Saharan Africa. Among the rural adult population in Kenya, 24.1% had suicidal ideations and attempts (Jenkins et al., 2015). The study by Jenkins et al., however, did not specify the age of SB onset among the respondents.

The adolescent stage of development has been established as the critical age for SB onset (Nock et al., 2008). Adolescents and young adults aged 15 to 24 years old, who are mostly in high schools and universities tend to be affected by SB more than the general population (Schwartz, 2006). The adolescence stage of development, which marks a transition phase between childhood and adulthood, is characterized by great biopsychosocial transformations (Curtis, 2015), which may trigger distress leading to SB. Despite this, using the developmental approach, the National Research
Council and Institute of Medicine (NRCIM, 2009) established the adolescence stage as the best developmental age for the prevention of psychological problems. According to the NRCIM, interventions offered at the adolescence stage of development are likely to yield maximum benefit for successful early prevention. This study, therefore, focused on adolescents and youth aged between 14 to 22 years.

The study specifically targeted high-school students in the low socioeconomic, informal settlements area. A wide range of studies has associated low socioeconomic factors such as insecurity, lack of basic amenities, and poor living circumstances with mental disorders and SB (Atwoli, Stein, Koenen, & McLaughlin, 2015; Bantjes et al., 2018; Iemmi et al., 2016; McDaid & Kennelly, 2009; Turner, Shattuck, Hamby, & Finkelhor, 2013). This implies that adolescents with a poor socioeconomic background are at a higher risk of mental disorders leading to SB.

Mental disorders are highly associated with SB, contributing to 90% of the suicidal cases, with the majority of suicidal persons suffering from DD (Mann, 2003; Oquendo, Baca-Garcia, Mann, & Giner, 2008). According to the American Psychiatric Association (2013), the major symptoms of DD are a depressed and irritable mood, anhedonia, insomnia or hypersomnia, loss of energy, significant changes in appetite and weight, feelings of hopelessness, and worthlessness, diminished concentration and SB (American Psychiatric Association, 2013). SB may arise from despair when the severity of depressive symptoms reduces one's ability to function normally.

While SB has been prevalent in patients with DD and those with Posttraumatic Stress Disorder (PTSD) independently, higher risk has been reported among patients with PTSD comorbid with DD (Jakšić, Margettić, & Marčinko, 2017). Higher incidences of completed suicide have also been noted among patients with DD
as well as PTSD (Gradus et al., 2010). The stress associated with trauma may trigger feelings of helplessness, hopelessness, and powerlessness that characterize DD (American Psychiatric Association, 2013). These feelings are associated with a sense of despair and thus the risk of SB.

Despite the high prevalence of SB aforementioned, its adverse effects, and its association with mental disorders, there is a general agreement that suicide is preventable through early identification and use of effective evidence-based interventions (Wanyoike, 2015; WHO, 2019). In their efforts towards reducing suicide mortality rates, WHO (2014) recommended the inclusion of an evidence-based suicide prevention strategy at a national level. In Kenya, a national suicide prevention plan which recommends early screening, access to mental health treatment, and psychosocial care for persons with SB was adopted (Ministry of Health [MoH], 2014, 2015). The national suicide prevention plan however does not recommend a specific psychotherapeutic intervention targeting suicidality as an independent aspect.

Studies have shown that treating mental disorders only does not necessarily reduce SB; instead, psychotherapeutic interventions focused on suicidal cognitions, emotions, and behaviors as distinct dysfunctional individual factors instead of mental illness symptoms, have been found to yield greater patient outcomes (Mewton & Andrews, 2016; Tarrier, Taylor, & Gooding, 2008). The DBT which targets these aspects in treating SB, is an empirically-supported, next-generation cognitive-behavioral psychotherapeutic approach. DBT was developed in the 1970s by Linehan Marsha (Linehan, 1993a). It incorporates cognitive-behavioral strategies that target high-risk behaviors among persons who are suicidal (Linehan, 1993a), thus facilitates
such persons with skills to develop a satisfying and meaningful life so that suicide is not considered a good alternative to living.

Since SB tends to be comorbid with DD and PTSD, DBT is likely to be the first intervention of choice for a therapist dealing with a suicidal client presenting with PTSD (Harned, Tkachuck, & Youngberg, 2013). After the client has stabilized, there is a need for the therapist to focus on the treatment of PTSD symptoms. Prolonged Exposure (PE) is a psychotherapeutic treatment that has been highly effective in the treatment of PTSD (Grubaugh et al., 2016; Harned, Korslund, Foa, & Linehan, 2012). The efficacy of PE as a treatment for PTSD and DBT as a treatment for SB was established in both adolescents and adults by several studies (Grubaugh et al., 2017; Harned et al., 2008; McCauley et al., 2018; McMain, Korman, & Dimeff, 2001; Powers, Halpern, Ferenschak, Gillihan, & Foa, 2010; Wilkinson, 2018; Woodberry & Popenoe, 2008).

Noting the need for an intervention targeted at suicidal PTSD patients, Harned and Linehan (2008) tested a combination of DBT and PE and it proved to be efficacious. Other studies have ascertained that DBT PE protocol is more efficacious than DBT alone in the treatment of trauma-related difficulties comorbid SB in the high-risk PTSD clients with multiple problems (Harned & Linehan, 2008; Harned, Korslund, & Linehan, 2014; Scheiderer, Carlile, Aosved, & Barlow, 2017). The researcher did not find a study in Africa that assessed the effectiveness of the combined DBT and PE therapy. This study, therefore, sought to assess the efficacy of DBT PE in the treatment of SB, DD, and PTSD among high school students from a low socioeconomic background in Kenya.

1.3 Statement of the Problem
Suicidal behavior is a critical mental health problem due to the likelihood of death by suicide. Increasingly high suicide rates have been noted both globally and locally. Globally, there are approximately 800,000 suicidal deaths per year, implying that every 40 seconds one person dies of suicide (WHO, 2020). Cases of SB are much higher as WHO (2020) speculates that for each suicide there are 20 attempts. In Kenya, the number of suicide cases reported rose by 58 percent between 2008 and 2017 to reach 421 (WHO, 2018). The problem of suicidality is therefore a major concern globally and locally.

Cases of suicidal death are heart-breaking and carry adverse effects to the family and society at large. To the close family members and other associated persons, suicide leads to complex grief, feelings of shame, guilt, anger, confusion, rejection, and stigma (Young et al, 2012). Due to their devastating effect on society suicidal cases tend to receive media attention. In Kenya, 12 high school students were reported to have committed suicide in the year 2018 and the numbers could be higher (Chepkoech, Ngozi, & Kagwe, 2019). In their report, Chepkoech et al. (2019) attributed the increasing rate of suicides among Kenyan youths to a lack of life skills, stating that when faced with realities of life they tend to perceive suicide as an easy way out. Therefore although suicide is a tragedy that affects family wellness and a nation’s productivity, with a proper understanding of the risk factors and equipping vulnerable persons with relevant psychosocial skills it can be alleviated.

There is a notable deficiency of studies testing psychosocial interventions and estimating the prevalence of psychiatric disorders in Africa (Owen et al., 2016). The few studies on mental disorders in Kenya have recommended a search for viable suicide prevention strategies (Kabuge, 2019; Khasakhala, Ndetei, & Mathai, 2013; Ndetei, Khasakhala, Mutiso & Mbwayo, 2010; Wanyoike, 2015). This intervention-
oriented study responds to suicide prevention efforts by seeking to establish SB prevalence, risk factors, SB association with DD and PTSD, and effective psychotherapeutic intervention.

Considering that SB can be alleviated through early detection and effective interventions, there is a need for empirically tested psychotherapeutic interventions to be availed to the highest at-risk population. Such. Psychotherapeutic interventions targeting dysfunctional cognitive, emotional, and behavioral aspects of suicidality, have proven to be the most effective in preventing suicidality (Harned et al., 2012; Mewton & Andrews, 2016; Tarrier et al., 2008). However, such treatments have not been included in the Kenya suicide prevention plan (MoH, 2014).

Dialectical behavior therapy, which targets the maladaptive cognitive, emotional and behavioral aspects of SB, when combined with PE, which is a treatment for PTSD, has proved to be the most efficacious treatment for SB associated with PTSD (Harned & Linehan, 2008; Harned et al., 2012; Harned et al., 2014; Scheiderer et al., 2017). Despite that, the researcher did not find literature in Kenya recommending DBT PE therapy for SB. This study, therefore, sought to investigate the effectiveness of DBT PE therapy as a treatment for SB and its comorbidity PTSD and DD among adolescents from a low socioeconomic background in Nairobi, Kenya.

1.4 Purpose of the Study

The purpose of the study was to establish the efficacy of DBT PE in the treatment of SB among adolescents presenting with PTSD and DD in informal settlement areas of Nairobi County, Kenya.

1.5 Objectives of the Study
1.5.1 Broad objective

The study sought to evaluate the efficacy of DBT PE in reducing SB among high school students presenting with PTSD and DD in informal settlements of Nairobi County.

1.5.2 Specific objectives

Objectives of this study were to;

1. Determine the prevalence of SB, PTSD, and DD among adolescents in informal settlements of Nairobi County.
2. Establish the severity of SB among adolescents presenting with SB, PTSD, and DD in informal settlements of Nairobi County.
3. Examine the risk factors for SB among adolescents in informal settlements of Nairobi County.
4. Assess the relationship between SB, PTSD, and DD among suicidal adolescents in informal settlements of Nairobi County.
5. Evaluate the efficacy of DBT PE in reducing SB and its comorbid disorders PTSD and DD among the suicidal adolescents in informal settlements of Nairobi County.

1.6 Research Questions

The Research Questions for the study were;

1. What is the prevalence of SB, DD, and PTSD among adolescents in the informal settlements of Nairobi County?
2. How severe is SB, among adolescents with SB, PTSD, and DD in the informal settlements of Nairobi County?

3. What are the risk factors for SB among adolescents in informal settlements of Nairobi County?

4. How is the relationship between SB, PTSD, and DD among adolescents in informal settlements of Nairobi County?

5. To what extent is DBT PE efficacious in reducing SB and its comorbid disorders DD and PTSD among the suicidal adolescents in informal settlements of Nairobi County?

1.7 Justification for the Study

Many people with SB hardly seek help due to lack of insight and the stigma associated with it (Mérelle et al., 2018). In their effort to create awareness and reduce SB, WHO recommended that countries include empirically tested suicide prevention strategies among their health priority (WHO, 2014). This study tested the efficacy of the psychotherapeutic intervention, DBT PE, in reducing SB, DD, and PTSD. The study provides evidence for the effectiveness of DBT PE in managing suicidal adolescents and youths who have been exposed to trauma and are presenting with symptoms of PTSD and DD. Since it was found to be effective, DBT PE is recommended as a suicide prevention approach. Dialectical behavior therapy with prolonged exposure is therefore an essential strategy for life enhancement and reduction of suicide mortality rate. This is in line with the goals of WHO (2019) and the ministry of health in Kenya to reduce the increasingly high mortality rates associated with suicide.

This study fills the knowledge gap on the non-pharmacological treatments for SB among the youth in the developing world population. It provides contextualized
research on empirically established psychotherapeutic measures for managing SB in developing countries. The study, therefore, forms the basis on which to authenticate adoption of DBT PE in the treatment of suicidal adolescents and youths in a Kenyan population and mostly those who are from a low socioeconomic background.

1.8 Significance of the Study

The current study found DBT PE to be an effective strategy in the reduction of SB. It is therefore recommended to the Ministry of health (MoH), hoping that it could be incorporated in the national suicide prevention plan to be used by clinical psychologists in clinics, health centers, and the mental health hospitals. Equipping health practitioners and psychotherapists with DBT PE skills would be of great importance in the management of psychologically disturbed and mentally ill patients who present with SB.

Availing the information to parents, teachers, counselors, and pastors living with or working with adolescents and youths in different capacities will create awareness and thus, reduce the stigma associated with suicidality. Increased awareness of SB as a mental health problem will encourage distressed adolescents to seek help. The information on SB will enhance systemic support in the families, schools, churches, and peers among other societal groupings. These support systems will assist the traumatized and distressed youths to find a life worth living. They will be sensitized to the risk factors for SB as well as the comorbid mental illnesses, which is a crucial step towards early identification and intervention.
The information from this study will be availed to the Ministry of Education (MoE), as the institution in charge of policymaking in learning institutions. It is recommended that the MoE considers incorporating selected DBT PE skills in their life skills curriculum as a strategy for preventing SB in students. In line with this, the information will be availed to psychotherapists and school counselors. Equipping psychologists and school counselors with the necessary skills to facilitate DBT PE sessions is imperative in promoting healthy behavior. This will in essence increase academic excellence and productivity among the distressed and traumatized students.

Implementation of the recommended DBT PE skills training among adolescents will equip them with skills for emotional regulation, interpersonal effectiveness, and distress tolerance. This will empower the distressed students who have gone through trauma and have PTSD and DD with insight and skills on how to effectively manage their painful experiences. These life-skills are therefore essential towards healthy ways of coping with distress among traumatized adolescents who are highly vulnerable to SB due to skills deficiency. This will reduce the likelihood of causing harm to themselves, their parents, peers, teachers, and society in general. It will also boost some sense of security on parents in knowing that their children who have gone through trauma and are suicidal can be helped.

The study also adds to the pool of knowledge, thus informing other researchers and policymakers on SB prevalence, risk factors, and its relation with DD and PTSD. It also adds to the scarce knowledge on the efficacy of DBT PE intervention on SB, DD, and PTSD in Kenya and Africa in general. It is therefore crucial in the advancement of research on SB and suicide prevention in Africa. Additionally, the recommendations proposed for further research are likely to be a
source of reference on viable research areas for other scholarly work in this field of study.

1.9 Assumptions of the Study

The study assumptions encompass those aspects which though very relevant in the study were out of the researcher’s control (Simon, 2011). The following were the assumptions for the study;

1. There were cases of students presenting with SB, PTSD, and DD in the high schools of Nairobi County.

2. The school counselors from the selected high schools were not using DBT PE in managing SB among the traumatized and depressed students.

3. In as far as the researcher was concerned, there was no study in Kenya that had been done in high schools assessing the efficacy of DBT PE protocol among the suicidal students presenting with PTSD and DD. Therefore, there was no information to ascertain its efficacy in Kenya.

4. Despite the study topic being sensitive, the respondents were willing to give honest responses to questions asked since they were assured of anonymity and confidentiality for their responses.

5. The administration in selected schools permitted carrying out of the research and gave the needed support by availing students for the intensive study.

1.10 Scope of the Study

Suicidal behavior is a complex aspect that cuts across diverse populations including people of different socioeconomic statuses, cultures, and ages. According to WHO (2019), a higher prevalence of suicidality has been recorded in the developing countries and is at its highest among adolescents and youths aged 15 to 29 years old.
This study, therefore, targeted the adolescents and youths in Kenya as a representative of developing countries. Kenya was rated second on the prevalence of SB among the youths in Africa (Palmier, 2011). Though the study recognizes the need for comparative studies in the various developing countries and age groups, it was beyond the scope of this study. Therefore, the study focused on Kenyan high school students aged 14 to 22 years.

The high schools provide the best place to find a concentration of adolescents and youths aged 14 to 22 years old, an age group that is the most affected by suicidality (Ojuade, Munene, & Mbutu, 2018b; Othieno, Okoth, Peltzer, Pengpi, & Malla, 2015). Most of the studies on suicidality have focused on patients in clinical settings despite the high cases of suicidality on students who have not sought help in clinics or counseling centers (Karsberg & Elklit, 2012; Palmier, 2011; Stolberg et al., 2002). The study, therefore, targeted students in a non-clinical setting. The high school students in the informal settlements of Nairobi County were the target population for the study.

Nairobi County offers a cosmopolitan population with diverse cultural backgrounds since Nairobi is the capital city of Kenya. Two public high schools and two private high schools were selected to provide respondents with varied academic backgrounds. The multicultural diversity of students in Nairobi County schools is likely to present varied expressions of SB, and a wide range of risk factors leading to diverse responses to the intervention. Given this, their response to DBT PE can be generalized to other adolescents from a low socioeconomic background in the Kenyan population.

Unlike people with DD or PTSD alone, persons with comorbid DD and PTSD are in great psychological distress and at a very high risk of engaging in SB
(Khasakhala, Ndetei, & Mathai, 2013; Ndetei et al., 2010; Ruby & Sher, 2013). Thus, the participants in this study were those students who met the criteria for SB, PTSD, and DD. The study participants were screened with standardized tools. Those who met the criteria for the three disorders formed the basis for determining the effectiveness of DBT PE in reducing SB and its comorbid PTSD and DD. Although DD by definition represents a wide range of disorders categorized according to their duration and presumed etiology (American Psychiatric Association, 2013), the focus of the study was on the common symptoms of a depressed mood that leads to SB. Suicidal persons are in critical need of efficacious interventions due to the threat of losing their lives, hence, the focus of the study on testing the effectiveness of DBT PE on this vulnerable population.

1.11 Limitations and Delimitations of the Study

The current study focused on DBT PE as a therapeutic intervention for managing suicidal high school students with PTSD and DD. It aimed at facilitating behavior change among this category of respondents. The concepts underlying behavior change encompass attitudes, emotions, temperaments, and individuals as well as society's perspectives and therefore it is hard to measure the level of objectivity on the participants. The participants were however assured of confidentiality and anonymity so that they could feel safer giving sensitive personal information. Standardized tests for assessing SB, PTSD, and DD were used to ensure validity and reliability.

Obtaining permission to research in the targeted schools is not obvious due to the sensitivity of the research topic. The researcher, therefore, obtained ethical
clearance from the institution of study in Daystar university ethical review board (DU-ERB) and a research permit from the National Commission of Science, Technology, and Innovations (NACOSTI), and the MoE in Nairobi County. The targeted high schools were assured of confidentiality and anonymity in publishing the data.

Due to the strict schedules and academic priorities by the schools’ administration and participants, the researcher worked with the school counselors and sensitized students on the benefits of the study. The researcher also involved the participants in selecting their convenient time, thus the majority of group therapy sessions were offered during the weekends and school holiday period to avoid uncalled-for interruptions in their studies. For maximum benefit, the researcher hired a professional clinical psychologist who was trained in the DBT PE skills to effectively assist in the therapy sessions.

1.12 Definition of Terms

The following definitions of terms have been adopted in this study.

Adolescent

The term adolescent has been used in this study to refer to persons in the developmental stage between childhood and adulthood (Curtis, 2015). According to WHO (2018), adolescents fall in the 10 to 24 years age group. Considering the diverse age definitions and categorization of adolescents and youths, the current study focused on adolescents who are high school students aged 14 to 22 years old. These
are therefore referred to as adolescents since they are in the developmental stage between childhood and adulthood.

Depressive disorders (DD)

According to the National Institute of Mental Health (NIMH), depressive disorders are a form of mood disorders that present with a depressed mood (NIMH, 2018). In the current study, DD refers to the disorders that present with a depressed mood whose common features include sadness, emptiness, irritable mood, somatic problems, and cognitive disturbances that significantly affect a person's capacity to function and are associated with SB (American Psychiatric Association, 2013).

Dialectical behavior therapy and prolonged exposure (DBT PE)

Dialectical behavior therapy and prolonged exposure is defined in the current study as a comprehensive treatment approach that combines DBT and PE techniques in the management of SB among PTSD patients. This definition by Harned (2017) is adopted thus, referring to DBT PE as a psychotherapeutic intervention that integrates varied life skills from both DBT and PE in the treatment of suicidal patients, to facilitate recovery from trauma and build a life that would be experienced as worth living.

Mental disorders

The terms mental disorders, psychiatric disorders, or mental illness are used interchangeably in this study. These terms refer to the presence of clinically significant co-occurring psychological symptoms related to a distressing or incapacitating present situation in an individual (American Psychiatric Association, 2000). The current study defines mental disorders as psychological, biological, or
behavioral dysfunctions in the individuals that are likely to pose a threat to a person’s health, life, abilities, freedom, or life.

Posttraumatic stress disorder (PTSD)

PTSD is defined as a mental disorder that emanates from experiencing a painful, terrifying and overwhelming traumatic event, which involves a significant threat to the physical, emotional, or psychological safety (Cohen, 2000). According to the American Psychiatric Association (2013), PTSD is characterized by persistent, involuntary, and intrusive memories of the distressing occurrences, evasion of trauma reminders, negative emotions, cognitions, and numbing associated with the trauma, varied reactivity, and heightened sensitivity to prospective threat. These definitions were adopted in the current study, so PTSD emanates from trauma experience and has devastating symptoms.

Prevalence of the disorders

Prevalence is defined as a statistical concept that indicates the proportion of a population with a specific characteristic in a given time. It aims at establishing how common the disorder is in a population (NIMH, 2018). In this study, the prevalence of SB, DD, and PTSD shows how common these disorders are in a given study population. This is indicated by the percentage proportion of respondents with the disorders in comparison to those without the disorders in a particular population.

Prolonged exposure (PE)

Prolonged exposure is defined as an exposure therapy that combines imaginal and invivo exposure techniques in helping a PTSD client to progressively and repetitively confront trauma memory as well as the related cues to overcome them (Cahill, Rothbaum, Resick, & Follette, 2009; Foa & McLean, 2016; Hembree & Foa, 2012).
The current study adopted this definition of PE as a treatment for PTSD through relaxation, imaginal, and invivo exposure techniques.

**Psychotherapy**

This study adopted the definitions by Linden (2013) and the American Psychological Association (2013), which defines psychotherapy as the application of psychological techniques in treating emotional and mental disorders to encourage communication of conflicts and provide insight into the identified problems hence, improved functioning.

**Risk factors**

According to WHO (2018), risk factors are the features, conditions, or characteristics that increase susceptibility for developing some disorders in some particular persons compared to other people in a population. This definition was adopted in this study.

**Severity of mental disorders**

Severity of mental disorders in the American Psychiatric Association (2013), is defined in different ways; according to the rating scales of symptom scores or as per the level of impairments in functioning (Zimmerman, Morgan, & Stanton, 2018). The current study defines the severity of SB according to the symptom rating scale indicated by a continuum from suicidal ideation at the lower level, followed by suicidal plans, then suicide attempts, and suicide at the most severe level. The severity of DD is indicated by the level of impairment from mild, borderline, moderate, severe, and finally extreme.

**Suicidal behavior (SB)**
The term suicidal behavior, also referred to as suicidality in this study, refers to any action by a person, which is likely to cause their death (McKinnon et al., 2016). It includes suicidal attempts, plans, ideations, and actual suicide. According to Bongar and Stolberg (2009), suicidal ideation is an obsession with thoughts of ending one’s own life. Suicide attempts are self-injurious behaviors performed with the intention to die and suicide refers to the act of killing oneself or taking of one’s own life deliberately (Lewinsohn, Rhode, & Seeley, 1994; Jordan & McIntosh, 2011).

Youth

The term youth refers to persons in the phase of development between childhood and adulthood but is defined in a broader way than adolescence (Gasior, 2014). Youths as persons aged 15 to 24 years old according to the United Nations (2019). Considering the diverse definitions and categorization, this study referred to persons in their late adolescence and early adulthood in the age ranges of 17 to 22 as youths or older adolescents.

1.13 Summary

This chapter has introduced the study by providing its background, the problem statement, purpose, objectives, and its significance. The chapter has indicated that SB is rampant among adolescents and the youth hence, it is of global and national concern. It has given a background of the key study aspects showing that psychological distress among adolescents and youths leads to DD and PTSD which
pose a high risk to SB. The chapter has also introduced DBT PE as an empirically tested intervention for equipping the high-risk population with relevant skills for coping with distress and regulating emotions to reduce SB. The chapter has further explained the problem statement as a deficiency of information on effective SB psychotherapeutic interventions in Kenya, thus the need to contextually assess the efficacy of DBT PE. The assumptions, scope, limitations, and delimitations have also been discussed. In the next chapter, the relevant literature on the study variables is reviewed, and the theoretical and conceptual framework is discussed.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter focuses on a review of literature related to suicidal behavior (SB) among high school students with SB, DD, and PTSD. The theoretical foundations that underpin the topic of study have been assessed based on suicidality, DD, and PTSD,
the progression of theories, and their proposed therapies. Relevant global, regional, and local literature have been evaluated and synthesized as per the study objectives. The prevalence of SB, its severity, predictors, and the risk factors have been discussed as well as the relationship between PTSD, DD, and SB among adolescents. The efficacy of DBT PE from scholarly publications with empirical evidence has also been examined. At the end of the chapter, the conceptual framework is presented and discussed showing the interaction of study variables.

2.2 Theoretical Framework

A theoretical framework is necessary for explaining the study phenomenon since it gives an introduction and a description of the theory behind the study concepts (Gabriel, 2013). In this study, a theoretical framework is used to direct the research by showing how the study variables influence each other. It holds the theory underpinning the research study thus linking the current study with the existing knowledge and providing some constructs that guide the study (Mugenda & Mugenda, 2012). The theoretical framework was therefore crucial in providing a basis and clear direction in the area of study. The theories used are of great importance to the study since, they explicate the major study variables- SB, DD, PTSD, and DBT PE, indicating their development and relationships (Nestor & Schutt, 2015).

This study is anchored on cognitive-behavioral theory by Aaron Beck and biosocial theory by Marsha Linehan (Beck, 1967; Linehan, 1993a). Beck's cognitive theory has been used to conceptualize the development of SB, DD, and PTSD; whereas, biosocial theory, which is the basis for DBT was used to explain the development and interventional necessities for SB. The cognitive-behavioral theory by Aaron Beck was deemed relevant in this study since it explains the role of cognition in the development of PTSD, DD, and consequently SB. The biosocial
theory is also of paramount importance in the study since it elucidates the biopsychosocial aspects of SB. By explaining the biological, emotional, intrapersonal, and interpersonal facets of SB, it provides a holistic outlook to the problem of suicidality. It also sheds light on the basic concepts of the DBT treatment model.

2.2.1 Cognitive-behavioral theory

Cognitive-behavioral theory is a psychological approach that seeks to explain human behavior by understanding the role of cognition. According to cognitive-behavioral theorists, cognition which refers to how people make analyses, judgments, and interpretations of their life experiences, plays a great role in influencing the behavior of human beings (Fishman, Rego, & Müller, 2011). The cognitive-behavioral theory combines behavioral and cognitive perspectives while explaining human behavior. It supplements the conditioning models of the behaviorists by considering the role of awareness, attribution, attention, expectancy, and linguistics in learning, which is fundamental in influencing human behavior (Corey, 2013).

Therefore, the cognitive-behavioral theory holds the view that conditioning in human beings is not automatic and direct; rather, it is influenced by an individual's cognitive and verbal abilities.

The cognitive-behavioral theory has its basis on the works of Aaron Beck and Albert Ellis in the 1960s. Beck and Ellis observed that people react behaviorally and emotionally according to how they interpret situations. They argued that people's thoughts lead to their emotions and subsequent behavior (Beck & Weishaar, 2011).

The cognitive aspect was added into the behavioral theories following discoveries on the role of cognition in human behavior as contrasted to the behavior of animals (Benjamin et al., 2011). The discovery of the role of cognition broke the predominant way of experimentation through analyzing behavior in the laboratories using animals.
(Hofmann, 2011). Hence, although the cognitive-behavioral theorists agreed with the behaviorists' way of conditioning behavior, they sought to enhance behavior by understanding the role of cognition in human behavior.

The current study is focused on cognitive-behavioral theory by Aaron Beck. The theory stipulates that various errors in cognition lead to impulsive behavior. This sheds light on the aspect of SB resulting from errors in a depressed persons' cognition. According to Beck (2011), a person's emotional, behavioral, and physiological responses influence their thoughts and beliefs thus playing a crucial role in the development of DD symptoms and their maintenance. In cognitive-behavioral theory, therefore, the cognitive processes determine how one feels and acts in response to various life events. A person's cognitive processes influence the meanings, judgments, appraisals, and the assumptions they make in life. These may consequently hinder or facilitate the process of adaptation (Wenzel & Beck, 2008). Cognition is therefore viewed as the major influence of mental processes and the subsequent behavior.

Cognitive-behavioral theory holds the view that psychological distress emanates from faulty unrealistic thoughts which are referred to as 'automatic thoughts'. These thoughts are described as 'automatic' since they occur spontaneously without cognitive effort. An individual may not be aware of them and is neither cognizant of the interpretive process nor their effect emotionally (Beck, Rush, Shaw, & Emery, 1979). According to Beck, these are the thoughts that occur mostly in depressed patients. When depressed patients reflect on automatic thoughts over time, they tend to treat them as valid (Beck, 1996). The automatic thoughts tend to be spontaneously unpremeditated interpretations of some present life occurrences and they influence one's immediate interpretation of any given situation (Beck et al., 1979). In depressed patients, the automatic thoughts reflect the negative themes in
their thought processes, which form the perception of their past, present, and future (Beck, 2005). They are therefore likely to have a pessimistic view of life.

According to Rosenfield (2004), the automatic thoughts of patients with psychological disorders are often distorted, extreme, or otherwise inaccurate. Beck (2011) concurred that the negative automatic thoughts indicate distorted cognitions that a person has in a particular situation. They tend to take the form of exaggerations and irrational or ineffective opinions which indicate errors in information processing. The negative automatic thoughts in depressed persons carry with them a lot of cognitive distortions. Some examples of cognitive distortions that characterize the thought patterns of the persons with DD are; a tendency to view things, people, and life experiences in the extremes, overgeneralize, focus on the negatives; and make negative conclusions, negative predictions, exaggerations, minimization, personalization and selective abstraction (DeRubeis, Tang, & Beck, 2001). These are likely to lead to suicidal ideations when the distortions reflect an extremist conclusion that things cannot get better which implies a sense of despair in life.

According to Beck (2005), automatic thoughts emanate from one's negative core beliefs and these are reflected in dysfunctional automatic thoughts, which are associated with DD. Core beliefs refer to the central and rigid beliefs that people have formed over time. They begin in early childhood and develop throughout life. These core beliefs influence a person’s view of himself or herself, other people, their world, and the future. Although they are formed at an early age, they become activated in certain distressing situations. Therefore, an individual's interpersonal and general life experiences concerning their significant others can lead to either adaptive or maladaptive core beliefs. These maladaptive core beliefs tend to be inclined towards negative emotions such as feeling worthless, helpless, and unloved (Beck, 2005).
These tend to be common among suicidal persons, the persistent maladaptive core beliefs affect one's mood and overall mental health leading to SB. Therefore in the treatment of DD focusing on restructuring core belief is imperative because one's perception of self and their world is engraved in their core beliefs.

In explaining DD and SB, some more recent studies on cognitive-behavioral theory have looked at other problematic cognitive aspects such as errors in logic and maladaptive intermediate beliefs (Beck, 2011). The maladaptive intermediate beliefs are cognitive compensatory strategies developed by a person in their effort towards deactivating maladaptive core beliefs. This is aimed at reducing emotional distress emanating from the awareness of the maladaptive core beliefs (Mathews, 2013). According to Beck (2011), maladaptive intermediate beliefs entail the assumptions or guidelines that influence interactions with an individual's general and social environment. The negative forms tend to appear more during stressful experiences and are likely to lead one into negative automatic thoughts and self-defeating behaviors (Beck, 2011). Thus, in stressful times, the depressed person may engage in risky behaviors as he or she tries to cope.

According to cognitive-behavioral theory, a person's mood and behaviors are greatly influenced by their current thoughts (Wenzel & Beck, 2008). Depressed persons have difficulty sustaining positive emotions because they hardly retrieve memories of past successes and other positive life experiences (Carl, Soskin, Kerns, & Barlow, 2013). The problematic behavior such as SB, therefore, results from a combination of core beliefs, thoughts, and consequent mood as illustrated in Figure 2.1.
Figure 2.1: A Cognitive-Behavioral Theory Theoretical Framework
Source: Matthews (2013)

Figure 2.1 is a cognitive-theory theoretical framework demonstrating how a person's early experiences which could be positive, negative, or traumatic leads to an individual's core beliefs. The core beliefs shape intermediate beliefs. A person's intermediate beliefs, errors in logic, and life situations shape their automatic thoughts.
Consequently, the automatic thoughts influence a person's mood, physiological responses, and behavior (Corey, 2013). Depressive disorders and the resulting SB are therefore primarily thought disorders since the process of depression results from distorted thoughts that lead to negative mood and problematic behaviors (Beck, 2011).

Negative early experiences or traumatic experiences may interact with all these aspects resulting in negative automatic thoughts and dysfunctional behavior. For example, dysfunctional automatic thoughts in a traumatic event are likely to lead one into negative emotions such as sadness, hyper-vigilant, physiological reactions, and avoidant behavior that characterize PTSD (Beck, 1967). Therefore, a person's thought system which is influenced by their core beliefs influences their mood, physiological reactions, and consequent behavior. This indicates that early traumatic experiences may lead to negative core beliefs and intermediate beliefs that reflect PTSD. Hence the cognitive-behavioral theory model also explains the development of PTSD.

Although originally developed to conceptualize depression, the cognitive-behavioral theory concepts were later applied to other disorders (Beck, 1967). Focusing on how the cognitive-behavioral theory explains PTSD and SB, it is important to emphasize that a person's life experiences from childhood, as well as positive and negative critical incidents, influence their core belief systems. People who develop PTSD, have undergone traumatic experiences which led to the formation of maladaptive core beliefs (Kellogg & Young, 2006). When the maladaptive core beliefs from traumatic experiences lead to irrational intermediate beliefs, errors in logic, and negative perceptions of one's environment, the consequent compensatory behavior, mood, and physiological reactions are likely to reflect the symptoms of PTSD.
Additionally, cognitive-behavioral theory attributes the negative schema to the development of PTSD. A schema refers to a structural unit where information that influences one's interpretation of a new experience is stored (DiMaggio, 1997). The core beliefs tend to be organized into an individual's cognitive schemas. The cognitive schemas form the templates for comparing and incorporating any newly acquired information. Beck found out that the schemas of people with mental disturbances tend to put precedence to biased information processing.

According to Young, Weiberger, and Beck (2001), the negative schemas that usually result from early negative interactions with significant others tend to continue from childhood to adolescence and eventually into adulthood. The strong negative emotions elicited by traumatic events usually activate the maladaptive schemas leading to many psychological disorders (Young, Rygh, Weinberger, & Beck, 2008). During stressful times, the schema that had been established during childhood tends to be reactivated thus, prompting the dysfunctional cognitive content and facilitating subjective information processing (Bertolote, Fleischmann, De Leo, & Wasserman, 2003). These may consequently lead to negative emotions and thoughts such as those of fear, danger, being unlovable, feeling inadequate, or despairing.

With this understanding, the cognitive-behavioral theory has used trauma-focused therapy to treat PTSD. The trauma-focused cognitive-behavioral theory (TF CBT) is focused on identifying maladaptive cognitions, providing insight, cognitive processing, and changing thinking and behavioral patterns of traumatized patients (de Arellano et al., 2014). The thoughts and behavior patterns are changed through the use of exposure techniques. In exposure therapies, a PTSD patient is usually exposed to the trauma gradually to resolve maladaptive cognitions and reduce the distress related to the trauma-related memories (Kliethermes, Drewry, & Wamser-Nanney, 2017).
Studies have established that TF CBT is a safe and effective intervention for PTSD in adults, children, and adolescents with a range of traumatic experiences (Kar, 2011; Konanur, Muller, Cinamon, Thornback, & Zorzella, 2015; Murray et al., 2015).

Cognitive-behavior therapies are also used in the treatment of SB. According to the cognitive-behavioral theory, SB stems from the maladaptive cognitions in depressed persons (Rudd, Joinei, & Rajab, 2001). Suicidal ideations are therefore viewed as consequences of the negative automatic thoughts and maladaptive cognitive factors of a depressed person. The maladaptive cognitions in persons with SB are characterized by a seeming inability to tolerate distress and perceived feelings of being unloved, worthless, helpless, and hopeless (Rudd et al., 2001). In analyzing research reports of depressed patients, Beck (2011) found the theme of demotivation, hopelessness, self-criticism, and suicidal ideations. Hence, Beck theorizes that SB results from the maladaptive automatic thoughts and the negative core beliefs that have been activated in a person before the behavior of attempting suicide.

According to Weishaar (2000), a negative cognitive triad, which has been ingrained in one's core belief from an early age tends to initiate SB. The term cognitive triad as coined by Beck explains the three areas that are viewed with negativity by the depressed person. These include a negative view of oneself, their world, and also the future (Beck, Rush, Shaw, & Emery, 1987). Beck’s cognitive triad presented in Figure 2.2 depicts the interaction in the three cognitive problems that lead to SB.
As indicated in figure 2.2 the depressed person has a negative view about their world, themselves, and about the future which leads to a sense of despair. The negative view about oneself entails a low opinion of self where the depressed person feels inadequate, undesirable, deprived, defective, and diseased. Due to their perceived rejection from other people, they tend to make many demands since they feel unsupported (Beck et al., 1979). Consequently, having unmet demands may intensify their feelings of being undesirable and unloved, leading to further suicidal ideations. A depressed person may therefore perceive suicide as an appropriate option to their problems since they have a rigid view of others and themselves, leading to poor inter-personal and problem-solving skills (Weishaar & Beck, 1990).

According to Weishaar (2000), the negative view of one's future, which is a state of hopelessness, is the major aspect in the cognitive triad which highly correlates to suicide. Hopelessness implies a sense of despair resulting from negative expectations regarding one's future (Ackoff, Ackoff, & Emery, 2005). A state of hopelessness, as well as negative self and future evaluations, result from cognitive distortions (Fazakas-DeHoog, Rnic, & Dozois, 2017).
A study by Fazakas-DeHoog et al. (2017) among university students established the major causes of suicide to be cognitive distortions and not cognitive deficits. They defined cognitive distortion as the dysfunctional thinking processes that constitute biased thoughts and logical errors. The cognitive distortion, which is likely to be found in suicidal youths is an all-or-nothing form of thinking where one tends to think that things or situations have to be in a certain preferred way and if not so, there is no hope (Matthews, 2013). For instance, a student may think that unless they score a certain grade in exams, they are failures in life. This may lead to hopelessness and despair.

Cognitive-behavior therapies for SB are aimed at remedying the maladaptive thinking process; therefore, they target cognitive distortions and equip patients with coping skills to relieve negative effects (Hollon, Weishaar, & Beck, 2001). Cognitive interventions are necessary for addressing the maladaptive core beliefs and providing skills for the modification of suicide schemas. According to Beck (2011), cognitive restructuring helps a patient achieve lasting changes from self-defeating behaviors and emotional anguish. These aid in developing relevant skills for coping with distress to reduce SB (Berk, Henriques, Warman, Brown, & Beck, 2004).

Despite the relevance of cognitive-behavioral theory in explaining SB, it seems to have a shallow view of the aspect that lead to suicidality. The cognitive-behavioral theory is predominantly focused on the role of cognition in the development of SB; it, therefore, seems to undermine a myriad of other factors that are likely to trigger SB. Instead, the biosocial theory presents a different dimension in the concept of suicidality since it is focused on the interaction between psychological, biological, and social aspects in the development of SB.
2.2.2 Biosocial theory

The biosocial theory by Marsha Linehan incorporated some strategies from cognitive and behavioral theories to explain the development of chronic SB. Linehan's biosocial theory explains SB as a learned way of coping with severe emotional distress (Linehan, 1993a). According to Linehan (1993a), the thought disorders of suicidal persons are due to unregulated intense affective responses. Suicidal behaviors, therefore, result from maladaptive responses to overwhelming, uncontrollable, intensely painful negative affect.

The biosocial theory postulates that SB results from a bio-psychosocial framework. Suicidal behaviors, which characterizes many borderline personality disorder (BPD) patients result from a transaction between inborn vulnerabilities and some environmental influences. The emotional dysregulation which characterizes SB emerges from childhood invalidating environment and biological emotional vulnerabilities (Sauer & Baer, 2010). According to Linehan (1993a), the development of extreme emotional labiality tends to be perpetuated and shaped by the early psychosocial environment as well as the inborn characteristics of a child.

The biological vulnerabilities entail heightened stimulation whereas, the environmental ones entail a history of childhood invalidating emotional experiences (Smolewska, 2012). An invalidating environment as clarified by Linehan (1993a) is not just where a child is neglected or abused, but where its feelings are invalidated. A child's feelings can be invalidated when they are ridiculed, ignored, denied, or judged. According to Wagner and Linehan (2006), such an environment tends to reinforce biological vulnerability to emotional sensitivity and emotional reactivity. An invalidating environment, therefore, enhances the inborn aspects thus triggering emotional dysregulation.
It is from their adverse circumstances that individuals tend to acquire a range of dysfunctional thought patterns and behaviors as well as emotional responses. When a child is constantly invalidated, a cycle of dysfunctions persists, causing emotional problems and triggering varied dysfunctional coping behaviors and subsequently, elicits more invalidating experiences (Brown, 2006). According to Linehan (1993a), suicidal persons have difficulty tolerating emotions, which makes it difficult for them to regulate their emotions. Hence, chronically suicidal individuals have been found to have an emotional phobia and chronically dysregulated emotions (Linehan, 1993a). The low emotional tolerance capacity emanates from their exceptionally reactive physiological response system.

Unlike in cognitive-behavioral theory, the biosocial theory views emotional problems as aspects that are more independent of cognition. Researching in neuro-psychological aspects of behavior, Gross (2015) established that emotional behaviors can be activated by some stimulus events that bypass the cognition part in the brain. According to Linehan's, the emotional construct is very broad. It includes biochemistry, emotional, and physiology factors such as; facial and muscle reactions, emotion-linked actions, action urges, and cognitive-emotional processes. The biosocial theory, therefore, holds the view that integration between environmental aspects and biological vulnerabilities heightens emotional dysregulation and consequential behavioral dyscontrol, leading to undesirable social and cognitive outcomes (Crowell, Beauchaine, & Linehan, 2009).

The biosocial theory also views SB as resulting from an interaction between self-invalidation and emotion dysregulation. Self-invalidation is manifested through negative perceptions such as feelings of shame, low self-esteem, negative self-judgments, self-contempt, and self-directed anger (Brown, Linehan, Comtois, Murray,
Suicidal individuals have self-invalidation tendencies and thus self-harm may function as self-punishment. They seek to injure themselves as a form of self-invalidation, seeking to verify their distorted belief that they are bad and deserve punishment (Brown, 2006). Persons with SB often feel worthless, rejected, and view themselves as failures (Hassan, Flett, Ganguli, & Hewitt, 2014; Rizwan & Ahmad, 2010). Self-criticism is a greater predictor of lethal SB when compared to depression (Fazza & Page, 2003).

In a study by Brown, Comtois, and Linehan (2002), self-punishment was a commonly reported reason for engaging in non-suicidal self-injury and attempting suicide. However, self-punishment appeared more in persons with non-suicidal self-harm behavior than the suicidal persons who had attempted suicide. This implies that most of the persons whose intention is self-punishment may engage in life-threatening behavior with no intention of causing death to themselves. Shame as a self-invalidating behavior motivates suicidal urges as a means for hiding from shameful self and social scrutiny, especially when one loses hope regarding changing their shameful qualities (Brown, 2006).

The biosocial theory emphasizes the role of emotional dysregulation in SB. Several symptoms of DD such as; anxiety, anger, sadness, irritability, and shame, may be an indication of emotional dysregulation that's likely to drive a person into suicidality (Brown et al., 2009). A study by Warshaw, Dolan, and Keller, (2000) noted that extreme anxiety, agitation, and panic preceded suicide. People who are very reactive or sensitive to emotional stimuli have a heightened vulnerability towards depression and suicide since their emotional experiences seem intolerable and they tend to be intense, prolonged, and frequent (Brown, 2006). Emotional difficulties are therefore viewed as the major cause of suicidality in biosocial theory.
Similarly, a researcher Shneidman (1993), acknowledged internal perturbation or "psychache" which may take the form of acute emotional suffering, to be a major cause of SB. People, therefore, contemplate suicide when they cannot deduce any effective option for coping with their intolerable painful emotions. A study by Holden and Kroner (2003) found out that emotional suffering was a greater predictor of SB than hopelessness. This is because thoughts of hopelessness tend to evolve from emotional suffering.

Hopelessness, passivity, and withdrawal behavior are associated with learned helplessness when emotional suffering is perceived as inescapable (Abramson et al., 2000). This may imply a skills deficit in coping with emotional suffering leading to despair. According to Kehrer and Linehan (1996), suicidal persons have inadequate problem-solving skills hence, they tend to take a passive stand and often expect other people to solve their problems or facilitate their emotional regulation. Ineffective problem-solving skills, therefore, lead to rigid thinking patterns and a sense of hopelessness.

Most of the suicidal adolescents in Kenya may have grown up in an invalidating environment. A study among the Kenyan adolescents noted an association between major depressive disorders (MDD) and SB with neglecting parenting behavior and maternal depressive disorder (Khasakhala, Ndetei, Mathai, & Harder, 2013). Adolescents who have grown up in such an environment are likely to have their emotions and behavior invalidated. Consequently, they may suffer from emotional dysregulation and therefore have inadequate skills for tolerance, and regulation of strong negative emotions (Linehan, 1993b).

To such adolescents, the DBT skills would be essential in facilitating healthy adaptive practices in place of the automatic maladaptive responses (Rathus & Miller,
The DBT which has its basis in the biosocial theory equips suicidal persons with new skills such as those for regulating emotions to facilitate change in their behaviors, and help them seek a life worth living instead of despairing in life (Choi-Kain, Finch, Masland, Jenkins, & Unruh, 2017).

Although very relevant in explaining suicidality, the biosocial theory has been critiqued for making emotional dysregulation the fundamental problem in SB. Some other researchers conceptualize suicide as an impulse-control problem. The impulse-control problems in suicidal persons are associated with urgency towards experiencing strong impulses, which tends to occur under the negative affect and not emotional dysregulation (Silk, 1994). Affect entails longer-lasting feelings whereas emotions are short-lived. Researchers Bornovalova, Matusiewicz, and Rojas (2011) noted a higher association between suicidality and negative affect in comparison to negative emotionality. Suicidal behaviors can, therefore, be viewed as a negative affect problem and not just an emotional problem as postulated in biosocial theory (Smolewska, 2012).

Despite the few areas that have been overlooked in the biosocial theory, it is relevant for this study because most of its propositions are related to the problems faced by the Kenyan youths. For instance, traumatized youths are likely to have had an invalidating environment leading to emotional problems. The biosocial theory is also the basis for DBT which equips suicidal persons with relevant life skills for dealing with a wide range of psychosocial issues and it is quite efficacious in the treatment of SB (Linehan, 2015b). According to Chepkoech et al. (2019), the increasing rate of suicides among Kenyan adolescents implies a lack of life skills thus, when faced with realities of life they tend to perceive suicide as an easy way out. Equipping the youths and adolescents with the psychosocial skills proposed in
biosocial theory is therefore an essential endeavor in helping them face their daily challenges instead of despairing.

2.3 Prevalence and Severity of SB

Prevalence as a statistical concept refers to the proportion of a population with a specific characteristic in a given period (NIMH, 2018). Knowledge of the prevalence of suicide and SB is essential in policymaking since it helps target the relevant population in the suicide prevention effort (Nock et al., 2008). High rates of suicide have been recorded globally, with estimates by WHO (2020) showing 800,000 suicidal deaths every year. Thus, approximating that one person dies of suicide every 40 seconds and for every suicide, there are more suicidal attempts. It is estimated that for every adolescent who commits suicide there are 400 adolescents reported to have attempted suicide (Cutler, Glaeser, & Norberberg, 2001). This indicates that suicide is a major cause of mortality rate and the more threatening cases need to be addressed.

Suicide is therefore a global phenomenon that has been noted in diverse cultures, ages, gender, socioeconomic classes, and religions. Across the diverse ages, a higher prevalence of suicide has been reported among adolescents and the youth. WHO (2019) ranked suicide second in the causes of death among adolescents and youths in the ages between 15 and 29 years globally. Moreover, a higher prevalence of SB ranging from 11% to 47.5% has been established among the older adolescents (IHME, 2016; Korb & Plattner, 2014; Palmier, 2011; Van Niekerk, Scribante, & Raubenheimer, 2012). According to Muehlenkamp, Claes, Havertape, and Plener, (2012) the global prevalence of SB among adolescents was 18.0%. In a study conducted among high school adolescents (15 and 16 years old) from 17 countries in Europe, 10.5% of the adolescents were found to have attempted suicide and 7.4% had frequent self-harm thoughts (Kokkevi et al., 2012). In Canada, a study of 2,396
adolescents aged 14 to 17 years old established the prevalence of suicidal ideation (8.1%) and attempts (4.3%) (Georgiades et al., 2019).

In Germany, a cross-sectional epidemiological study targeting 1180 young adults and adolescents established cases of SB with suicidal ideations having a prevalence of 10.7%, suicidal plans 5.0%, and suicidal attempts 3.4% (Voss et al., 2019). The study by Voss et al. (2019) found females to have a higher prevalence. A study in Malaysia among high school students (n=2789) aged 16 and 17 years found the prevalence of suicidal ideation to be 6.2% (Chan et al., 2016). Just like the study in German, in Malaysia, SB was significantly higher among female adolescents in comparison to males. Surveys carried out among students aged between 12 and 18 years, in China, established the suicidal attempts prevalence (17.2%) in a mean of 12-months (Liu et al., 2018). This indicates that SB is highly prevalent among adolescents globally.

According to the World Population Review (2019), the highest suicide rates per country were reported in Lithuania a country in Eastern Europe, at 31.9 suicides per 100,000 population; the second-highest was Russia in Eastern Europe, at 31 suicides per 100,000 people; the third was Guyana in South America, at 29.2 suicidal deaths per 100,000 people; and the fourth was South Korea in Asia, at 26.9 suicides per 100,000 population. This indicates that it is hard to predict the occurrence of SB by region since it cuts across diverse continents.

Although suicide has been noted to occur in diverse regions across the world, over 79% of global suicidal deaths are from low- and middle-income countries (WHO, 2019). According to Mars, Burrows, Hjelmeland, & Gunnell (2014), the overall numbers in Africa are a poor estimate since data was unavailable in more than two-thirds of the countries. However, there are still a few studies in Africa seeking to
determine the prevalence of SB. In Nigeria, a study of 1429 youths aged 10 to 17 years old estimated prevalence of over 20% on suicidal ideation and 12% suicidal attempts in one year (Omigbodun, Dogra, Esan, & Adedokun 2008). Still in Nigeria, it was established that a higher prevalence of SB was among the older adolescents aged 18 to 21 years (Ojuade et al., 2018a). These studies show that globally, females and older adolescents seem to present a higher prevalence of SB.

In other African countries, suicidal ideations and suicide attempt prevalence among students recorded high rates at 47.5% and 28.7% respectively in Botswana and 32.3% in South Africa (Korb & Plattner, 2014; Van Niekerk et al., 2012). Another study in Africa estimated SB on students to range from a low prevalence of 19.6% in Uganda to a high one of 31.9% in Zambia (Swahn, Bossarte, Elimam, Gaylor, & Jayaraman, 2010). In Ethiopia, a cross-sectional study of 573 students established a 22.5% prevalence of suicidal ideation and 16.2% suicidal attempts (Amare, Woldeyhannes, Haile, & Yeneabat, 2018). Despite suicide being understudied in sub-Saharan Africa, there is still substantial evidence indicating that the rates of SB are higher in this region.

In Kenya, just like in most other African countries, it has been hard to establish the actual prevalence of suicidal deaths or attempts, since the national records depend on the few cases which are reported in health centers (Mutisya, 2016). Yet, from the scanty records used by the World Population Review (2019), Kenya was ranked at position 114 among 175 countries with the highest suicide rates. Other studies have estimated the prevalence of SB in Kenya to be higher in adolescents (27.9%) than in adults (24.1%) (Jenkins et al., 2015; Palmier, 2011). This indicates a high prevalence among the students in Africa and Kenya in particular thus, a need for developing effective interventional measures.
2.3.1 Severity of SB

Knowledge of the severity of SB is important since it affects decisions regarding the type and intensity of treatment. Diverse magnitudes of a disorder's severity affect day to day activities and can be used to monitor the efficacy of an intervention. The severity of SB can be viewed in a continuum that begins from suicidal ideation to planning suicide and then suicidal attempt, which may lead to suicidal death. Interventions geared towards suicide prevention need to address SB in its earlier stages since high severity levels are indicated by a suicidal death.

Suicide plans among adolescents often precede an attempt, though Witte et al. (2008) found about 20% to 40% of adolescents attempted suicide impulsively with no plan. Suicidal attempt indicates a high severity level of SB and thus an attempt with or without intent presents a high suicide risk. The different severity levels in SB have been established by studies globally. In the United States, a nation-wide survey among school-going adolescents in the year 2017, revealed that a substantial number (13.6%) had a suicidal plan whereas another good number (7.4%) of them had attempted suicide. In the study, a higher number of females (22.1% vs. 11.9%) than male had thought of attempting suicide, had a suicidal plan (17.1% vs. 9.7%), and also a higher prevalence of female students (9.3% vs. 5.1%) than male had made suicidal attempts (Kann et al., 2018).

In China, an ongoing longitudinal study among 11,831 adolescent students, recorded a 17.6% lifetime prevalence of suicidal thoughts among males and 23.5% among females, suicidal plans were 10.7% in females and 1.3% in males while suicidal attempts were 4.6% in males and 1.8% in females (Liu, Chen, Liu, Wang, & Jia, 2019). According to Liu et al. (2018), the estimated suicidal attempts ranged from a low prevalence of 6.7% in Malaysia to a very high prevalence of 61.2% in
Samoa with a one-year average prevalence of 17.2%. The study by Liu et al. (2018) found the general prevalence of attempted suicides to be significantly higher among girls (18.2%) than in boys (16.2%) and the prevalence increased with age.

In another study among school-going adolescents in 59 low and middle-income countries across six WHO regions the overall prevalence of suicide ideations (16.9%), suicide planning (17.0%), and suicide attempts (17.0%) was established (Uddin et al., 2019). The study by Uddin noted a higher prevalence in girls than boys for suicidal ideation (18.5%, vs. 15.1%), suicide planning (18.2% vs. 15.6%), and suicide attempts (17.4%, vs. 16.3%). Just like most other studies, there was a higher prevalence of the older adolescents (15 to 17 years) in comparison to the younger ones (13 to 14 years) in the three categories of SB (Uddin et al., 2019). In Bangladesh, suicidal ideation was more prevalent among females (66, 52.8%) and in a substantial majority of adolescents who were students (92, 73%) and unmarried (103, 82.4%) (Begum et al., 2017). This indicates the varied prevalence of SB across diverse cultural settings, gender, and ages. However, more cases of SB- suicidal plans and attempts have been noted among females compared to males and older adolescents compared to the younger ones.

In Africa, a higher prevalence of SB has been established. A study in a South African psychiatric hospital reported suicidal ideation, plan, and attempt at 61%, 64%, and 70.3% respectively (Khasakhala, Sorsdahl, Harder, & Williams, 2011). Another study at a hospital in Nigeria noted a higher prevalence of suicidal attempt (64.8%) with and without intent, with 25.2% suicidal plan and 20% suicidal ideations among suicidal adolescents (Ojuade et al., 2018a). The results agree with (Uddin et al., 2019), who noted a higher prevalence of severe SB in the African region in comparison to other regions. The results may also be an indication of diverse research
settings since psychiatric patients tend to present with substantially higher levels of SB (Khasakhala et al., 2013; Shibre et al., 2014).

A study in Kenyan rural area among adults established that a quarter of the sample (24.1%) had despaired in life with a fifth experiencing death wish at some point in their lives. About 7.9% of the respondents reported suicidal thoughts and 1.9% had attempted suicide (Jenkins et al., 2015). The lower prevalence in the study by Jenkins et al., in comparison to that of Khasakhala et al. (2011) and Ojuade et al. (2018a) in an African population, may be an indication of the different research set-up because it was not in a clinical setting. This implies that higher prevalence is evident in a hospital set-up since respondents tend to present with psychiatric disorders.

A higher number of psychiatric comorbidities is a significant correlate of suicidality with DD severity indicating a higher risk of SB in both females and males (Handley, Rich, Davies, Lewin, & Kelly, 2018; Khasakhala, Ndetei, & Mathai, 2013). Researchers Handley et al. (2018), found that attempted suicide was significantly more prevalent among females who had depression onset at a younger age. The study also noted that a higher prevalence of respondents with a history of attempted suicide (32.65%) were at a higher risk of attempting suicide. The findings, therefore, indicate that adolescents with a history of suicide attempts tend to re-attempt suicide and thus are at a higher risk of completed suicide. This agrees with the findings that a high number of suicide attempters (31% to 50%) re-attempted suicide within a period of 3 months (Rathus & Miller, 2002).

Severe levels of SB may be an indication of other psychological disturbances as a result of psychiatric disorders. According to Nock et al. (2010) patients with a history of multiple attempted suicide are likely to present with psychiatric disorders with greater levels of comorbidity and thus pose a greater risk for completed suicide.
Individuals with higher numbers of suicide attempts are at a greater risk of suicidal death compared to those who have attempted once (Weiner, Richmond, Conigliaro, & Wiebe, 2011). A study by Forman, Berk, Henriques, Brown, and Beck, (2004), indicated that multiple attempters display more severe psychopathology.

The three-step theory (3ST) hypothesizes that advancing from suicide ideation to suicide attempt occurs when the dispositional, acquired, and practical factors in a person elicit high tenacity to face the fear and pain of attempting to commit suicide (Klonsky & May, 2015). Therefore, suicide attempts seem to increase the tenacity to face the uncertainties associated with committing suicide. Although the study by Nock et al. (2008) noted a cross-national variability in the prevalence of SB, the risk factors and characteristics of SB were highly consistent. The consistency across diverse cultural settings depicts that severe SB indicated by attempted suicide increases the risk for suicidal death.

Regarding the severity of DD, a study (Othieno, Okoth, Peltzer, Pengpi, & Malla, 2014), in a Kenyan University noted the overall prevalence of moderate DD to be 35.7% and severe DD, 5.6% among the students. Higher prevalence of moderate (39.0% females and 33.5% males) and severe (5.1% female and 5.3% males) DD were noticeable among female respondents in comparison to the males. Depressive illnesses were significantly more common among the respondents who were married, in their first year of study, from an economically disadvantaged background and those living off-campus. Other variables that were significantly related to the severity of DD included the use of tobacco, binge drinking, and being in older age. This implies that DD in its moderate levels is highly prevalent among students and it may result from stress which is associated with varied predictors and risk factors.

2.4 Risk Factors Predictors and Protective Factors for SB
2.4.1 Sociodemographic predictors for SB

Understanding the sociodemographic predictors for suicide from diverse contexts is crucial in an effort towards its reduction. Age and gender disparity has been noted in the presentation of SB as well as other mental health problems. Focusing on the age disparity, Voss et al. (2019) noted that across different countries there was a higher prevalence of SB among older adolescents in comparison to the younger ones. A meta-analysis of suicidal mortality data in 45 countries of Africa, Asia, Oceania, Europe, North, and South America among adolescents aged 10 to 19-years-old found suicide rates to be higher among older adolescents (15–19 years old) compared to younger ones (10–14 years old) worldwide. The study by Voss and others, further showed that an early onset of SB occurred among adolescents aged between 12 to 18 years old; consequently, implying the need for early assessment and intervention to alleviate future suicide.

Several types of research on gender presentation of SB have found higher numbers of completed suicide among males whereas the numbers of suicide plans and attempts are higher in females than males (De Leo, Bertolote, & Lester, 2002; Goldsmith, Pellmar, Kleinman, & Bunney, 2002). Similarly, Glenn et al. (2020), observed that cases of suicide were higher among males compared to females. In another study, Handley et al. (2018) observed that severe DD was significantly associated with SB in both females and males. However, the suicide attempt was more prevalent among females who had DD onset at a younger age and patients with a higher number of comorbid psychiatric disorders. There is therefore notable gender disparity in the presentation of SB (Narishige, Kawashima, Otaka, Saito, & Okubo, 2014).
According to da Silva Cais, Stefanello, Fabrício Mauro, Vaz Scavacini de Freitas, and Botega (2009), in Brazil, females had more suicidal attempts than males. Females who presented in hospitals with suicide attempts were likely to be on their second or more attempt while males were mostly on their first suicide attempt. This may imply that more males could have executed suicide in subsequent attempts. Still, in Hungary more males above 35 years could have executed suicide since multiple suicidal attempts were common in younger males aged between 20 to 35 years old; whereas, among the females, it was common at a higher age of 35 to 44 years old (Osváth, Kelemen, Erdős, Vörös, & Fekete, 2003). In South Africa, Burrows and Laflamme (2008) established that a high number of males had committed suicide since suicidal deaths by males were twice that of females. Therefore, although females present more with SB, a much higher number of males die of suicide.

In South Africa still, another study found higher numbers of suicide among males with a greater concentration of SB among young adults (Burrows, 2005). Researches in South Africa and Nigeria have found a higher risk of SB among older female adolescents (Burrows & Laflamme, 2008; Ojuade et al., 2018b) in comparison to the younger ones. In Uganda, the risk of planning suicide was higher among females and younger adolescents (Rudatsikira, Muula, Siziya, & Twa-Twa, 2007), indicating that although the execution of suicide tends to occur in older adolescents, there is an earlier onset of suicidal planning.

In Tanzania, a unique trend was observed in that unlike other studies, equal numbers of males (50%) and females (50%) were found to be vulnerable to SB (Dunlavy, Aquah, & Wilson, 2015). However in Kenya, just as indicated by most of the literature, a study by Bitta et al. (2018) in Kilifi, established a higher prevalence of completed suicide among men in comparison to women. The study also noted that
most of those cases (76%) completed suicide by hanging themselves. The study by Bitta et al. further established that the annual incidence rate of suicide increased with age.

The trend of SB in Kenyan youth seemed to be consistent with most of the other studies since a study by Ongeri et al. (2018), among Kenyan University students, found the prevalence of SB to be higher in females at 19% as compared to 15% in males. Similarly, a study of adolescents in Nairobi, Kenya indicated a higher prevalence of SB among older adolescents, aged 16–18 years compared to the younger ones aged below 16 years of age (p = 0.004) (Khasakhala, Ndetei, Mathai, & Harder, 2013). Therefore, these studies show that being a female and an older adolescent are indicators of SB thus predicting that SB increases among adolescents as they get older.

2.4.2 Risk factors for SB

The risk factors for SB refer to those characteristics that increase the likelihood of SB thus making one susceptible to committing suicide. To clinicians, information on risk factors provides a clear direction for the assessment and management of high-risk patients. The predictive aspect of vulnerable persons is crucial in the preventive effort, considering the low-rates of SB self-disclosure (Busch, Fawcett, & Jacobs, 2003; Mérelle et al., 2018).

The risk factors for SB have been classified into three broad categories by WHO (2014). They include the community or relationship risk factors, individual risk factors, and genetic or biological factors. The community and relationship risk factors include interpersonal issues such as family cohesion, culture, religion, history, and legal implication. These entail the stressors arising from acculturation, war, conflict, discrimination, trauma, abuse, rejection, and lack of social support as well as
interpersonal conflict and loss. The individual risk factors consist of previous suicide attempts, mental disorders, alcohol and substance abuse, chronic illnesses and pain, hopelessness, and a history of suicide in a family. The biological factors are associated with low serotonin levels which characterize the mood and personality disorders as well as schizophrenia (Lin, Lee, & Yang, 2014). Although mental illnesses are categorized under the biological risk factors, diverse life stressors are likely to precipitate the biological dysfunctions leading to mental disorders.

Each suicidal case tends to be different and therefore there are myriad of diverse causal, predisposing, or precipitating factors ranging from childhood experiences to family factors, individual aspects, interpersonal difficulties, and biological dispositions. Even though there is no one definite cause of SB, some factors have been associated with a high risk of engaging in SB and death by suicide. The following is a discussion of the common risk factors for SB focusing on the review of literature globally, regionally, and locally on each risk factor.

According to Brown et al. (2002), a history of suicide attempts has been recognized as one of the greatest risk factors for eventual suicide. Studies in diverse contexts have established a history of suicidal attempts as a notable risk factor for suicide death. In England, persons who had a history of self-harm behavior were 34 times more likely to commit suicide compared to those with no history of self-harm (Cooper et al., 2005). A longitudinal study in the USA where 1,490 first time suicide attempters were sampled showed that 5.4% (n=81) died of suicide with the majority (76.5%) being men (Bostwick, Pabbati, Geske, & McKean, 2016). A study in Spain indicates the higher risk of suicide by attempters to have resulted from advancement to higher lethal method since 65.3% of people who had attempted suicide moved to a more lethal method by hanging themselves, thus causing eventual death (Goñi-
Sarriés, Blanco, Azcárate, Peinado, & López-Goñi, 2018). Similarly, in New Zealand, a 10 years follow-up study noted that 4.6% of persons who had previously attempted suicide completed suicide (Gibb, Beauvais, & Fergusson, 2005).

In a study among 115 Nigerian suicidal youths, Ojuade et al. (2018b) found out that there was a higher likelihood of completing suicide among respondents who had previously attempted suicide. According to Ojuade et al. (2018b), a higher number of suicide attempts predicted a higher likelihood of completed suicide. These researches confirm that persons with a history of suicide attempt are at a very high risk of committing suicide, thus implying the need to target such persons in any suicide prevention plan.

Persons with a history of suicidal attempts are likely to be suffering from psychiatric disorders since psychiatric disorders tend to increase one's susceptibility to suicide-related behaviors as well as suicide (CDCP, 2010). About 90% of suicidal cases are associated with mental disorders (Phillips, 2010). Individuals with multiple suicide attempts tend to have more psychiatric disorders with greater levels of comorbidity (Nock et al., 2010; Osváth et al., 2003). A study by Handley et al. (2018) among 1051 participants where 364 reported lifetime symptoms of DD noted that among the depressed respondents, 48% had lifetime suicidal ideation while 16% reported a lifetime suicide attempt. A study by da Silva Cais et al. (2009), established hopelessness as the major risk factor for death by suicide and DD to be a predictor of suicide attempts. Other studies have found DD, hopelessness and suicidal ideation to be associated with multiple suicide attempts (Farabaugh et al., 2012).

Personality disorders and especially BPD, tend to increase the risk of SB and in particular suicide attempts (Forman et al., 2004; Yen, Gagnon, & Spirito, 2013). Borderline personality disorder is highly associated with both a history of childhood
trauma and SB (Soloff, Lynch, & Kelly, 2002). Studies have established high comorbidity between BPD and PTSD, with an estimated 30–50% of the persons with BPD also meeting the criteria for PTSD (Harned, Rizvi, & Linehan, 2010b; Pagura et al., 2010). Borderline personality disorder was therefore conceptualized by Gunderson and Sabo (1993) as a form of chronic PTSD which causes great distress since it presents with multiple debilitating problems.

Persons with PTSD due to a history of trauma are also likely to present with multiple psychiatric disorders. This category of persons has been found to display self-destructive and impulsive behaviors including multiple suicide attempts (Foa, Keane, & Friedman, 2000). According to da Silva Cais et al. (2009), most of the persons who had experienced trauma in form of physical, emotional, and sexual abuse were likely to have attempted suicide more times than the general population. Similarly, Jeon et al. (2014) found PTSD to be comorbidity that showed the highest odds ratio with suicidal attempts in respondents who had experienced serious trauma.

The types of serious traumas associated with suicidal attempts included witnessing a violent crime, physical abuse, sexual assault, military combat, and being threatened by others (Jeon et al., 2014). According to Kaslow, Jacobs, Young, and Cook (2006), there is an association between childhood traumatic experiences and multiple suicide attempts in women. Hence, repeated suicide attempts are associated with a history of childhood traumatic events and recent significant life stressors such as loss of a partner or financial problems (Pompili et al., 2011). There is therefore a high risk of suicide among traumatized persons and especially those with complex trauma.

A study in South Africa reported that 52% out of the 50 suicidal female youths had experienced physical and sexual abuse (Fine, Alison, Westhuizen, & Krüger,
2012). The study also noted family psychopathologies as risk factors for SB, which included DD, substance abuse, and threatening-aggressive behavior as well as trauma-related difficulties. The highly reported traumatic experience in this population was suicide attempts by parents at (85%). Therefore, intensely difficulty or traumatic life experiences are likely to lead to mental disorders and consequently a sense of despair leading to suicidality. Similarly, a study in Nigeria found a history of traumatic experiences such as sexual abuse, physical abuse, and involvement in physical fights to be significant predictors of SB (Omigbodun et al., 2008). Complex trauma is a strong predictor of suicidality since it heightens the dysfunctional reactivity to trauma in adulthood.

In Ethiopia, suicidal rates were found to be greater among individuals with severe psychiatric disorders (Shibre et al., 2014). Similarly, a study in Kenya found a high prevalence of SB among youths with psychiatric and substance abuse disorders (Khasakhala et al., 2013). DD has been endorsed highly as a major causal factor for suicidality among adolescents and adults in Kenya (Khasakhala, et al., 2013; Ongeri et al., 2018). In a study at a University in Kenya, Othieno et al. (2015) noted a history of physical abuse and DD among the risk factors for suicidality. Studies, therefore, agree that adolescents with a history of psychiatric disorders are highly vulnerable to suicidality.

Psychiatric disorders that are likely to increase the likelihood of SB include; psychotic disorders, mood disorders, and anxiety disorders. Suicidal individuals have reported varied anxiety disorders among them PTSD and phobic disorders (Miranda et al., 2008; Osváth et al., 2003). Thus, DD and PTSD among other mental disorders, as well as lack of prompt effective interventions may lead to the development of other psychiatric problems and consequently high rates of suicidality. The symptoms
associated with psychiatric disorders are likely to cause psychological distress as they tend to incapacitate the patient leading to interpersonal and intrapersonal challenges.

Psychological distress tends to increase the risk of mental disorders and subsequently SB. Studies concur that psychological distress leading to mental illness is a major causal factor for SB (Eskin et al., 2016; Tosevski, Milovancevic, & Gajic, 2010). Psychological distress arising from intrapersonal and interpersonal anguish is an established predictor of SB among adolescents (Eskin et al., 2016). Most of the high school students are in the adolescence stage of development which is a critical transition period from childhood to early adulthood (American College Health Association [ACHA], 2013). Confusion at this age may arise from an effort to cope with the independence of an adult and the dependence of a teenager. Many first episodes of psychological disorders tend to appear at this developmental stage (Pedrelli, Nyer, Yeung, Zulauf, & Wilens, 2015). This may be due to cognitive and psychosocial development leading to increased self-awareness, overwhelming thoughts, and a need for independence among other developmental crises that challenge their coping ability (Tsang, Hui, & Law, 2012).

According to Hamaideh (2011), other stressors among adolescents and the youth may be self-imposed since driven by high energy, adolescents are likely to get into high-risk activities. This is precipitated by a desire to take charge of their lives (Allen, 2012). Although done in pursuit of pleasure, the high-risk activities could be a response to emotional turmoil. These high-risk activities lead to a stressful life, thus making it hard for one to cope with the demands of life including academic expectations. Lack of timely intervention to the psychological distress may lead to symptom progression and a likelihood of a mental breakdown.
Psychological distress in adolescent students may also emanate from problems related to adjustments to a new social environment, relationships or academic pressure as well as financial hardship, time management, anxiety over peer pressure and substance use, as well as personal problems (Eskin et al., 2016; Pedrelli, et al., 2015; Wilcox et al., 2012). A study by Gallagher (2015), revealed that about 44% of the students receiving counseling services at the universities in the United State were experiencing severe psychological distress. In Canada, a study 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). Whereas a good number of the students experienced overwhelming anxiety and had seriously considered suicide, the study listed mental distress as the commonly reported risk factor leading to SB among the students.

A study in Ethiopia established that adolescent students who had poor social support had been hurt physically and had high rates of school absenteeism were at a higher risk of SB (Amare et al., 2018). In Uganda, a study among adolescents and youths aged 14-24, in the informal settlements, established the psychosocial correlates of SB to be negligence by parents due to alcohol use, sex trading for basic needs, experiencing sadness, loneliness, and expectation of early death as well as being orphaned. Similarly, in Kenya, Karsberg and Elklit (2012) found distress among high school students to have resulted from losing a close person, chronic illness, witnessing or personally being injured, hurt, or having a neglecting parent. Thus, family problems and lack of basic needs could have led to symptoms of DD such as isolation and hopelessness leading to suicidal ideations and attempts.

Experiencing intense psychological distress and the perception that nothing could be done to relieve the symptoms tends to lead to a sense of hopelessness and
despair. According to Beck (2011), hopelessness is a major predictor of SB. A combination of psychological distress and a state of hopelessness, which is common among depressed persons are great risk factors for suicidal ideations which may progress to suicidal plans, attempts, and eventually to suicide.

Hopelessness is a strong predictor of suicidality in adults since it leads to feelings of gloom and resignation (Huen, Ip, Ho, & Yip, 2015). Hopelessness results from despair, a belief that one cannot achieve their desires and nothing can be done to alleviate their undesirable situation. A sense of hopelessness in suicidal patients is likely to create an illusion that there are no solutions to their problems thus, activating their negative expectations. For instance, Wenzel and Beck (2008) found out that suicidal persons had feelings of being burdensome to their family so they felt that the family would be better off without them. Hence, according to Wenzel and Beck (2008), hopelessness is a stronger predictor for SB in comparison to depression. Hopelessness is also an established strong predictor of eventual suicide among persons with mental problems (Klonsky, Kotov, Bakst, Rabinowitz, & Bromet, 2012; Qiu, Klonsky, & Klein, 2017). The youth who feel hopeless and have despaired in life are likely to engage in risky behavior and result in alcohol or substance abuse as they seek to cope.

A history of alcohol and substance use is an established risk factor for SB (CDCP, 2010). Studies have noted that youths with multiple cases of suicidal attempts are likely to be using or abusing alcohol and drugs (Kaslow et al., 2006; Poorolajal, Rostami, Mahjub, & Esmailnasab, 2015). According to Kokkevi et al. (2012), in a study among adolescents in 17 European countries, SB had significant associations with gender, family integrity, substance use, and family 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 the use of intravenous drugs. Thus, the longer a person had used the substance, the higher the likelihood of eventual death by suicide. A study among Chinese adolescents agreed with the aforementioned studies on the significant association between smoking and drinking alcohol with an increased risk of SB (Liu et al., 2019). The studies in the different regions, therefore, concur on substance use being associated with the risk of suicidality.

Analysis of data from middle and low-income countries shows that SB is highly associated with the use of all forms of substances including drugs that were not medically prescribed (Breet, Goldstone, & Bantjes, 2018). Therefore, in Africa just as in developed countries, abusing drugs and substances increases the risk of suicidality. Similarly, studies in Benin and Tanzania found high rates of SB and attempts among the youths who were using illicit drugs and substances of abuse (Dunlavy et al., 2015; Randall, Doku, Wilson, & Peltzer, 2014). Studies in Kenya have indicated similar results; 7% of the university students who had a history of alcohol and substance use were found to have engaged in SB (Ndegwa, Munene, & Oladipo, 2017). A study by Othieno et al. (2015) also noted alcohol and tobacco abuse to be associated with risky behavior, PTSD, and DD among university students in Nairobi, Kenya. These students with psychological problems were likely to have grown up in dysfunctional families characterized by physical abuse.

Family dysfunctions tend to increase the risk of suicidality. Some of the family factors that pose a risk to suicidality include childhood sexual or physical abuse, emotional abuse, poor parent-child relationship, poor parenting styles, loss of a primary caregiver, and psychopathology in close family members (Miller, Esposito-Smythers, Weismoore, & Renshaw, 2013; Zhai et al., 2015). Having cases of suicide
and suicidal attempts in a family is a strong predictor for suicidality (Forman et al., 2004; Jang et al., 2016; Jeglic, Sharp, Chapman, Brown, & Beck, 2005; Mann & Currier, 2010; Rostila, Saarela, & Kawachi, 2013). According to Van Orden et al. (2010), the suicide of a close family member tends to lower the threshold of SB in the affected persons.

Other family problems increase the susceptibility to SB. In China, adolescents who had a background of poor economic status, suicide history of friends and acquaintances, poor parental relationship as well as having internalizing and externalizing problems were at a higher risk of SB (Liu et al., 2019). Thus, negative family experiences and lack of skills on how to handle them increase the susceptibility for suicidality. In West Africa, Randall et al. (2014) found out that children who lacked parental support were likely to engage in a suicidal attempt. SB among these children was associated with anxiety, loneliness, being physically attacked, and usage of illicit drugs. The psychological distress associated with parental neglect is therefore likely to lead to SB which may indicate hopelessness.

Parental negligence and other family dysfunctions may emanate from psychopathologies in parents. Having a family history of psychopathology is an established risk factor for high levels of hopelessness and suicide ideation (da Silva Cais et al., 2009). In Nigeria, adolescents from polygamous and disrupted families had higher rates of SB (Omigbodun et al., 2008). A study in Kenya noted higher rates of SB among the youths whose mothers had DD and exhibited rejecting behavior towards their children (Khasakhala, Ndetei, Mathai, & Harder, 2013). Children from dysfunctional families characterized by negligence and psychopathologies in caretakers are therefore likely to be at a very high risk of engaging in SB.
Lack of or unhealthy interpersonal relationships act as stressors that are likely risk factors for SB too. According to Van Orden et al. (2010), SB result from perceived interpersonal detachment and feelings of being burdensome, as well as despair concerning changing these feelings. Bullying, which is highly associated with suicide in schools arises from feelings of rejection and consequently creates a sense of social unacceptability. Bullying entails constant verbal or physical aggression as well as an intentional exclusion of someone from an engagement (Terranova, Morris, & Boxer 2008). These aspects can threaten the identity of a person leading to psychological anguish.

The risk of suicidality during school life is heightened by bullying and suicide contagion (Centers for Disease Control [CDC], 2014; McLoughlin, Gould, & Malone (2015). The bully is likely to be a person who is emotionally unstable and may be motivated into action by a feeling of being unlovable. Both the perpetrators and victims of bullying are at a high risk of suicide (Kim, Leventhal, Koh, & Boyce, 2009; Klomek, Marrocco, Kleinman, Schonfield, & Gould, 2007). The bully could be externalizing their psychological distress and as a result, cause social and psychological suffering to themselves and their victim.

Suicidal behavior is also likely to be precipitated by the loss of significant relationships due to divorce, separation, or death of a significant person (Kaslow et al., 2006; Kposowa, 2003; Osváth et al., 2003; Wyder, Ward, & De Leo, 2009). Higher rates of SB have been reported after a break-up in romantic relationships among adolescents (Baker, Helm, Bifulco, & Chung-Do, 2015; Brent et al., 1993). Romantic relationships could have been their way of seeking solace from other distressing relationships. In West Africa suicidal attempt was found to be associated with anxiety, loneliness, being physically attacked, and using illicit drugs as well as
lack of parental support (Randall et al., 2014). Dysfunctional interpersonal relationships as well as losses are likely to lead to great emotional distress and lack of social support. In adolescents loss of romantic or peer relationships may predispose one into peer pressure and substance abuse.

A study among young people in Dar es Salaam, Tanzania, established a significant relationship between suicidality and loneliness which was attributed to depression (Dunlavy et al., 2015). Their findings on loneliness as a causal factor for SB concurred with other studies (Arria et al., 2011; Granero, Poni, & Poni, 2008; Hesketh, Ding, & Jenkins, 2002). Loneliness which is a symptom of DD may result from loss or failure of interpersonal relationships. According to Mugambi and Gitonga (2015), a high number of adolescents in Kenya experienced a conflicting relationship with their parents (84%), rejection by friends (61.6%), and had suffered from low self-esteem (54.7%), which made them vulnerable to DD. The distressing interpersonal relationships may have led to feelings of being unloved and unwanted. Considering that most youths are dependent on their parents, lack of both moral and material support may enhance a negative perception of self and others. Therefore, in families where there are financial constraints, the adolescents as well as the adults are vulnerable to feelings of despair.

Financial constraints are a stressor that increases the risk of suicidality, especially when accompanied by feelings of hopelessness. According to the CDCP (2010) financial and social loss heightens the likelihood of psychological distress leading to SB. In a study by da Silva Cais et al. (2009) more cases of SB were reported among housewives and unemployed men. Similarly, another study reported multiple suicidal attempts in males who were homeless and unemployed in comparison to those who were financially stable (Kaslow et al., 2006; Osváth et al.,
2003). The inability to meet the basic needs as well as low self-esteem due to financial problems are likely precipitating factors to a sense of despair.

An increase in suicide rates has been noted during times of economic downturns in the United States and Portugal (Luo, Florence, Quispe-Agnoli, Ouyang, & Crosby, 2011; dos Santos, Tavares, & Barros, 2016). According to Chang, Stuckler, Yip, and Gunnell (2013), when financial instability is comorbid with mental disorders, DD, substance abuse, aggression, and anxiety, it is likely to heighten the risk for suicidality. In South Africa, being disadvantaged socioeconomically was found to be associated with higher rates of suicide attempts (Burrows & Laflamme, 2010). This is an indication that the distress associated with financial difficulty tends to increase SB and may aggravate interpersonal problems.

Among the youth, financial constraints are likely to lead to high-risk behavior as well as psychological distress as one tries to cope with their financial demands. In Uganda, the youth from low socioeconomic background reported the major precipitating factors for suicidal tendencies to be; alcohol abuse (48.12%), sexually transmitted infections (STIs) (53.38%) and HIV (13.91%), experiencing rape (28.95%), and having been abused in childhood by a parent (51.50%) (Culbreth, Swahn, Nдетei, Ametewee, & Kasirye, 2018). Similarly, a poor socioeconomic background was identified as a risk factor 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, a history of physical abuse, and DD (Othieno et al., 2015). Most of the young persons from low socioeconomic backgrounds may have had a difficult childhood, besides, the persistence of financial constraints is likely to lead to a sense of hopelessness about their lives’ ambitions.
2.4.3 Protective factors for SB

Despite having gone through the above-named risk factors for SB, there is a likelihood of developing resilience if the protective factors around the distressed person are enhanced. Protective factors are the conditions that promote resilience and strength, leading to less likelihood of SB (US Department of Health and Human Services, & Office of the Surgeon General, 2016). To the community and institutions, knowledge of risk and protective factors is essential in providing guidelines on what needs to be changed or promoted for the reduction of suicidality (Rodgers, 2011). Protective factors are likely to enhance relief from psychological distress and promote coping ability thus, reducing the likelihood of developing a sense of despair from the psychological anguish experienced.

Some protective factors for suicidality include effective mental health care, religious involvement, good interpersonal relationships with peers, parents, family, community, and social institutions as well as proper problem-solving skills (Brown et al., 2005; Fleischmann et al., 2008; McAuliffe et al., 2006). These protective factors are likely to be enhanced when a person with SB seeks help or discloses their intent. Studies have confirmed that self-disclosure of stigmatized behavior is linked to positive psychological coping (Beals, Peplau, & Gable, 2009; Frattaroli, 2006). The positive outcome results from reduced self-stigma, improved self-esteem, social support, and the use of psychological services (Barry & Mizrahi, 2005). Non-disclosure tends to be a subconscious psychological defense mechanism for protecting from facing the anxiety associated with stigmatized thoughts (McLeod, 2019). However, according to Wenzlaff and Luxton (2003), thought suppression effort increases the frequency and intensity of depressive rumination. Thus, non-disclosure may lead to increased suicidal ideations.
A cross-sectional survey of Dutch adults found out that only 5% of the respondents had disclosed their suicidal ideations (Mérelle et al., 2018). This may be due to the stigma associated with SB. In their retrospective study of hospitalized patients who died by suicide, Busch et al. (2003) noted that 78% of these patients had denied having suicidal ideations a week before committing suicide. This is a clear indication that non-disclosure may interfere with suicide alleviation efforts. According to Wenzlaff and Luxton, (2003), although, people may hide their SB intentions as a way of suppressing disturbing thoughts, such attempts may increase the frequency and intensity of unwanted thoughts. On the contrary, self-disclosure reduces disturbing thoughts through the enhancement of social support and referrals for professional care. Professional care in the form of medical or psychotherapeutic treatment per the assessment results is vital in SB reduction efforts.

Psychotherapeutic interventions such as DBT PE acts as a protective factor for suicidality in that, they promote resilience through equipping clients with some vital life skills. In DBT emotional difficulties that are typical of DD are stabilized by equipping a client with skills for tolerating psychological distress, emotion regulation, mindfulness, and effective interpersonal skills (Linehan, 1993a). Resilience is built through the adoption of new ways that would calm the effects of upsetting circumstances (Haghayegh, Neshatdoost, Adibi, & Shafii, 2017). The exposure therapies act as protective factors since they are aimed at relieving the PTSD symptoms by improving a sense of mastery rather than fear, in facing the perceived stressful situations (Eftekhari, Stines, & Zoellner, 2006). DBT PE, therefore, enhances resilience by improving skills for coping with the major life stressors that pose a risk to SB among the high-risk persons suffering from PTSD and DD.

2.5 Relationship between PTSD and DD
Posttraumatic stress disorders (PTSD) and depressive disorders (DD) are psychiatric disorders that cause emotional anguish leading to a sense of hopelessness and thus suicidality. According to the American Psychiatric Association (2013), PTSD is characterized by intrusive thoughts, avoidance of reminders, negative thoughts, and feelings, as well as alterations in arousal and reactive symptoms. The negative thoughts, negative feelings, and some forms of altered arousal and reactivity seen in PTSD are symptoms of depressive disorders too (American Psychiatric Association, 2013). This indicates some symptom interconnection in the presentation of both PTSD and DD.

Since DD and PTSD are highly comorbid, approximately half of the people with PTSD meet the criteria for DD (Rytwin, Scu, Feeny, & Youngstrom, 2013). Although Flory and Yehuda (2015) attributed the DD and PTSD comorbidity to their overlapping symptoms, there is a likelihood that one does increase the risk for the other. Moreover, the relationship between SB, PTSD, and DD has been attributed to diverse psychosocial and biological factors. According to Ganz and Sher (2010), some core psycho-biological deviations leading to PTSD affect emotions, self-perception, impulsivity, arousal, irritability, aggression, and one's view of the world. These factors, as well as maladaptive coping skills, are likely to aggravate a sense of despair leading to SB.

The American Psychiatric Association, (2013), includes suicidality among the symptoms of DD. Both DD and PTSD are associated with the risk of suicidality. This implies that PTSD and DD are risk factors for suicidality. The symptoms of both PTSD and DD have been found in suicidal patients, with these patients often meeting the criteria for both disorders (Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012; Stevens et al., 2013); hence, having DD or PTSD is likely to increase the risk of
the other, and consequently increase SB. Studies have established an increased risk for SB among young persons with PTSD and DD (Khasakhala et al., 2013; Ndetei et al., 2010; Ruby & Sher, 2013; Sareen et al., 2005). More cases of suicide attempts have been reported among persons with comorbid PTSD and DD (Oquendo et al., 2003). This implies there is an association between PTSD, DD, and SB.

According to Ferrada-Noli, Asberg, Ormstad, Lundin, and Sundbom (1998), patients who had comorbid PTSD and DD had suicidal ideations more than PTSD non-depressive patients. However, non-depressed PTSD patients had a higher prevalence of attempted suicide. This may imply that while both PTSD and depressed patients have suicidal ideations, the depressed patients may lack the energy or drive for the suicidal attempt. PTSD has its basis from witnessing or experiencing traumatic events (Karsberg & Elklit, 2012). It is therefore an automatic reaction to the intense stress, leading the affected person to become hyper-vigilant psychologically and physically (Dyregrov & Yule, 2006). The traumatic experience as well as depressive symptoms are likely to lead to a sense of helplessness and consequently, suicidality.

The adolescent students tend to have social needs and academic goals, thus PTSD symptoms may aggravate distress leading to DD and SB. However, a study by Brown (2013) demonstrated that depression moderates the probable relationship between PTSD and SB. Some traumatic experiences act as chronic stressors. Research has established that exposure to stress and stress processes are likely to predispose one to DD (Shih, Eberhard, Hammen, & Brennan, 2006). This may happen especially when a person has poor coping skills or difficulty in regulating emotions as in DD. These factors have also been noted as indicators of SB (Ndetei et al., 2007). According to Cohen (2000), young people with severe PTSD often present with SBs,
conduct problems, dissociation, de-realization, and depersonalization, all of which are highly associated with the risk of completed suicide.

The distressing symptoms and cognitive distortions in PTSD are likely to trigger other mental illnesses. The major PTSD comorbid mental disorders are substance abuse, addictions, dependence disorder, anxiety, DD, social problems, and other chronic physical conditions (Felitti & Anda, 2010; Kar, & Bastia, 2006). According to a study by Alix, Cossette, Hébert, Cyr, and Frappier (2017), a high number (66%) of the sexually abused adolescents had PTSD and a good number (46%) of them, reported having suicidal thoughts. In these adolescents, shame and DD symptoms were found to partially mediate the relationship between self-blame and suicidal ideation.

A higher prevalence of suicide attempts has been established among persons with comorbid DD and PTSD. A meta-analysis of 65 studies with a total of 27,340 individuals with MDD found the prevalence of suicidal attempts to be 31% (Dong et al., 2019). In another study, the prevalence of 17.1% on suicidal attempts was reported among 825 respondents who had MDD (Jeon et al., 2014). These respondents are likely to have suffered from PTSD since, Caramanica, Brackbill, Liao, and Stellman (2014), noted that an estimated 50% of persons suffering from PTSD had a concurrent DD diagnosis. Comorbidity between PTSD and DD is therefore common, and it is associated with SB.

Regarding evidence of a significant association between SB, PTSD, and DD, a study by Stevens et al. (2013) in a population of 1,433 individuals with recurrent major depressive disorder (MDD) found out that PTSD resulting from assaultive trauma in persons who were depressed increased the risk for attempted suicide. In another study by Jeon et al. (2014), PTSD was the comorbidity that showed the
highest odds ratio with lifetime suicidal attempts in individuals with MDD. Lifetime suicidal attempts were also found to be significantly greater in respondents who had experienced any trauma than in those who had not (Jeon et al., 2014). In a meta-analysis of the association between PTSD and SB, Wilcox, Storr, and Breslau, (2009) found that PTSD and SB association persisted in different studies using different measures of SB, current and lifetime PTSD, psychiatric and non-psychiatric samples among the young adults.

According to Afifi et al. (2008), childhood traumatic experiences categorized as complex trauma increase the risk of chronic PTSD in adolescents and are associated with SB in later years. Adolescents who have experienced complex trauma tend to have depressive symptoms and are likely to result in higher levels of SB later in life (Afifi et al., 2008; Ford, 2007). Since children and adolescents tend to be dependent, they are likely to have a sense of helplessness regarding their trauma experience and comorbid mental disorders. This may consequently lead to feelings of worthlessness and hopelessness which characterize SB.

Adolescents in Kenya are greatly exposed to traumatic experiences with 88% of high school students reporting to have directly experienced trauma (Karsberg & Elklit, 2012). Similarly, Karsberg and Elklit (2012) showed that 37.9% to 55.3% of the 477 sampled Kenyan high school students had experienced trauma in different forms such as the death of a close family member, witnessing or experiencing an accident, or having an absent parent. Other studies have agreed on the many traumatic experiences in Kenyan youths, leading to a great number of PTSD cases (Njenga, Nguithi, & Kangethe, 2006; Ombok, Obondo, Kangethe, & Atwoli, 2013).

Adolescents in Kenya who had experienced trauma were found to be at a high risk of developing DD (Mugambi & Gitonga, 2015). Considering that most high
school students in Kenya have been exposed to trauma, they are highly at risk of developing PTSD (Ndetei et al., 2010). These adolescents are therefore vulnerable to other psychiatric disorders and SB since PTSD is a major cause of SB (Ndetei et al., 2007). Consequently, a higher risk of suicide has been observed among youths with more than one psychiatric disorders (Ndetei et al., 2008). The debilitating symptoms of multiple psychiatric disorders are likely to hinder academic productivity in adolescents who are mostly students and consequently result in SB due to feelings of hopelessness in their future ambitions.

2.6 Treatment of SB, DD, and PTSD

2.6.1 Treatment of DD and SB using cognitive-behavioral therapies.

Cognitive-behavioral therapies integrate the behavioral and cognitive treatment procedures for psychological disorders. They hold the view that cognitive processes are the major determinants of a person's emotions and behavioral response to life events. These aspects are likely to hinder or aid the adaptation process (Wenzel & Beck, 2008). The cognitive-behavioral therapeutic strategies, therefore, aim at restructuring the maladaptive cognitions to bring a change in distressing emotions and problematic behaviors (Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012). Restructuring is facilitated by giving insight to depressed and suicidal persons about their cognitive patterns thus, helping them adopt alternative strategies for eliminating unhealthy, automatic thoughts.

Cognitive-behavioral therapists help identify and evaluate automatic thoughts in their patients. This motivates the depressed patients to think more realistically and consequently feel better emotionally leading to more functional behavior (Beck, 1996). These are the concepts used in cognitive behavioral therapies for depressed and suicidal patients. Cognitive-behavioral therapies have been put into the study for
different psychological disorders. They are efficacious in the treatment of depression in its mild, moderate, or severe form (Beck, 2005; Butler, Chapman, Forman, & Beck, 2006). Studies have also proved the effectiveness of cognitive-behavioral therapies in the treatment of SB (Brown, 2006; Ghahramanlou-Holloway, Bhar, Brown, Olsen, & Beck, 2011; Rudd et al., 2015; Waldron & Turner, 2008). Despite the proven efficacy, some weaknesses have been observed in cognitive-behavioral therapies, these have led to modifications for greater efficiency.

Cognitive-behavioral therapies have been critiqued for having highly structured sessions since they follow up on the previous session's tasks (Beck, 2011). Being too structured may hinder a client from taking action (Leahy, 2008). According to Sanders and Wills (2005), the fact that cognitive-behavioral therapy is too structured makes it pay little attention to the therapeutic relationship. In any psychotherapeutic intervention, a therapeutic relationship is crucial in effecting change to clients (Yalom & Leszcz, 2005). However, in more recent work Beck (2011) emphasizes the importance of a therapeutic relationship, thus changing the misconception of cognitive-behavioral therapy as disregarding the therapeutic relationship. More improvements have been done with studies offering a model of incorporating a therapeutic relationship into cognitive-behavioral therapy (Beck, 2014; Easterbrook & Meehan, 2017). According to Wills (2010) in cognitive-behavioral therapy, a therapist and client work collaboratively with the client bringing in their thoughts and feelings as raw data for change.

Incorporation of behavior therapy is viewed as a weakness in cognitive therapy since such interventions treat symptoms rather than causes when they ignore the early experiences of a patient. Behavioral therapies have also been criticized for not paying attention to emotions. They do not see the need for bringing feelings in
therapy first by encouraging the patients to express and experience feelings. Studies have shown a great reduction of depressive symptoms when CBT integrated emotional experiences (Auszra, Greenberg, & Herrmann, 2013; Holtforth et al., 2012).

Additionally, the National Health Service (NHS, 2019) argues that although cognitive-behavioral therapy recognizes the influence of early childhood events into one's core beliefs, it does not target these early experiences in therapy; instead, it tends to address the current problems and focuses on very specific issues. According to NHS, cognitive-behavioral therapy also emphasizes a person's ability to change their maladaptive cognitions and seems to disregard the structural and systemic family factors which are known to impact significantly an individual's wellbeing. In trying to address the limitations of cognitive-behavioral therapy, some researchers developed some modern cognitive-behavioral therapeutic models that combine cognitive-behavioral therapy with other relevant interventions to enhance its efficacy (Scott, 2009). The new cognitive-behavioral therapies tend to focus on building a therapeutic relationship as well as incorporating emotional experiences in the treatment of psychological problems. DBT is one of those therapies that have been developed from cognitive-behavioral therapy.

While applying cognitive-behavioral therapy in treatment, Linehan (1993a) noticed a series of failed attempts to treat the chronically suicidal clients. In cognitive-behavioral therapy attempts to bring change were perceived as invalidations leading to clients' drop out or attacks to therapists. Teaching and reinforcement of new skills were extremely hard to practice in individual therapy sessions while still focusing on the treatment of current SBs (Dimeff & Linehan, 2001). Linehan, therefore, developed DBT in which unlike cognitive-behavioral therapy, a therapeutic
relationship between a client and therapist is deemed crucial and is characterized by acceptance (Perseius, Öjehagen, Ekdahl, Åsberg, & Samuelsson, 2003). DBT provided a more viable form of cognitive-behavioral therapy for SB incorporating the important aspects that seemed to miss in cognitive-behavioral therapy.

2.6.2 Dialectical behavior therapy (DBT) in treatment of SB

Dialectical behavior therapy (DBT) is a psychotherapeutic treatment for SB. It was developed by Marsha Linehan- a practicing psychologist, at the University of Washington from around 1970 to 1980 (Linehan, 1993a). DBT was originally developed as a treatment for highly suicidal persons, and secondarily for suicidal persons with borderline personality disorder (BPD) (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991). DBT is among the first empirically-supported "next-generation" CBT approaches (Lynch, Trost, Salsman, & Linehan, 2007). It is grounded on the ideologies of Linehan’s biosocial theory which conceptualizes SB as emanating from difficulties with emotional regulation. A biological inclination to emotional sensitivity interacts with childhood invalidating experiences resulting in a neurobiological malfunction that leads to insufficient skills for managing the emotional system (Crowell et al., 2009; Linehan, 1993a). Thus, according to Linehan (1993a), the main aim of DBT is to improve emotion regulation skills by teaching clients how to regulate their emotional responses actively.

The DBT approach incorporates varied skills that are derived from behavioral and cognitive therapy, dialectical philosophy, mindfulness practice, and biosocial theories (Linehan, 1993b). DBT is therefore a comprehensive cognitive-behavioral therapy, which has been successfully subjected to intensive testing with suicidal patients. Linehan (1993a) expanded and enhanced cognitive-behavioral therapy by incorporating elements that addressed difficulties in emotional dysregulation and self-
destructive behaviors among suicidal BPD patients. Thus, the goal of DBT is to increase adaptive skills and decrease maladaptive skills to help clients manage overwhelming emotions. In DBT, emotions are viewed as brief, complex, and involuntary-patterned responses to external and internal stimuli (Tooby & Cosmides, 1990).

The term dialectic refers to a "philosophical mode of argument", hence, dialectical is a method of argumentation, where the truth is derived from disclosing contradicting opinions (Walton, 1998). The fundamental dialectical element in DBT entails balancing acceptance of reality and changing undesirable aspects that are changeable. According to Linehan (1993b), while patients do need to change from maladaptive behavior, they also need some validation in some aspects of their behaviors. By validating their behavior, the therapist seeks to assure them that their behavior makes sense in some way since it has a role to play. For instance, a negative behavior may help reduce emotional sensitivity which is highly desirable; however, the behavior is only a short-term means of regulating emotions. This dialectical strategy makes DBT a more appropriate therapy for suicidal clients who may be stigmatized since change strategies are implemented without an impression of rejection (Lynch et al., 2007).

A researcher, Linehan (1993a) noted that cognitive-behavioral therapy skills used in suicidal persons failed in some clients since they were predominantly change-oriented. According to Linehan, using change constantly underrates a patient's level of distress and therefore it may lead to therapy drop out due to frustration (Linehan, 1993a). Therefore, incorporating the acceptance elements into therapy retained clients more since they felt understood. It also motivated them towards pain tolerance and
they felt better about their relationships with their therapists. This led to greater and faster improvement from their maladaptive behaviors (Linehan, 1993a).

Concerning the DBT procedures, in the first step, a client is taught mindfulness skills. These entail the ability to be aware of one's emotions, thoughts, physical sensations, and actions in the here and now without self-judgment but, upholding radical acceptance (Linehan, 1993b). In the second step, distress tolerance skills are facilitated to adopt healthier coping mechanisms when faced with painful situations (Mooshine, 2008). These incorporate distracting, relaxation, and coping skills. The third step focuses on skills for regulating emotions. The skills bring an awareness of what patients feel and help them observe their every emotion without feeling overwhelmed. The goal is to modulate one's affect in a non-reactive and non-destructive way. In the final step, interpersonal effectiveness skills are taught. Clients learn new ways of setting limits, expressing themselves, and negotiating solutions without harming interpersonal relationships (Mooshine, 2008).

Dialectical behavior therapy is guided by the assumption that clients are trying their best to improve their conditions. Hence, the clients need to be equipped with emotional regulation and interpersonal effectiveness change-oriented skills as well as the acceptance-oriented skills for mindfulness and distress tolerance (Linehan, 1999). In DBT, social connectedness is promoted through interpersonal effectiveness skills and mindfulness which helps prevent impulsive behavior by promoting focused wise decision-making skills (Linehan et al., 2006). These skills are crucial since they address the areas of deficiency in suicidal patients. They help these persons to be more rational when faced with overwhelming painful emotions so that they can adopt healthy solutions.
Additionally, the DBT model is geared towards treating interpersonal conflict, impulsivity, and self-dysregulation as well as cognitive and emotional dysregulation which are common problems among suicidal patients (Miller, Rathus, & Linehan, 2007). It strengthens a client's ability to bear distress instead of overreacting or acting impulsively. DBT is effective in treating a wide range of other disorders that result from difficulties in regulating emotions such as; DD, substance dependence, eating disorders, PTSD, and many other destructive behavioral patterns that entail emotional dysregulation (Bohus et al., 2013; Heller et al., 2009; Lynch et al., 2007; McCredie, Quinn, & Covington, 2017; Safer & Jo, 2010; Rathus & Miller, 2002; Salsman & Arthur, 2012; Telch, Agras, & Linehan, 2000; Woodberry & Popenoe, 2008).

Regarding the efficacy of DBT, studies have found statistically significant improvements in the randomized samples which were exposed to DBT compared to those that were not (Harned et al., 2008; James, Taylor, Winmill, & Alfoadari, 2008; Koons et al., 2001; Linehan et al., 1999, Linehan et al., 2002; McCauley et al., 2018; McMain, Korman, & Dimeff, 2001; Rathus & Miller, 2002; Sasman, 2011; Stanley, Brodsky, Nelson, & Dulu, 2007; Verheul et al., 2003; Wilkinson, 2018; Woodberry & Popenoe, 2008). DBT was found to be effective in reducing the frequency and severity of several psychiatric problems including; self-harm, suicidality, anger, anxiety, and depression. It also led to improved treatment and subsequently reduced the duration of hospitalization (Koons et al., 2001; Linehan et al., 1999; MacPherson, Cheavens & Fristad, 2013).

When the efficacy of DBT was assessed in a systematic review study using five randomized controlled trials (RCTs), it improved the clients' compliance and was proved to be efficacious in stabilizing and reducing SB (Panos, Jackson, Hasan, & Panos, 2014). In a study at a health center in the USA, with 28 suicidal adolescents
aged between 12-18 years old, DBT was found to be effective in reducing self-injurious behavior and suicide attempts (Santamarina et al., 2017). According to Lynch et al., (2006) DBT is the most effective psychotherapeutic treatment for SBs since it facilitates impulse-control. Further, Lynch et al., (2007) established that DBT was well-received by clients and had a high rate of treatment adherence.

When tested on adolescents and adults with SB, DBT has produced significantly greater improvements on SB as well as mood disorders, anger outbursts, BPD, externalizing disorders, eating disorders, and problem behaviors across different settings (James et al., 2008; Katz, Cox, Gunasekara, & Miller, 2004; Koons et al., 2006; Linehan, Heard, & Armstrong, 1993; MacPherson et al., 2013; Rathus & Miller, 2002; Salsman, 2011; Verheul et al., 2003; Woodberry & Popenoe, 2008). The sustainability of DBT effects has also been ascertained in longitudinal studies where it was observed that the effects continued to endure long after therapy discontinuation (Linehan et al., 2006; Van den et al., 2005). The efficacy and sustainability of DBT in the treatment of SB and its comorbid mental disorders have therefore been established globally and regionally.

2.6.3 Prolonged exposure (PE) therapy for treatment of PTSD

Prolonged exposure therapy (PE) is an intervention for PTSD that was originally developed by Edna Foa and Barbara Rothbaum in 1998. PE facilitates a healthy way of processing emotions to modify the maladaptive cognitions associated with the traumatic experience. Since not all exposure to traumatic events leads to PTSD, there could be either a specific pattern of emotional processing that causes a traumatized person to develop PTSD or development of PTSD could induce that pattern of emotional processing (Eftekhari, Zoellner, & Vigil, 2009).
According to Foa, Hembree, and Rothbaum (2007), maladaptive processing of emotions is a key factor in the development of PTSD. Thus, emotional processing theory (EPT) provides a framework for understanding exposure therapy through which the maladaptive symptoms of anxiety disorders are reduced (Foa et al., 2007). EPT explains the development, implication, and usage of the exposure intervention for anxiety disorders (Foa & Kozak, 1986). The EPT explains that the major problem in PTSD arises from cognitive aspects relating to fear. Fear is viewed as a memory program aiding in escape from danger. In his conceptualization of fear as an escape strategy, Lang (1977) came up with the concept of ‘fear structure’ which refers to a set of propositions about stimulus-response and the meaning stored in memory.

According to Lang (1977), the fear structure is usually activated by inputs that match up parts of the structure and consequently activate diverse parts of the structure. Fear structures are maladaptive cognitive networks that get activated in times of anxiety and fear. Although the fear structure is a normal response to actual fear, it raises concern when the information in the structure represents the world inaccurately (Foa & Kozak, 1986). This happens when the avoidance and physiological reactions that characterize PTSD are triggered by harmless stimuli. When the fear responses become inappropriate, they are likely to hinder proper functioning in an individual’s life. Such responses are activated by maladaptive fear structures. The two major maladaptive beliefs arising from pathological fear structures are that distress will escalate to an extent where it is unmanageable and that the feared stimulus will cause harm.

Emotional processing theory holds that chronic avoidance and dissociative behaviors often leave the maladaptive schemas in place (Baker et al., 2010). Hence, to restructure these schemas EPT proposes the use of exposure interventions that help
modify the relationship between fear stimulus and avoidance behavior. To intervene, the fear-relevant information needs to be retrieved by activating the fear memory since the fear structure has to be availed for it to be modified. After the activation of the fear structure, new information is put in. This entails integrating new cognitive and affective material into the information structure that has been evoked. The formation of new memory must entail incorporation with new information whose components are incompatible with those of the fear structure (Foa & Kozak, 1986). The new information leads to an emotional change that entails the reduction of anxiety.

Posttraumatic stress disorder results from the expansion of the trauma memory structure which is stored as a fear memory and aids in escaping danger. When the trauma memory expands, it incorporates varied negative dysfunctional thoughts about the trauma (Foa et al., 2007). This makes trauma survivors view themselves as incompetent and their world as totally dangerous (Foa & Riggs, 1993). These negative cognitions which may be enhanced by some social-cultural factors lead to the progression of PTSD. When this process is prolonged it confirms the fear structure (Baker et al., 2010). Alteration in the negative cognition is necessary because anxiety disorders lead to avoidance behaviors. The avoidance inhibits a person's contact with anxiety hence, they lack a way of disconfirming the negative cognition.

Prolonged exposure therapy aims at modifying the memory structure that may have led to PTSD following trauma. According to Abramowitz (2013), PE facilitates extinction reduction through the use of classical conditioning concepts, where the conditioned fear or anxiety response is associated with the feared stimulus. In PE the traumatic event is re-experienced by facilitating its remembrance and engaging with it, instead of avoiding its triggers (Foa et al., 2007). PE, therefore, brings positive
effects on the PTSD symptoms by activating the fear structure, after which, the information that is incompatible with it is incorporated. This results in the creation of a non-fear structure that either replaces or competes with the original fear structure (Foa & McNally, 1996).

Emotional processing theory postulates that PTSD arises from the failure to adequately process the traumatic memory. Hence, the exposure interventions should provoke sufficient emotional engagement for the fear structure to be accessed, after which the fear structure is modified through new learning (Foa et al., 2007). The goal of PE therapy for PTSD is therefore to promote emotional processing. Exposing a PTSD patient to the feared stimuli activates the relevant fear structure and at the same time, it provides realistic information to disconfirm any maladaptive beliefs about the feared consequences (Foa & Rothbaum, 1998). According to Foa and McNally (1996), exposures create new and competing associations instead of altering them to strengthen the non-pathological association.

Exposure therapies use a variety of interventions such as; gradual and flooding exposures, brief and prolonged therapies, exposure with and without various cognitive and somatic coping strategies as well as in vivo, interceptive or imaginal exposure (Meuret et al., 2012). PE uses imaginal and in vivo exposure to trauma memories and the feared situations (Foa et al., 2007). The PE therapist facilitates the process of bringing the fear structure into the patient's mind, then the trauma-related thoughts and images are confronted. Afterward, information is provided to help the patient learn that what they were afraid of is not likely to happen. Thus, they get to confirm that they can tolerate the feared situations without anything bad happening to them.

During PE therapy patients receive psychoeducation on common reactions to trauma that characterize PTSD. The patients then learn relaxation techniques and are
retrained on breathing techniques. Afterwards, the imaginal and in vivo exposure are facilitated which entail repeated imagination or real-life experience of the situations or objects that a patient avoids. These are usually things or situations that are not likely to pose a threat. The trauma memories are revisited and recounted to facilitate their processing and to reduce their emotional impact (Foa et al., 2007).

Prolonged exposure therapy has been evaluated in several studies and has proved to be an efficacious intervention for fear and anxiety disorders (Bisson et al., 2007; Hofmann & Smits, 2008; Mitte, 2005; Norton & Price, 2007). It has also been verified in a variety of trauma populations (Powers et al., 2010). Similarly, PE has proved to be an effective treatment for PTSD (Foa & Jaycox, 1999; Foa & Cahill, 2001; Foa, Huppert, & Cahill, 2006; Grubaugh et al., 2017; Hendriks, de Kleine, Broekman, Hendriks, & van Minnen, 2018). Among suicidal persons, PE targets PTSD and it is combined with DBT which targets SB.

2.6.4 Efficaciousness of DBT PE in treatment of SB, DD, and PTSD

A combined Dialectical Behavioral Therapy and Prolonged Exposure therapy (DBT PE) was developed by Melanie Harned in the year 2005. It was designed specifically for the treatment of PTSD among suicidal clients with multiple psychosocial problems who were termed as high-risk patients (Harned, 2019). The DBT PE protocol is grounded on the works of both Linehan for DBT and Foa, Hembree and Rothbaum, for prolonged exposure (PE) therapy (Foa et al., 2007; Linehan, 1993a).

The interest in developing DBT PE arose from Harned's observation that most of the suicidal patients exhibiting PTSD were usually excluded from PTSD treatments for safety purposes (Bradley, Greene, Russ, Dutra, & Westen, 2005). The DBT PE protocol was therefore intended for this clientele since their exclusion from treatment...
increased the risk for SB due to the intensity of PTSD symptoms and was likely to interfere with recovery. The integrated DBT PE forms a comprehensive modality for a wide range of symptoms, aimed at facilitating recovery in the traumatized clients, hence, helping them find sense in living (Harned et al., 2012).

Considering that 66% of PTSD patients present with comorbid disorders and around 30% are suicidal (Harned, 2017), a comprehensive intervention is inevitable. Effective treatment for comorbid conditions requires combining empirically verified approaches to address the diverse problems focusing on their association (Harned, 2017; Rizvi & Harned, 2013). The DBT PE approach bridges this gap since it is focused on bringing emotional stability to the high-risk PTSD patients in preparation for the trauma-focused PTSD treatment (Harned et al., 2013). The protocol is aimed at helping clients who are using DBT to stop evasions and instead process trauma effectively by confronting the trauma-related cognitions and situations (Harned et al., 2012).

The DBT PE as conceptualized by Harned follows three stages; in the first stage, the clients learn behavioral control and skills acquisition, the second stage entails emotional processing of trauma and in the final stage, clients are equipped to build a life without the severe symptoms of PTSD. Stage one, which uses DBT skills exclusively is intended to help clients achieve control over severe and life-threatening behaviors. This is done by facilitating enhancement of the client's mindfulness, training on the regulation of emotions as well as equipping them with skills for interpersonal effectiveness and tolerance of distress. Stage two is focused on treating PTSD while clients continue to receive DBT. In stage three, the standard DBT is used to address any other significant problems that are of concern in therapy (Harned &
Linehan, 2008). The skills could be geared towards improving interpersonal relationships or enhancing productivity at school or work.

Since the efficacy of DBT had been established as well as that of PE (Foa et al., 2001, 2007; Linehan et al., 2002; McMain, et al., 2001; Verheul et al., 2003), Harned focused on integrating both DBT and PE in the treatment of suicidality and PTSD. DBT PE has been subjected to rigorous testing in randomized controlled trials and has proven to be efficacious (Harned et al., 2012: Harned et al., 2014). DBT PE was found to be more efficacious in comparison to DBT alone for the treatment of suicidal patients who had PTSD (Harned, et al., 2014). The study by Harned et al. (2014), which was carried out to test the efficacy of DBT in comparison to an integrated DBT PE approach, showed that DBT PE was successful in effecting greater and steady progress in PTSD as well as in self-injury and it yielded a doubling effect on the remission rate. DBT PE works by effecting positive change on the suicidal, depressed, and trauma-related cognitions as well as facilitating social adjustment (Harned et al., 2014).

In a study where Harned et al. (2012) treated suicidal PTSD women using DBT PE intervention, 71.4% of the participants recovered from PTSD at post-treatment. Specifically, significant improvements were noted on suicidal ideation, guilt cognitions, anxiety, dissociation, depression, social regulation, and shame related to trauma. This implies that since DBT PE targets PTSD directly, it leads to higher improvements in PTSD symptoms and its comorbid problems (Schmidt & Harned, 2016). Therefore, the addition of PE in DBT made it a viable intervention for PTSD patients who seemed unstable due to suicidal tendencies.

In their research, Harned et al. (2013) discovered that majority (73.8%), of suicidal patients with PTSD, preferred treatment with DBT PE to DBT or PE alone,
which indicates a great need for relief from both PTSD and SB. In yet another study, similar preferences were noted where the majority of participants who had undergone traumatic experiences (74% to 90%) preferred to be treated using a combination of DBT and PE techniques compared to either DBT or PE alone (Schmidt & Harned, 2016). Thus, implying the need for the integrated treatment model targeting multiple disorders such as PTSD, DD, and SB which tend to be comorbid.

In a case study of clients with comorbid BPD and PTSD, combining DBT with PE demonstrated its efficacy in the management of chronic dissociation tendencies and self-harm behavior. The results indicated significant progress in the treatment of PTSD as well as improvements in the reduction of SB (Granato, Wilks, Miga, Korslund, & Linehan, 2015b). Improvement of PTSD was related to the subsequent reduction in its comorbid suicidal ideation, depressive symptoms, and borderline symptoms as well as enhancement of social adaptability, and health-related quality of life (Harned, Gallop, & Valenstein-Mah, 2016; Harned, Wilks, Schmidt, & Coyle, 2018). The study by Harned et al. (2014), evidenced that DBT PE intervention was practicable, acceptable, and safe to administer. DBT PE also proved to be efficacious in a pilot study among adolescents with PTSD and SB (Kaplan, Aguirre, & Galen, 2015). Although many studies have established the efficacy of DBT PE among diverse suicidal clients with PTSD, the researcher did not find a study in Kenya that sought to test the efficacy of DBT PE, hence, the need for this study.

Figure 2.3 shows the conceptual framework that identifies the researcher's worldviews about the research topic, thus delineating the assumptions and preconceptions about the areas being studied (Lacey, 2010). A conceptual framework presents in narrative or graphical form the related concepts or variables for a broader understanding of the phenomenon under study (Imenda, 2014).
2.7 Conceptual Framework

Effect Modifiers
- Gender
- Age

Independent Variables
DBT PE
- Dialectical behavioral therapy (DBT)
- Prolonged exposure therapy (PE)

Confounding Variables
- Family factors
- School factors
- Economic factors
- Social-Cultural factors

Dependent Variables
Reduction of:
- Suicidal behaviors (SB)
- Depressive disorders
- Posttraumatic stress disorders (PTSD)

Figure 2.3: Conceptual Framework
Source: Researcher (2019)
2.8 Discussion

In figure 2.3 the DBT and PE therapies form the independent variables also referred to as the exposure or predictor variables since they are the treatments to be tested. Independent variables are the constructs that cause, influence, or affect the outcome. Dependent variables, on the other hand, are the outcomes from the influence of the independent variables (Creswell, 2009). A combined DBT PE therapy was administered on the participants with the anticipation that it would evoke an effect, which was likely to be a reduction of their SB, DD, and PTSD. Studies have proved the effectiveness of DBT PE therapy in the reduction of SB, DD, and PTSD (Granato et al., 2015; Harned et al., 2016; Harned et al., 2018). The effect of modifiers or moderator variables, which includes the age of the participants and their gender were likely to affect change on the outcome. This implies that the magnitude of the effect of DBT and PE therapies on SB, DD, and PTSD levels on participants was likely to differ depending on their age and gender. These groups of participants may respond in varied ways to the exposure. For instance, females of a particular age may respond differently from males of a particular age.

The confounding variables included the participants' family factors, school factors, economic status, and social-cultural factors. According to Skelly, Dettori, and Brodt (2012), confounding variables affect the outcome since they tend to compete with the independent variable. However, the researcher controlled the confounders both at the design stage and analytical stages as recommended by Aschengrau and Seage (2009). At the design stage, the confounders were minimized by restriction of respondents to only those in a similar environment hence, they were likely to present with the same levels of the confounding factors. Since the respondents were from urban informal settlements, they were likely to present with similar economic, family,
and social-cultural factors. Their schools were also similar since they were day-mixed secondary schools in a similar environment and so school factors were minimized. At the analytical stage, regression models were used to control the confounders. Due to the restrictions on the features of respondents and the use of multivariate analysis, the effectiveness of the exposure was therefore unlikely to be influenced by the confounders.

2.9 Summary

In this chapter CBT and biosocial theories have been used to conceptualize the development of SB and its relation to DD and PTSD. Relevant literature on SB prevalence, severity, and the risk factors for suicidality as well as the association between DD and PTSD have been expounded on as per the study objectives. Discussed also are the psychotherapeutic interventions under study, DBT and PE, and their efficacy. The literature reviewed established that indeed mental disorders, and in particular DD and PTSD are associated and are high-risk factors for suicidality and thus need to be targeted in SB treatment. The literature further depicts DBT PE as a viable intervention for SB comorbid PTSD. The next chapter outlines the research methodology.
CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology for the study. The chapter describes the research design and its relevance in this study, the study site, and the target population. The sample size has been calculated and the sampling procedure is explained. Discussed also is the inclusion and exclusion criteria, the data collection instruments, procedures, and ways in which the instruments were pre-tested. Data safety and data analysis plans are outlined and finally, the ethical aspects are considered.

3.2 Research Design

A research design is a general strategy used to bring together the various constituents of the study logically and coherently (Trochim & Donnelly, 2006). The current study employed a quasi-experimental design in the collection and analysis of quantitative data as per the study objectives. The quasi-experimental design was instrumental in facilitating the achievement of the study's purpose, which was to establish the efficacy of DBT PE intervention in the reduction of SB among high school students presenting with PTSD and DD. The quasi-experimental design seeks to assess the influence of a specific intervention in a defined outcome (Creswell, 2014). In this study, the effectiveness of DBT PE intervention was assessed by administering it to some particular study group (experimental group) and withholding it from the other study group (control group) and then determining how the different groups scored on their outcome.

A quasi-experimental design was deemed as more appropriate for this study because, unlike the pure experimental design, it allows a higher degree of control and
manipulation of variables in determining the cause-effect relationship (Mugenda, 2008). Moreover, it was preferable since in the quasi-experimental design the experimental and control groups are not fully randomized during the assignment (Shadish, Cook, & Campell, 2002). The design enables the researcher to follow a systematic change in condition to determine the effects of the treatment (Kombo & Tromp, 2006). Thus, the researcher followed the systematic change of the disorders from pre-test or baseline assessment to the post-test assessment on both experimental and control groups.

3.3 Study Site

The study was conducted in Nairobi County which is the capital city of Kenya. Nairobi County was more preferable since it offers a cosmopolitan population with diverse cultural backgrounds. The multicultural diversity of the Nairobi County population is likely to present varied expressions of SB, and a wide range of risk factors leading to diverse responses to the intervention. Their response to the intervention can therefore be generalized to other high school students of a similar cultural and socioeconomic status in the Kenyan population.

Nairobi County is one of the 47 counties in Kenya, which was established under the constitution of Kenya 2010. Nairobi County hosts the Nairobi city, which is Kenya's capital and the most populated city in East Africa. It has a population of approximately 3.5 million. The Nairobi county is composed of 17 Administrative Sub-Counties including Kibra, Langata, Dagoretti North, Dagoretti South, Westlands, Ruaraka, Kasarani, Roysambu, Makadara, Starehe, Kamukunji, Mathare Embakasi South, Embakasi North, Embakasi Central, Embakasi East, and Embakasi West.

According to the Republic of Kenya, MoE (2016), Nairobi County had a total of 235 secondary/high schools, comprising 158 private high schools and 77 public
The high schools in Nairobi County had a total enrollment of 69,934 students; 44,981 in public schools and 24,953 in private schools. The secondary schools in Nairobi County have varied residential status, with some schools taking students on a boarding basis, others as day scholars while others have combined both boarding and day status. The public secondary boarding schools were 38, while day schools were 26 and both day and boarding public schools were 13. The private boarding secondary schools were 105, while day schools were 13, and both day and boarding private schools 29. The secondary schools are further categorized according to the gender of the students which entail; boys or girls separately and mixed schools. The public boys' schools were 21, girls' schools 22 and mixed schools 34; whereas, the private boys' schools were 11, girls 14 and mixed 122 (Republic of Kenya, Ministry of Education. 2016). This study was conducted in four mixed day high schools.

The high schools from which the study population was drawn are located in informal settlements of Kibera, Kawagware, and Kangemi which are in the Kibra, Dagoretti North, and Westlands sub-counties. Kibra Sub-county had a total of 19 private high schools and 7 public high schools, whereas Dagoretti North Sub-county had a total of 31 private high schools and 9 public high schools (MoE, Sub-County Office, personal communication, July, 2019). In the current study, two public high schools and two private high schools were sampled. In Kenya, public high schools are categorized into National schools, extra-County schools, and County and sub-County schools. The sampled public secondary schools were in the category of extra-County schools. The extra-County schools rank second after the national schools in the admission of students and they usually have a high population.
There is a wide range of private secondary schools in Kenya, which enrolls students according to their diverse academic and financial capabilities. According to Kibera and Kimokoti (2007), private schools in Kenya are categorized into high-cost, average-cost, and low-cost private schools. The two private schools from which the study population was drawn were in the category of low-cost private secondary schools located in the informal settlements of Kibra, Kawangare, and Kangemi. The four schools presented similar characteristics in that they were all mixed-day secondary schools located in the informal settlements of Nairobi County.

3.4 Target Population

The targeted population was the high school students aged between 14-22 years from a low socioeconomic background, in Nairobi County. The study population was drawn from four day-mixed high schools in Nairobi County. The four high schools from which the study sample was drawn had the following population: School A, the extra-County high school in Kibra had 867 students comprising 425 girls and 442 boys whereas, school C, the extra-County high school in Kawagware had a total of 910 students, 480 of which were girls and 430 boys. School B, the private high school in Kibra had 603 students consisting of 331 girls and 272 boys, and school D, the private high school in Kangemi had 136 students; 75 girls and 61 boys.

The schools were purposively selected due to their location in the informal settlements of Nairobi. Most of the students in the mixed day-schools located in informal settlements are from a low socioeconomic background. Such background is characterized by overcrowded housing, lack of basic needs, trauma exposure, and insecurity (African Population and Health Research Center [APHRC], 2014; Harder, Mutiso, Khasakhala, Burke, & Ndeitei, 2012; Onyango & Tostensen, 2015). The
student population in this background are likely to have witnessed or experienced trauma.

The majority of students in these schools were aged between 14 to 19 years with a few in the age bracket of 20 to 22 years. These ages are highly associated with SB (WHO, 2019). The adolescents' populations from a low socioeconomic background may have experienced trauma and are disturbed by their disadvantaged situation. This is because being in the adolescence stage of development, they are developing biologically, cognitively, socially, and emotionally (Curtis, 2015). They are therefore likely to suffer great psychological distress due to deficiency of basic needs and insecurity hence, are at a high risk of suffering from PTSD and DD.

This population was targeted because it represents a substantial number of the low-income Kenyan population considering that Kenya is a developing country with 36.1% of its population living below the poverty line and about 40% unemployed (World Bank, 2019; World Fact-book, 2019). This study population was therefore purposively selected since it consisted of adolescents who are at high risk of developing mental disorders leading to SB.

3.5 Sample Size

A sample is a subset of the study population whereas, the sample size refers to the actual number of the participants to be involved in a study (Kadam & Bhalerao, 2010). The sample size determination is a crucial aspect in a study that aims at making inferences about the entire population from a selected sample (Singh & Masuku, 2014). The sample size for the quasi-experimental study was calculated using the formula presented in Fleiss, Levin, and Paik (2003) for calculating sample size when comparing two binomial distributions (experimental & control groups). The sample size was calculated at the confidence level of 95%, a significance level of
0.05, and the power of 80%. The estimated proportion in arm 2 (P1) was based on a 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). The formula and procedure for sample size calculation are as follows:

\[ n = \frac{(Z_{1-\alpha} \sqrt{(r +1) \hat{P}Q} + Z_{1-\beta} \sqrt{(r P_1 Q_1 + P_2 Q_2)})^2}{(r)^2} \]

Where:

- \( n \) = The desired sample size
- \( \alpha \) = Significant level (Type 1 error) – 0.05
- \( \beta \) = Power of the test (Type II error) – 0.20
- \( Z_{1-\alpha} \) = Standard normal deviate at 95% CI (1.64)
- \( Z_{1-\beta} \) = Standard normal deviate at 80% Power CI (1.28)
- \( P_1 \) = Estimated proportion in arm 2 = 0.28 (27.9%).
- \( P_2 \) = Estimated proportion in arm 1 = 0.24 (24.1%).
- \( r \) = Proposed effect size at 80% (\( P_1 - P_0 \)) = 0.04
- \( H_0 : P = P_1 \)
- \( H_{\alpha} : P \neq P_1 \)
- \( \hat{\delta} = P_1 - P_2 \)
- \( P(\text{reject } H_0 \mid H_0 \text{ is true with any } P \neq P_1) \leq \alpha \)
- \( P(\text{reject } H_0 \mid H_0 \text{ is false with any } r \leq 1-\beta \)

\[ n = \frac{(1.64 \sqrt{(0.04 + 1) 0.05} + 1.28 \sqrt{0.04 \times 0.28 \times 0.20 + 0.24 \times 0.08})^2}{(0.04)^2} \]

\[ 90 \]
Using this formula, the minimum sample size achieved was 80.5. However, due to the risk of attrition, the sample size was adjusted upward by 30%, which is 24. Therefore, the total sample size calculated accounting for the attrition rate was 105 subjects. Varied sample sizes have been used in similar studies. A study in a college student population, testing the efficacy of DBT used a sample of 63 students aged between 18 to 25 years who were suicidal at baseline (Pistorello et al., 2012). In a Jordanian University, a sample of 84 students with DD was used to test the effectiveness of CBT (Hamdan-Mansour, Puskar, & Bandak, 2009).

Samples sizes that are closer to the one suggested in this study have been documented in similar studies within clinical and non-clinical settings. In testing the efficacy of DBT, Linehan et al. (2006) used a sample of 101 suicidal females. Panepinto, Uschold, Olandese, and Linn (2015) used 110 university students, while in Nigeria, a study sampled 115 youths in a clinical setting (Ojuade et al., 2018a). In this study, a sample size of 105 students was deemed appropriate since it was derived from statistical calculations (Fleiss, Levin, & Paik, 2003), and it also compares favorably with the average sample sizes used in similar studies.

3.6 Sampling Techniques
Sampling is the process of choosing a few participants from the larger population for purposes of generalizing the occurrence of an unknown outcome or fact regarding the entire group (Kumar, 2011). Since the research used a quasi-experimental design, purposive sampling was employed. Purposive sampling entails a deliberate selection of particular units of study which best represent the preferred characteristic in the population (Kothari, 2004). The four secondary schools were purposively sampled due to their location at the core of the informal settlements which are a good representation of the high-risk adolescents from the low socioeconomic background.

In determining which informal settlement would constitute the experimental and the control group the researcher used the simple random sampling technique, where a coin was tossed. Simple random sampling is a probability form of sampling where each group has an equal chance of being selected thus, guaranteeing external validity. Probability sampling makes the sampled elements to be highly representative of the larger population (Thompson, 2012); hence, results from the sampled high school students can be generalized to other adolescents from a low socioeconomic background in Nairobi County. The students from the two high schools (A and B) in Kibra formed the experimental group while, those in schools (C and D), from Kawagware and Kangemi informal settlements, formed the control groups. Kawangware slum which joins with Kangemi is approximately 11.4 kilometers away from Kibera slums and in between are the suburb areas of Lavington and Kilimani (Google map, 2020). Having a substantial distance from each other was necessary to avoid the herding effect.

Purposive sampling was used to deliberately select the students who after screening met the diagnostic criteria for SB, DD, and PTSD. To determine their levels
of the disorders, the researcher used the standardized psychological assessment tools; suicide behavior questionnaire-revised (SBQ-R), the PTSD Checklist for DSM-5 (PCL-5), and Beck's depression inventory second edition (BDI-II). In recruiting, the researcher screened all the students (n=1,040) who assented and were available so as to determine the prevalence and draw out those who had the study disorders. From their assessment results, those who had SB, DD, and PTSD were purposively recruited for the quasi-experimental study. The number of study respondents and participants in their school categories, treatment groups, and gender are presented in the sampling frame Table 3.1.

### Table 3.1: Sampling Frame

<table>
<thead>
<tr>
<th>Selected Schools</th>
<th>Respondents at Baseline</th>
<th>Study type</th>
<th>Study Sample</th>
<th>Sampled Girls</th>
<th>Sampled Boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-Extra county</td>
<td>306</td>
<td>Experimental</td>
<td>35</td>
<td>21</td>
<td>14</td>
</tr>
<tr>
<td>B-Private</td>
<td>146</td>
<td>Experimental</td>
<td>18</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>C-Extra county</td>
<td>490</td>
<td>Control</td>
<td>40</td>
<td>27</td>
<td>13</td>
</tr>
<tr>
<td>D- Private</td>
<td>98</td>
<td>Control</td>
<td>11</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>1040</td>
<td></td>
<td>104</td>
<td>66</td>
<td>38</td>
</tr>
</tbody>
</table>

The respondents (n=1,040) who participated in the baseline assessment were from schools, A (n=306), B (n=146), C (n=490), and D (n=98). From the assessment results, a sample (n=104) of students who met the inclusion criteria by having clinically significant levels of SB, DD, and PTSD were assigned the experimental (n=53) and control groups (n=51) according to their schools. The experimental group comprised of students from school A (n=35) and B (n=18), whereas those of the control group were from school C (n=40) and D (n=11). The last two columns indicate the distribution per gender from each school.

#### 3.6.1 Inclusion and exclusion criteria

The study included only those respondents who were high school students in the four sampled high schools. They were aged 14 to 22 years old; those who were
not in this age bracket were excluded. The included respondents were only those students who were screened with a sociodemographic questionnaire, SBQ-R, PCL-5, and BDI-II at baseline. All the respondents who were screened at baseline were included in the determination of the SB, DD, and PTSD prevalence as well as the SB risk factors. Those who were found to have attained the clinically significant levels of SB, PTSD, and DD were included in the study groups for the quasi-experimental study, which was the main objective of the study. None of the students had psychotic symptoms and therefore they were all deemed psychologically stable and healthy enough to engage in the study procedures.

The researcher informed the respondents about the study purpose and procedures before requesting for the informed consent of those aged above 18 and the assent for those aged below 18. Only the respondents who gave their informed consent or assent were assessed. In the quasi-experimental group, the participants who could not continue with either the therapy or post-test assessments due to school absenteeism, academic pressure, or other reasons were excluded. According to Mose (2017), Kenyan schools use English as the instructional language. Therefore, the selected participants were all able to understand, read, and write in English whose competence was necessary for responding to the self-administered questionnaires. Anyone who fell short of these criteria was excluded from the study.

3.7 Data Collection Instruments

The data collection tools used for the study were a researcher-developed sociodemographic questionnaire and three standardized psychological assessment tools. The standardized tools included; the Suicide Behavior Questionnaire-Revised (SBQ-R), which was used in the screening for suicidal tendencies, the PTSD Checklist for DSM-5 (PCL-5) assessed PTSD and Beck's Depression Inventory
second edition (BDI-II), assessed the levels of DD and also confirmed the suicidal
tendencies.

The sociodemographic questionnaire had two parts that were used to capture
some specific characteristics of the participants. The first part included variables such
as; age, gender, religion, year of study, caregiver, residential area, and family
socioeconomic status among others. In the second part, the respondents rated their
perceptions and experiences of the specified risk factors for suicidal tendencies on a
Likert scale.

3.7.1 Suicidal behaviors questionnaire-revised (SBQ-R)

The SBQ-R, which was developed by Osman et al. (2001) is a self-report
measure that uses four constructs in assessing SB. Each of the four items is designed
to tap into a different aspect of SB. The first item is used to assess the duration of
suicidality whereas, item two concerns the frequency at which SB occurred in a
period of 12 months. Item three is focused on the threat of attempting while the last
item evaluates the likelihood of future SB (Osman et al., 2001).

Upon development of SBQ-R, Osman et al. (2001) ascertained its validity and
reliability by measuring the risk for SB across the varied non-clinical and clinical
samples of psychiatric inpatient adolescents, high school students, and
undergraduates. The receiver operating characteristic (ROC) analysis showed the
most appropriate cutoff scores to be 7 for non-clinical samples, and 8 for clinical
samples. In this study, therefore, a cutoff score of 7 was considered since the study
targeted a non-clinical sample. Likewise, the study by Shakeri et al. (2015) on the
SBQ-R found out that a score of 7 and above in the non-clinical population implied a
significant risk of SB.
A study among students in Nigeria established the construct validity of SBQ-R, which was supported through significant positive correlations with the Hospital Anxiety and Depression Scale (HADS) and the General Health Questionnaire (GHQ-12). The internal consistency of Cronbach's alpha for the SBQ-R items was 0.80, thus proving its reliability (Aloba, Ojeleye, & Aloba, 2017).

3.7.2 PTSD checklist for DSM-5 (PCL-5)

The PCL-5 is a self-administered measure of PTSD that corresponds with DSM-5 criteria for PTSD. It has 20 items for assessing the existence and severity levels of PTSD symptoms in the past month. It has a Likert scale that ranges from 0-4, with items that are summed up and scored in a range of 0 to 80 (National Center for PTSD, 2017). The symptoms severity is defined in the DSM-5 diagnostic criterion where 'criterion A' refers to trauma exposure, 'criterion B' items in questions 1-5 show intrusion symptoms, 'Criterion C' on avoidance symptoms are in questions 6-7, 'criterion D' on affect symptoms are in questions 8-14 and 'Criterion E' symptoms are outlined in questions 15-20 (Murphy, Ross, Ashwick, Armour, & Busuttil, 2017). Considering the scores from each criterion, in this study, a score of 33-40 was categorized as mild, 40-50 moderate, 50-65 severe, and 65-80 extreme.

The PCL-5 has been tested and found to be valid and reliable (Armour et al., 2015; Blevins, Weathers, Davis, Witte, & Domino, 2015). In a study among veterans, PCL-5 had good internal consistency (α = .96), test-retest reliability (r = .84), as well as a convergent and discriminant validity (Bovin et al., 2016). When PCL-5 was tested among the adolescent population, it showed a good internal consistency (α = .91), test-retest reliability (r = .61), and concurrent, convergent, and discriminant validity with the Harvard Trauma Questionnaire (r = .69) (Ghazali & Chen, 2018). The study by Ghazali and Chen, further indicated that a PCL-5 cutoff score of 33 was
feasible as evidenced by the receiver operating characteristic curve and kappa coefficient analysis. PCL-5 was the most preferred tool for measuring PTSD among adolescents because it can be used for a variety of purposes. Apart from screening for PTSD, it is used in monitoring for symptom change during and after treatment to make provisional PTSD diagnosis.

3.7.3 Beck depression inventory second edition (BDI-II)

The BDI-II, which has been revised from BDI was developed by Beck in the year 1996 for evaluating the levels of depressive symptoms as defined by the American Psychiatric Association (American Psychiatric Association, 2000; Beck, Steer, Ball, & Ranieri, 1996). It has 21 items for assessing depression; the items are on a 4- rating scale, on a range of 0 to 3 except items 16 and 18, which have two ratings for parts 1, 2, and 3. The BDI-II scores are summed up from 0 to 63 with scores ranges indicating diverse levels of depression such as; 0-13 minimal, 14-16 mild, 17-20 borderline, 21-28 moderate, and 29-63 severe depression. A good BDI-II reliability has been established, with a coefficient alpha of .92 for the outpatient population (n = 500) and a coefficient alpha of .93 for the college students (n = 120) (Beck et al., 1996).

A good BDI-II reliability has been established in a sample of high school adolescents (N=414; 210 boys and 204 girls, aged 14–18 years), with a coefficient alpha coefficient (α=.92) and an average inter-item correlation of .35 (Osman, Barrios, Gutierrez, Williams, & Bailey, 2008). According to Beck, Steer, and Garbin (1988), BDI-II demonstrates good psychometric properties; hence, it is a valid measure of depression symptoms. Its psychometric evidence has also been established in the African population in Nigeria, Malawi, and Uganda (Adewuya, Ola, & Aloba, 2007; Kim et al., 2014; Tusiime, Bangsberg, & Wilson, 2015). Additionally, the
BDI-II contains an item (number 9) that can measure suicidality. It has four statements numbered 1 to 4. The validity of this item has been established (Beck et al., 1996). In an analysis, Brown et al. (2000) verified the predictive validity of the suicide question in that clients who scored two and above were 6.9 times more likely to commit suicide than those who scored below two.

The Three standardized tools were therefore deemed reliable and valid for the study population since they have been tested with adolescents and in an African population. The tools were also pretested in a similar population of high school students in an informal settlement and were deemed clear and culturally appropriate therefore no further modifications were needed. However, there were some clarifications that at the post-test assessment the duration of symptom assessment was in the past two weeks, which was necessary for accurate tracking of symptom change.

3.8 Data Collection Procedures

3.8.1 Participants' recruitment procedure

Research authorization

Following the proposal defense, the researcher sought relevant permission from Daystar University (the institution of study) to proceed with data collection. Ethical clearance from Daystar University Ethics Review Board (DU-ERB) and a research permit from NACOSTI were granted. Equipped with these permits, the researcher sought permission from the Ministry of education (MoE) in Nairobi County and also informed the relevant Sub-county directors of education. Further access authorization and consent for the student was approved by the school principals of the sampled schools. After access was granted, the researcher worked closely with the teacher counselors, who are the key informants. The key informants
are persons with specialized knowledge about the topic of study and are therefore of
great importance in discussing sensitive topics (McKenna & Main, 2013). In a high-
school set-up, the persons who are likely to be knowledgeable about mental disorders
are the teacher counselors. The students were informed about the study before giving
their assent. The first meeting with the sampled students entailed an introduction to
inform the prospective participants beforehand about the study and address the ethical
concerns.

Baseline assessment

The baseline assessment was conducted to determine which students met the
inclusion criteria for determining the efficacy of DBT PE. The baseline assessment
entailed the administration of the sociodemographic questionnaire and the
standardized tests to all the students present who gave their informed assent. Data
from the respondents (n=1040) who were assessed at baseline was used to determine
the prevalence of SB, DD, and PTSD as well as the risk factors for SB by comparing
the respondents with the disorders from those without the disorders. The participants
who meet the inclusion criteria for testing the efficacy of DBT PE as well as the
severity and association of the disorders were those with clinically significant levels
of SB, PTSD, and DD. These were purposively recruited depending on their
availability for the post-tests assessment and a sample (n=104) close to the calculated
sample size (n=105) was attained. They were divided into the experimental (n=53)
and control group (n=51).

Control and experimental groups

The participants in the Kibra Sub-county formed the experimental group and
those in Dagoretti-North and Westlands Sub-County formed the control group. The
participants in the experimental group received DBT PE therapy. Initially, it was offered once per week and later twice a week up to the completion of the 12 sessions in 8 weeks. The control group did not receive any treatment. The mid-line assessment was administered on both groups after the completion of DBT PE intervention by the
experimental group and the end-line assessment after 8 weeks following the mid-line
assessment. Thereafter, data was analyzed and the results presented. A graphical
representation of the logic sequence in which the study was carried out is presented in Figure 3.1

Figure 3.1: Study Process Flow Chart
Source: Author (2020)
As indicated in the study process flow chart (Figure 3.1), following the approval of the proposal by Daystar University, the researcher sought clearance from DU-ERB and NACOSTI. The researcher then sought research approval from the Ministry of Education (MoE) and the relevant school principals. Afterward, the students in the selected schools were informed about the study before requesting their informed assent or consent. The assessment tests were administered and those who met the diagnostic criteria for PTSD, DD, and SB formed the experimental and control groups. The participants from the experimental group received the DBT PE therapy while those in the control group did not receive any intervention. After the intervention, a midline assessment was carried out on both groups, and thereafter a follow-up end-line assessment. The data collected was then analyzed.

3.8.2 Intervention procedure using DBT PE

The model of treatment which was administered to the experimental group in this study is DBT PE. The control group did not receive the intervention. The 53 participants in the experimental group were divided into five therapy groups each comprising 10 to 11 participants and one group leader. The key facilitator was the researcher, who had been trained in DBT PE skills. The researcher was assisted by the research assistant who had also been trained in DBT PE skills. Each therapy group met once initially and then twice per week during school holidays for a two hours’ session. The therapy sessions were continued up to the completion of 12 sessions following the DBT PE manual.

A mid-line assessment was carried out on both the experimental and control groups eight weeks after the baseline assessment, following the completion of 12 therapy sessions by the experimental group. In the next eight weeks, no intervention was administered on both groups. At the end of the next eight weeks or 16 weeks
from baseline assessment, an end-line assessment was carried out on the two groups. In the mid-line and end-line assessments, the SBQ-R, PCL-5, and BDI-II tests were administered to track the changes in the SB, PTSD, and DD scores. Data from each level of assessment was analyzed to track the changes in the control and experimental group.

The DBT PE structure of treatment was adapted from the DBT training manual (Linehan, 2015b), PE therapist guide (Foa et al., 2007), and DBT PE research (Harned, 2017). Each session took a minimum of two hours to cover the homework reviews, life-skills training, and exercises for each lesson. Some of the sessions such as the introduction and final sessions were offered twice to accommodate the respondents who were absent. The school curriculum had a great workload, thus, necessitating the intervention to be offered during the weekends and school holiday. This was the only time within which the participants were available for uninterrupted sessions with breaks in between. Each session had its allocated training handouts and homework worksheets (Linehan, 2015a; Linehan, 2015b) to train and enhance application through a regular practice of the discussed skills.

The DBT PE intervention is structured into three stages: in the first stage, DBT skills are used exclusively; in the second one, DBT and PE skills are used; and in the third, specific DBT skills are targeted. Each of the three stages was structured to take four sessions. Figure 3.2 illustrates the DBT PE treatment flow chart for the study. It indicates the major areas of focus in each of the three stages of treatment using the DBT PE protocol.
Figure 3.2: DBT PE Treatment Stages Flow Chart
Source: Behavioral Research & Therapy Clinic (BRTC, 2018).

Stage 1: Establishing Safety and Stability

Behavioral Control & Skills Acquisition

Stage 2: Remembrance and Mourning

Emotional Processing of Trauma

Stage 3: Reconnection

Building a Life without PTSD

DBT PE Protocol

Standard DBT (1 Year)
The three stages of DBT PE are illustrated in Figure 3.2. The three stages include behavioral control and skills acquisition, emotional processing of trauma, and building a life without PTSD.

DBT PE stage 1 (Sessions 1 to 4)

The first session entailed rapport building through introductions and orientation to the background, relevance, and structure of DBT PE. Mindfulness skills were also introduced in this session. After the introduction and orientation session, severe behavioral dyscontrol was targeted with the focus being on establishing safety and stability through skills acquisition. The researcher equipped the participants with relevant skills that are geared towards helping them gain control over impulsive and life-threatening behaviors. The DBT skills taught in this stage were mindfulness and distress tolerance skills.

DBT PE stage 2 (Sessions 5 to 8)

In the next four weeks, DBT skills were combined with PE skills with the focus being on the treatment of PTSD and emotional dysregulation. At this stage trauma and quiet desperation were targeted thus facilitating emotional processing of trauma. The in vivo and imaginal exposure therapies were incorporated in the DBT emotional regulation skills.

DBT PE stage 3 (Sessions 9 to 12)

In stage three the DBT PE treatment addressed other life difficulties that are relevant to the participants. These are intended to build a life without the severe symptoms of PTSD. The focus was on interpersonal effectiveness skills geared towards helping participants enhance their relationships' functioning and increase
their productive activities such as academic work as well as accumulate more pleasant experiences in life.

Table 3.2 is a DBT PE therapy sessions flow chart outlining the 12 treatment sessions which were administered to the experimental group. The sessions' flow chart contains a summary of the content which was covered in each session as well as the activities and assignments for both therapy sessions and home assignment in between the sessions.

**Table 3.2: DBT PE Therapy Sessions Flow Chart**

<table>
<thead>
<tr>
<th>Session</th>
<th>Topic</th>
<th>Content</th>
<th>Activity</th>
<th>Homework Worksheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAGE I: Behavioral Control and Skills’ Acquisition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Orientation</td>
<td>Introductions. Structure of the sessions. Importance and goals of DBT PE</td>
<td>G1: Skills training goals</td>
<td>G1: pros and cons of using skills</td>
</tr>
<tr>
<td></td>
<td>Wise Mind</td>
<td>M1a: Mindfulness definition</td>
<td>M3,3a: States of mind- wise mind</td>
<td>M2a: Mindfulness core skills</td>
</tr>
<tr>
<td></td>
<td></td>
<td>M1b: Goals of mindfulness</td>
<td></td>
<td>M3: Wise mind practice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>G3: Skills training guidelines</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Mindfulness</td>
<td>What skills: observing, describing, and participating.</td>
<td>M4: “What skills” for taking hold of one’s mind</td>
<td>M4a, 4b: Observe, describe, participate</td>
</tr>
<tr>
<td></td>
<td>“What” Skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>“How” Skills</td>
<td>How skills: act nonjudgmentally, one-mindfully, and effectively</td>
<td>M5: “How” Skills, for taking hold of one’s mind</td>
<td>M5a: Non-judgmental, one-mindful, effectiveness</td>
</tr>
<tr>
<td></td>
<td>Skills for</td>
<td>STOP skills: Stop, Take a back step, Observe, Proceed mindfully. Pros and cons evaluation.</td>
<td>DT1: Goals of distress tolerance</td>
<td>DT1a: Crisis survival skills</td>
</tr>
<tr>
<td>3</td>
<td>Crisis Survival</td>
<td></td>
<td>DT4: The STOP skill</td>
<td>DT2a: Practicing the STOP Skill</td>
</tr>
<tr>
<td></td>
<td>Distraction;</td>
<td>ACCEPSTS Distracting strategies; with Activities, Contributions, Comparisons, Emotions, Push away.</td>
<td>DT7: Distracting with wise mind ACCEPSTS</td>
<td></td>
</tr>
<tr>
<td>Session</td>
<td>Topic</td>
<td>Content</td>
<td>Activity</td>
<td>Homework Worksheet</td>
</tr>
<tr>
<td>---------</td>
<td>-------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
<td>Soothing self;</td>
<td>Self-soothing strategies: comforting sensual activities, nurturing, soothing.</td>
<td>DT8: Self-Soothing</td>
<td>DT 6a: Self-soothing</td>
</tr>
<tr>
<td></td>
<td>Improving the Moment</td>
<td>Improving the moment strategies - IMPROVE: imagery, seek meaning, pray, relax, do one thing at a time, enhance vacation, encouragement.</td>
<td>DT9: Improving the moment.</td>
<td>DT 7a: IMPROVE</td>
</tr>
<tr>
<td>4</td>
<td>Reality Acceptance</td>
<td>Reality acceptance skills: Accept Radically, Turn mind, Willingness, Half-smile, Willing hands</td>
<td>DT11: Radical acceptance</td>
<td>DT9a: Practicing accepting radically</td>
</tr>
<tr>
<td></td>
<td>Willingness</td>
<td>Contrast willingness with willfulness - give examples</td>
<td>DT13: Willingness</td>
<td>DT10: Willingness, Mind turning, willfulness</td>
</tr>
<tr>
<td></td>
<td>Mindfulness of Thoughts</td>
<td>DT15a: Practicing mindfulness of thoughts</td>
<td>DT15: Current thoughts</td>
<td>12a: Mindfulness of current thoughts</td>
</tr>
<tr>
<td>STAGE II-DAT PE: Emotional Processing of Trauma</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Understanding and Labeling</td>
<td>-functions of emotions, -models of emotions, -observing-describing and naming</td>
<td>ER1: Emotion regulation (ER)</td>
<td>ER 1: Pros and cons of emotion change</td>
</tr>
<tr>
<td></td>
<td>Emotions</td>
<td></td>
<td>ER3: What emotions do</td>
<td>Review handout 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ER5: Emotions describing</td>
<td>Review handout 6</td>
</tr>
<tr>
<td></td>
<td>Intro to PE</td>
<td>Orienting on trauma</td>
<td>Questions and answers</td>
<td>ER4a: Observing, describing emotions</td>
</tr>
<tr>
<td></td>
<td>Pre-Exposure</td>
<td>In vivo: hierarchy, commitment, strengthening, and</td>
<td>Practice exercise; events, interpretations</td>
<td>Practice event recall and experience</td>
</tr>
</tbody>
</table>

 Reality acceptance skills: Accept Radically, Turn mind, Willingness, Half-smile, Willing hands

Contrast willingness with willfulness - give examples

DT10: Willingness, Mind turning, willfulness

DT15: Current thoughts mindfulness

STAGE II-DAT PE: Emotional Processing of Trauma

ER1: Emotion regulation (ER)
ER3: What emotions do
ER5: Emotions describing
ER6: Emotions describing

Questions and answers

Practice exercise; events, interpretations

Practice event recall and experience
<table>
<thead>
<tr>
<th>Session</th>
<th>Topic</th>
<th>Content</th>
<th>Activity</th>
<th>Homework Worksheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Opposite Action</td>
<td>Opposite action steps 1–7, imagine it is safe and doable.</td>
<td>ER10: Opposite action; ER6: how to change unwanted emotions</td>
<td>Homework: practice in vivo exposure.</td>
</tr>
<tr>
<td>Session</td>
<td>Topic</td>
<td>Content</td>
<td>Activity</td>
<td>Homework</td>
</tr>
<tr>
<td>---------</td>
<td>-------</td>
<td>---------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>9</td>
<td>Understanding Obstacles, Clarifying goals</td>
<td>How to be effective at achieving own goals without alienating others or losing self-respect.</td>
<td>IE1: interpersonal effectiveness (IE) goals&lt;br&gt;IE2: Factors hindering</td>
<td>IE1: Pros and cons of using IE skills&lt;br&gt;IE7: Troubleshooting IE</td>
</tr>
<tr>
<td>10</td>
<td>Assertiveness Skills: achieve objectives-DEAR MAN</td>
<td>Describe, Express, Assert, Reinforce, be Mindful, Appear confident, and Negotiate.</td>
<td>IE 5: Objective effectiveness guidelines: (DEAR MAN) get what you want</td>
<td>IE4: Writing out IE Scripts&lt;br&gt;ER5: Tracking IE skills use</td>
</tr>
<tr>
<td>11</td>
<td>Assertiveness Skills: Positive Relationships, Enhancing self-respect GIVE FAST</td>
<td>(be) Gentle, Interested, Valid, Easy manner use, be Fair, no Apologies, Stick to values, (be) Truthful.</td>
<td>IE 6: Relationship effectiveness: (GIVE) IE 7: Self-respect effectiveness: (FAST)</td>
<td>IE8: Finding and getting people to like you&lt;br&gt;IE 9: Mindfulness of others</td>
</tr>
<tr>
<td></td>
<td>Evaluating Options</td>
<td>Finding friends and getting them to like you.</td>
<td>IE 8: Evaluating options IE6: The dime game.</td>
<td>Handout 11a, 12a, 13a, 16c, 18a, 19a, 22a</td>
</tr>
<tr>
<td></td>
<td>Building Relationships and Ending Destructive Ones.</td>
<td>Mindfulness of others, Ending destructive or unwanted relationships</td>
<td>Handout 10: Overview building and ending destructive relationship&lt;br&gt;Handout 11: Finding and getting people to like you.</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Troubleshooting Interpersonal Effectiveness</td>
<td>The common problems: Unclear objectives, short-term goals interfering with long-term, emotions affecting skills, worries, assumptions &amp; myths, environment</td>
<td>IE 9: Troubleshooting: When what you are doing isn’t working</td>
<td>IE7: Troubleshooting IE skills.&lt;br&gt;IE12: Validating others&lt;br&gt;IE13: Self-validation and self-respect</td>
</tr>
</tbody>
</table>

Adapted from: Foa et al. (2007), Harned (2017), and Linehan (2015a).

3.9 Pretesting
Pretesting was done using a small number of respondents to ascertain the appropriateness of the questions and their comprehension. The sociodemographic questionnaires and the standardized tests (SBQ-R, PCL-5, and BDI-II) were pre-tested on a group that was selected conveniently. The main purpose of pre-testing was to identify potential problems with the methods, logistics, and the clarity of questions (Hennink, Hutter, & Bailey, 2011).

Pretesting of the questionnaires helped the researcher assess the reaction of respondents, the acceptability, cultural appropriateness, and clarity of the questions, as well as the time required and the willingness of the respondents to co-operate. The researcher was, therefore, able to determine the extent to which instructions given were followed and to locate the problems in carrying out those instructions. Pretesting enabled the researcher to enhance reliability as well as the validity of the data collected (Mugenda & Mugenda, 2003). The instruments were also deemed to be contextually relevant to the participants.

3.10 Data Management

Data was well managed to ensure safety during and after data collection. During data collection, the questionnaires were put in the boxes after completion. Only the researcher and the research assistants were allowed to assist in picking up filled-up questionnaires to ensure the safety and confidentiality of data. Once the respondents had submitted all the questionnaires, the box was securely moved to a safe place as they awaited data entry. During data entry, only the researcher and the research statistician were allowed to access the data; they were well informed on data safety and confidentiality requirements. Data was only stored in the researcher’s computer, which had a password for further protection. The demographic questionnaires and assessment tools were locked in a cabinet even after data had been
analyzed to limit access from unauthorized persons as well as prevent loss or interference of the data.

3.11 Data Analysis Plan

Data from the sociodemographic questionnaires as well as the standardized assessment tests were coded and keyed into the computer using the Statistical Package for the Social Sciences (SPSS) version 24. The researcher cleaned up the data and counterchecked the data entered against the raw data. The SPSS was used to generate frequencies, means, percentages, standard deviations, and p-values which were presented in tables and graphs. The data generated was analyzed and meaning drawn from the tables as per the study objectives. Table 3.3 highlights the data analysis technique used for each objective.

Table 3.3: Data Analysis Chart

<table>
<thead>
<tr>
<th>Time</th>
<th>Data</th>
<th>Instruments</th>
<th>Data Analysis Technique</th>
<th>Technique</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 0</td>
<td>The prevalence of SB, PTSD and DD.</td>
<td>Demographic Questionnaire, SBQ, PCL-5 BDI-II</td>
<td>Tables of distributions, graphs and chi-square tests of association</td>
<td></td>
</tr>
<tr>
<td>Time 0</td>
<td>The severity of SB and its association with demographic factors</td>
<td>Demographic Questionnaire, SBQ, PCL-5 BDI-II</td>
<td>Summary statistics, Independent T-Test, One-way Anova, Chi-square</td>
<td>Bivariate</td>
</tr>
<tr>
<td>Time 0</td>
<td>The risk factors for SB</td>
<td>Demographic Questionnaire, SBQ, PCL-5, BDI-II</td>
<td>Logistics regression models, Chi-square tests of independence</td>
<td>Bivariate &amp; multivariate analysis,</td>
</tr>
<tr>
<td>Time 0, Time 1, Time 2</td>
<td>The relationship between PTSD and DD</td>
<td>SBQ, PCL-5, BDI-II</td>
<td>Logistics regression models, Chi-square tests of independence</td>
<td>Bivariate &amp; multivariate analysis,</td>
</tr>
</tbody>
</table>
3.12 Ethical Considerations

Ethical considerations are the steps taken to protect the research participants. They are of paramount importance since clinical interventions are likely to impact on the study participants (Schrems, 2013). In social sciences research, there are four major ethical principles namely, justice, non-maleficence, autonomy, and beneficence (Avasthi, Ghosh, Sarkar, & Grover, 2013). The following is a discussion of how the ethical principles and other ethical considerations were observed in this study.

Research and permit approval

According to Cresswell and Clarc (2011), getting access to people and sites requires obtaining permission from individuals in charge of the sites. Sometimes this involves individuals at different levels. After the proposal approval, the researcher sought the relevant permission from the institution of study, Daystar University, and ethical clearance from the DU-ERB. The researcher then obtained a research authorization letter and a permit from the NACOSTI. Thereafter, the researcher obtained permission from the MoE for Nairobi County and also informed the relevant sub-county directors of education. Further, access authorization was approved by the school principals of the sampled schools. After access was granted, the researcher worked closely with the teacher counselor, as assigned by the school principals to assist in the coordination of the students.
Informed consent and assent

The researcher discussed the nature and structure of the research with the school principals. The school principals as the authority persons entrusted with the responsibility of students by their parents gave informed consent for the participation of students in the study. The researcher then informed the participants about the study. Informed verbal and written consent or assent were sought from the study participants depending on their age. The consent/assent form stipulated details concerning the participants’ privacy and confidentiality, the procedure of the study, and ethical issues regarding benefits, risks, and their right to participate voluntarily. Participants' assent was a requirement before administering the tests and conducting the therapies.

Confidentiality and privacy

The participants were protected by observing confidentiality regarding the information given. The researcher assured participants of confidentiality and consequently took the necessary measures to ensure confidentiality. The participant's identity remained anonymous and instead of using their names, the admission numbers were used as their identification codes. The group participants were also requested to maintain confidentiality about personal information shared by group members during group therapy sessions. It was agreed that the information shared would not be used to humiliate, ridicule, or put the participants down in any way.

Autonomy/ respect for persons

It was made clear that participation in the study was voluntary and any participant was free to discontinue their participation at any time without penalty. Participants were also informed that withdrawal from the study would not lead to denial of any entitlements that had been promised. No participant would be put under
duress to answer any question since coercing any respondent is unethical (Polit & Beck, 2008). All the participants were treated with respect and in a nondiscriminatory way regardless of their views, values, beliefs, identities, status, or any other circumstances.

Non-maleficence and beneficence

The DBT PE group sessions were facilitated by psychologists who had been trained in DBT PE skills, to give a professional quality of the skills and help in adhering to the basic counseling skills. The participants were informed of the risks and benefits of participating in the study. Since there is the risk of causing psychological discomfort in a study ascertaining psychological distress, the participants were encouraged to address any distress or discomfort arising from group therapy sessions. Debriefing sessions were availed to the control group after the end-line assessment. These entailed two group therapy sessions focusing on psychosocial care for SB and some basic distress tolerance and emotional regulation skills. Relevant referral options were discussed with all the participants and phone therapy continued to be given by the researcher over any emergencies.

3.13 Summary

The chapter has explained the research methodology which was used in the study. The research design used, quasi-experimental, has been discussed. The study site and the study population have also been described. The sampling procedures, inclusion and exclusion criteria, tools, and procedures of data collection, as well as instrument pretesting, have been detailed. Data safety, analysis plan, and ethical
considerations used have also been examined. The next chapter presents the research findings, analysis, and interpretation of data.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

4.1 Introduction

Chapter four presents the data analysis results of the study conducted among high school students in Nairobi County in Kenya. The chapter starts by explaining the statistical analysis used. The study participants are then described before the presentation and analysis of data per the study objectives. The findings are also presented per the study objectives from the prevalence of the study disorders, their severity, risk factors for SB, and an association between the disorders, to the efficacy of DBT PE intervention on the disorders. The analysis was done using relevant statistical procedures for each study objective. The analytical report is presented in tables and figures showing significant research findings.

4.2 Analysis and Interpretation

4.2.1 Statistical analysis methods

Descriptive statistics and chi-square tests of association were used to determine the relationship between sociodemographic variables at baseline and presentation of SB, DD, and PTSD. A comparison of mean tests such as independent t-test and one-way analysis of variance (ANOVA) was also used to determine whether there were significant differences between the means of two or more independent groups. An unpaired t-test was used when comparing exactly two independent groups.
while ANOVA was used where three or more independent groups were involved. The tests done yielded a p-value that was used to determine whether the difference in means was significant or not. The significance level set for this study was 5% (0.05). Therefore where the p-value was equal or less than 0.05 (p≤0.05), it was concluded that there was a significant difference between the groups under investigation.

A logistic regression model was used to study the association between a categorical outcome variable and one or more independent variables to determine the risk factors for SB. Spearman rank correlation was used to estimate the strength and direction of the relationship between two binary variables in the association for SB, DD, and PTSD. A correlation test was then conducted to test the hypothesis that the estimated correlation coefficient was significantly different from zero. The averages and standard deviations of the participants SBQ-R, PCL-5, and BDI-II scores at baseline, midline, and end-line were compared. A t-test was used to assess whether the scores significantly differed between the control and experimental groups after the administration of DBT PE at midline and end-line. Eventually, the effect size of the treatment differences was calculated with corresponding 95% confidence intervals.

4.2.2 Distribution of the study participants

Response rate

A total of 1,040 respondents from the four schools were screened at baseline using a sociodemographic questionnaire and three standardized tools; SBQ-R for SB, BDI-II for DD, and PCL-5 for PTSD. Screening all the students who were present at the time of the study provided important data for the calculation of prevalence and determination of the risk factors for SB. From the respondents (n=1,040) who were screened at baseline, a study sample of participants who presented with the three disorders was drawn for the quasi experimental study. Data from the sampled
participants helped in determination of severity of the disorders, relationship between the disorders and efficacy of DBT PE intervention. Although there was a higher number of respondents who presented with the three disorders, the data analyzed for the quasi experimental study was from 104 participants who participated fully in the study. This was a good (99%) response rate, considering that the statistically estimated sample size for the study was 105 participants at a 30% attrition rate.

Distribution of participants per study groups

The participants in the study sample formed the experimental (intervention) group (n=53) and the control group (n=51). Participants in the experimental group received 12 sessions of the DBT PE intervention while those in the control group did not receive any intervention. Since the control group did not receive the intervention, it provided a neutral comparison for the group receiving the intervention. The control group is necessary for determining the impact produced by the independent variable (Pithon, 2013). The distribution of the participants per the study groups is presented in Table 4.1.

<table>
<thead>
<tr>
<th>Study Group</th>
<th>Frequency (n)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>53</td>
<td>51.0</td>
</tr>
<tr>
<td>Control</td>
<td>51</td>
<td>49.0</td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The 104 participants who met the inclusion criteria for the quasi experimental study were assigned to the experimental group (51%, n=53) and control groups (49%, n=51) for comparison of results. These participants took part in the baseline, mid-line, and end-line assessment. The data obtained from participants in the two study groups was necessary for evaluating the magnitude and direction of the three disorders. The data also helped achieve the main study objective of assessing the efficacy of the
intervention by tracking the trend of both experimental and control groups from baseline through the midline to end-line.

4.2.3 Sociodemographic characteristics of the participants

Descriptive statistics were used to determine the background characteristics of the participants based on their responses to the sociodemographic questionnaire. Table 4.2 depicts the distribution of sociodemographic characteristics of all the study participants combined and in their study groups.

<table>
<thead>
<tr>
<th>Socio demographic factors</th>
<th>Total</th>
<th>Experimental</th>
<th>Control</th>
<th>Chi-square</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>104</td>
<td>100.0</td>
<td>53</td>
<td>51.0</td>
<td>51</td>
</tr>
<tr>
<td>Age in years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-16</td>
<td>55</td>
<td>52.9</td>
<td>28</td>
<td>52.8</td>
<td>27</td>
</tr>
<tr>
<td>17-22</td>
<td>49</td>
<td>47.1</td>
<td>25</td>
<td>47.2</td>
<td>24</td>
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<td>Number of rooms</td>
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<td>21</td>
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<tr>
<td>2-3 Rooms</td>
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<td>38.5</td>
<td>26</td>
<td>49.1</td>
<td>14</td>
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<tr>
<td>4+ Rooms</td>
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<td>12.5</td>
<td>6</td>
<td>11.3</td>
<td>7</td>
</tr>
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<td>Gender</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
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<td>69</td>
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<td>32</td>
<td>60.4</td>
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<td>21</td>
<td>39.6</td>
<td>14</td>
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<tr>
<td>Year of study</td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>Form 1</td>
<td>35</td>
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<td>20</td>
<td>37.7</td>
<td>15</td>
</tr>
<tr>
<td>Form 2</td>
<td>31</td>
<td>29.8</td>
<td>14</td>
<td>26.4</td>
<td>17</td>
</tr>
<tr>
<td>Form 3</td>
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<td>10</td>
<td>18.9</td>
<td>19</td>
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<tr>
<td>Form 4</td>
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<td>8.7</td>
<td>9</td>
<td>17.0</td>
<td>0</td>
</tr>
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<td>Care giver</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete family</td>
<td>49</td>
<td>47.1</td>
<td>24</td>
<td>45.3</td>
<td>25</td>
</tr>
<tr>
<td>Non-family</td>
<td>19</td>
<td>18.3</td>
<td>12</td>
<td>22.6</td>
<td>7</td>
</tr>
<tr>
<td>Single Parent or Sibling</td>
<td>36</td>
<td>34.6</td>
<td>17</td>
<td>32.1</td>
<td>19</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>31</td>
<td>29.8</td>
<td>17</td>
<td>32.1</td>
<td>14</td>
</tr>
<tr>
<td>Muslim</td>
<td>5</td>
<td>4.8</td>
<td>5</td>
<td>9.4</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>9.6</td>
<td>5</td>
<td>9.4</td>
<td>5</td>
</tr>
<tr>
<td>Pentecostal</td>
<td>40</td>
<td>38.5</td>
<td>19</td>
<td>35.8</td>
<td>21</td>
</tr>
<tr>
<td>Protestant</td>
<td>18</td>
<td>17.3</td>
<td>7</td>
<td>13.2</td>
<td>11</td>
</tr>
</tbody>
</table>
Generally, higher numbers of participants were young adolescents aged between 14 to 16 years (n = 55, 52.9%), lived in a one-roomed house (n = 51, 49.0%), females (n = 69, 66.3%), and in their first form of high school (n = 35, 33.7%). Additionally, more participants were from a complete family with both parents and siblings (n = 49, 47.1%) and were in the Pentecostal denomination (n = 40, 38.5%).

From the third column onwards, Table 4.2 presents the distribution of the participants' sociodemographic characteristics within their study group. The age distribution of participants in the two groups compared so well since, from the younger adolescents aged 14-16 (52.9%, n = 55), about half (52.8%, n = 28) of them were in the experimental group and the other half (52.9%, n = 27) in the control group. Likewise, about half (47.2%, n = 25) of the older adolescents aged 17-22 years were in the experimental group, and the other almost half (47.1% (n = 24) in the control group.

In regard to gender, females were more in both the experimental (n = 32, 60.4%) and control groups (n = 37, 72.5%) in comparison to the males in both experimental (n = 21, 39.6%) and control groups (n = 14, 27.5%). The study findings confirm that internalized disorders such as anxiety and mood disorders are more common among females hence, a higher prevalence of suicidal ideations and plans in females compared to males (Zahn-Waxler, Shritzcliff, & Marceau, 2008). The difference in the gender of respondents was insignificant (p=0.217) hence, it was not likely to influence the outcome.

As for the caregivers of the participants, a higher number of participants in both the experimental (n = 24, 45.3%) and control group (n = 25, 49%) were from complete families. The two groups were also similar in their religious affiliations since the Pentecostal denomination had more participants in both the experimental (n
= 19, 35.8%) and control (n = 21, 41.2%) groups. The results indicate that the two groups compared so well in the distribution of their sociodemographic characteristics. This was further validated by a chi-square test for the association in that there was no statistically significant difference (p>0.05) in the participants' sociodemographic aspects, except for the year of study.

Statistically, the difference in participants' year of study was significant as indicated by the p-value (p= 0.003). The significant difference was as a result of non-participation (n = 0, 0%) of the form four students in the control group as compared to participation (17%, n = 9) of the form fours in the experimental group. This was because, despite screening the form four students in the control group at baseline, they did not participate in the post-test assessments due to academics' pressure occasioned by the final high school national examinations. Therefore, they did not present the final data for analysis. Despite the year of study presenting a significant difference, the age difference remained insignificant (p=1.00), so, the similarity of the two groups was still retained. Age is a more constant determiner of variance in disorders' presentation since respondents in a similar class tend to vary in their ages. Studies have indicated that age disparity influences SB (Joe, Stein, Seedat, Herman, & Williams, 2008; Ojuade et al., 2018b; Voss et al., 2019). Therefore, the final results were not affected since the age difference in the respondents was insignificant.

Having similar sociodemographic characteristics is very important because randomized controlled studies assume that the control and experimental groups should not differ in any way at baseline so that the treatment effect can be fully attributed to the intervention (Kinser & Robins, 2013). To further mitigate external influence multivariate analysis was used to control for the sociodemographic variables. What follows is the data presentation per the specific objectives of the study.
4.2.4 Prevalence of SB, PTSD, and DD among the respondents

The first objective of the study sought to establish the prevalence of SB, PTSD, and DD among the respondents. During the baseline assessment, 1,040 respondents were screened for SB using the SBQ-R, PTSD using the PCL-5, and DD with the BDI-II. The test scores were used to determine the proportions of respondents who had clinically significant levels of the disorders. Those who scored 7 and above (≥ 7) in SBQ-R had SB, 17, and above (≥ 17) in BDI-II had DD whereas, those with 33 and above (≥ 33) in PCL-5 after meeting the four criteria for DSM-5 had PTSD.

Overall prevalence of the study disorders

The prevalence of the disorders was estimated by obtaining the average percentage of those with disorders from the overall number of respondents. This entailed totaling the number of respondents who had clinically significant levels of each one of the disorders, divided by the total number of respondents, and then getting their percentages. The comorbid disorders were indicated by obtaining average percentages of respondents who had clinically significant levels of either two or three disorders in their categories. Table 4.3 displays the total numbers and percentage of the participants who presented with clinically significant levels of each of the three disorders, two, or a combination of the three altogether.

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Frequency (n)</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB</td>
<td>224</td>
<td>21.5</td>
</tr>
<tr>
<td>PTSD</td>
<td>390</td>
<td>37.8</td>
</tr>
<tr>
<td>DD</td>
<td>440</td>
<td>42.6</td>
</tr>
<tr>
<td>SB comorbid PTSD</td>
<td>175</td>
<td>17.0</td>
</tr>
<tr>
<td>SB comorbid DD</td>
<td>172</td>
<td>16.6</td>
</tr>
<tr>
<td>PTSD comorbid DD</td>
<td>295</td>
<td>28.6</td>
</tr>
</tbody>
</table>
The study findings presented in Table 4.3 indicate that DD had the highest prevalence (42.6%, n=440), followed by PTSD (37.8%, n = 390) and then a combination of PTSD and DD (28.6%, n = 295). This implies that DD was more prevalent than PTSD among the respondents. However, a good number (28.6%) of the respondents had DD comorbid PTSD.

The prevalence of SB alone was higher (21.5%, n=224) than that of the combined SB, PTSD, and DD (15.0%, n=154). From the respondents (n = 295) who had DD comorbid PTSD, there was a good number (n=154) of them who had SB leading to a 15% prevalence of combined DD, PTSD, and SB from the assessed population (1040). As expected, the study indicates that more respondents presented with one disorder in comparison to those who had two disorders and a further smaller portion (15.0%) of the population, had the three disorders. The findings imply that the three disorders were prevalent among the respondents. The study targeted the respondents (15%) who presented with the three disorders in testing the efficacy of the intervention. This is because adolescents with multiple disorders as well as SB are at the highest risk of committing suicide (CDCP, 2010).

Prevalence by sociodemographic characteristics

The study further sought to determine the prevalence of SB, PTSD, DD, and their combinations as per the participants' sociodemographic characteristics of age, gender, and year of study, religious affiliations, ethnic group, housing type, and type of caregiver. A chi-square test was used to determine the statistical significance of the association between the sociodemographic aspects and the study disorders. The
prevalence of the disorders by the respondents’ sociodemographic characteristics is presented in Table 4.4.
### Table 4.4: Prevalence of Disorders by Sociodemographic Characteristics

<table>
<thead>
<tr>
<th>Socio demographic factors</th>
<th>SB n (%)</th>
<th>Sig</th>
<th>PTSD n (%)</th>
<th>Sig</th>
<th>DD n (%)</th>
<th>Sig</th>
<th>SB and PTSD n (%)</th>
<th>Sig</th>
<th>SB and DD n (%)</th>
<th>Sig</th>
<th>PTSD and DD n (%)</th>
<th>Sig</th>
<th>SB, PTSD and DD n (%)</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>224(21.5)</td>
<td></td>
<td>390(37.8)</td>
<td></td>
<td>440(42.6)</td>
<td></td>
<td>175(17.0)</td>
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<td>172(16.6)</td>
<td></td>
<td>295(28.6)</td>
<td></td>
<td>154(15.0)</td>
<td></td>
</tr>
<tr>
<td>Age in years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-16</td>
<td>117(20.1)</td>
<td>0.23</td>
<td>198(34.2)</td>
<td>&lt;0.01</td>
<td>230(39.7)</td>
<td>0.04*</td>
<td>90(15.5)</td>
<td>0.2</td>
<td>87(15.0)</td>
<td>0.13</td>
<td>145(25.1)</td>
<td>&lt;0.01</td>
<td>78(13.5)</td>
<td>0.16</td>
</tr>
<tr>
<td>17-22</td>
<td>107(23.4)</td>
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<td>192(42.4)</td>
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<td>210(46.3)</td>
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<td>85(18.8)</td>
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<td>85(18.7)</td>
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<td>150(33.2)</td>
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<td>76(16.8)</td>
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<tr>
<td>Gender</td>
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<td></td>
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</tr>
<tr>
<td>Male</td>
<td>88(17.5)</td>
<td>&lt;0.01</td>
<td>163(32.7)</td>
<td>&lt;0.01</td>
<td>173(34.6)</td>
<td>&lt;0.01</td>
<td>61(12.3)</td>
<td>&lt;0.01</td>
<td>64(12.8)</td>
<td>&lt;0.01</td>
<td>111(22.3)</td>
<td>&lt;0.01</td>
<td>55(11.1)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Female</td>
<td>136(25.4)</td>
<td></td>
<td>227(42.5)</td>
<td></td>
<td>267(50.0)</td>
<td></td>
<td>114(21.4)</td>
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<td>108(20.2)</td>
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<td>184(34.5)</td>
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<td>99(18.6)</td>
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<tr>
<td>Care giver</td>
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<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Complete family</td>
<td>106(19.6)</td>
<td>0.17</td>
<td>187(35.0)</td>
<td>0.15</td>
<td>210(39.3)</td>
<td>0.03*</td>
<td>83(15.5)</td>
<td>0.34</td>
<td>81(15.2)</td>
<td>0.13</td>
<td>138(25.9)</td>
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<td>32(20.3)</td>
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<td>35(22.0)</td>
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<td>54(34.2)</td>
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<td>32(20.3)</td>
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</tr>
<tr>
<td>Single Parent or Sibling</td>
<td>76(22.3)</td>
<td></td>
<td>138(40.7)</td>
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<td>149(43.7)</td>
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<td>60(17.7)</td>
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<td>56(16.4)</td>
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<td>103(30.4)</td>
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<td>50(14.8)</td>
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</tr>
<tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Catholic</td>
<td>66(23.1)</td>
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<td>109(38.7)</td>
<td>0.87</td>
<td>121(42.8)</td>
<td>0.98</td>
<td>50(17.7)</td>
<td>0.53</td>
<td>46(16.3)</td>
<td>0.68</td>
<td>82(29.2)</td>
<td>0.79</td>
<td>43(15.3)</td>
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<tr>
<td>Muslim</td>
<td>13(19.1)</td>
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<td>25(36.8)</td>
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<td>27(39.7)</td>
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<td>11(16.2)</td>
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<td>10(14.7)</td>
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<td>20(29.4)</td>
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<td>10(14.7)</td>
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<td>49(34.3)</td>
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<td>60(41.7)</td>
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<td>17(11.9)</td>
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<td>19(13.2)</td>
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<td>35(24.5)</td>
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<td>145(39.0)</td>
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<td>157(42.2)</td>
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<td>66(17.7)</td>
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<td>111(29.8)</td>
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<td>57(15.3)</td>
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</tr>
<tr>
<td>Protestant</td>
<td>38(23.2)</td>
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<td>59(36.2)</td>
<td></td>
<td>72(44.2)</td>
<td></td>
<td>30(18.4)</td>
<td></td>
<td>31(19)</td>
<td></td>
<td>44(27.2)</td>
<td></td>
<td>27(16.7)</td>
<td></td>
</tr>
<tr>
<td>Number of rooms</td>
<td></td>
<td></td>
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<tr>
<td>1 Room</td>
<td>102(20.9)</td>
<td>0.86</td>
<td>191(39.5)</td>
<td>0.48</td>
<td>207(42.7)</td>
<td>0.98</td>
<td>83(17.2)</td>
<td>0.77</td>
<td>78(16.1)</td>
<td>0.76</td>
<td>140(29.0)</td>
<td>0.97</td>
<td>71(14.7)</td>
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<tr>
<td>2-3 Rooms</td>
<td>95(21.8)</td>
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<td>154(35.7)</td>
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<td>183(42.3)</td>
<td></td>
<td>70(16.2)</td>
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<td>72(16.6)</td>
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<td>122(28.3)</td>
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<td>63(14.6)</td>
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</tr>
<tr>
<td>4+ Rooms</td>
<td>27(23.1)</td>
<td></td>
<td>45(38.8)</td>
<td></td>
<td>50(43.1)</td>
<td></td>
<td>22(19.0)</td>
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<td>22(19.0)</td>
<td></td>
<td>33(28.5)</td>
<td></td>
<td>20(17.2)</td>
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</tr>
<tr>
<td>Year of study</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Form 1</td>
<td>77(21.8)</td>
<td>0.53</td>
<td>109(31.2)</td>
<td>&lt;0.01</td>
<td>123(35.0)</td>
<td>&lt;0.01</td>
<td>53(15.2)</td>
<td>0.26</td>
<td>54(15.4)</td>
<td>0.19</td>
<td>74(21.2)</td>
<td>&lt;0.01</td>
<td>46(13.2)</td>
<td>0.12</td>
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<tr>
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<td>66(19.7)</td>
<td></td>
<td>117(35.0)</td>
<td></td>
<td>130(38.8)</td>
<td></td>
<td>54(16.2)</td>
<td></td>
<td>50(14.9)</td>
<td></td>
<td>87(26.1)</td>
<td></td>
<td>44(13.2)</td>
<td></td>
</tr>
<tr>
<td>Form 3</td>
<td>58(21.8)</td>
<td></td>
<td>115(43.6)</td>
<td></td>
<td>138(52.5)</td>
<td></td>
<td>48(18.2)</td>
<td></td>
<td>48(18.3)</td>
<td></td>
<td>93(35.5)</td>
<td></td>
<td>46(17.6)</td>
<td></td>
</tr>
<tr>
<td>Form 4</td>
<td>23(27.1)</td>
<td></td>
<td>49(58.3)</td>
<td></td>
<td>48(57.1)</td>
<td></td>
<td>20(23.8)</td>
<td></td>
<td>20(23.8)</td>
<td></td>
<td>41(48.8)</td>
<td></td>
<td>18(21.4)</td>
<td></td>
</tr>
</tbody>
</table>

* Significant at 5% level of significance
As depicted in Table 4.4, the study results show that there was a higher prevalence of SB (23.4%) among the older adolescents aged 17-22 years in comparison to the younger adolescents aged 14-16 (20.1%). Similarly, the older adolescents had a higher prevalence than the younger ones in PTSD (42.4% vs. 34.2%), DD (46.3% vs. 39.7%) and also in the combination of SB and PTSD (18.8% vs. 15.5%), SB and DD (18.7% vs. 15%), PTSD and DD (33.2% vs. 25.1%) and SB, DD and PTSD (16.8% vs. 13.5%).

There was a statistically significant association between the age of the respondents and PTSD (p<0.01), PTSD, and DD (p<0.01) and in DD (p=0.04). The study findings, therefore, indicate that a higher number of older adolescents present with the disorders understudy in comparison to younger adolescents. This may imply that either the traumatic experiences increase as adolescents get older or their enhanced cognitive development leads to greater awareness of the distress and consequently, the increased sense of despair. Nevertheless, there is a need to find out the triggers for psychological distress among this age group.

Focusing on the prevalence of the disorders per the gender of respondents. Females had a higher prevalence across all the disorders in comparison to the males. Specifically, there was a higher prevalence of DD among females (50%) than males (34.6%). The prevalence of PTSD was also higher among females (42.5%) than males (32.7%) and the same trend is observed in the SB prevalence where it was higher in females (25.4%) compared to males (17.5%). Higher prevalence for female in comparison to males was also observed across the different combinations of the disorders; SB and PTSD (21.4% vs. 12.3%), SB and DD (20.2% vs. 12.8%), PTSD and DD (34.5% vs. 22.3%) and SB, PTSD and DD (18.6% vs. 11.1%). There was a statistically significant difference (p<0.01) in the gender prevalence of all the three disorders.
disorders and their combinations. The findings indicate that gender does influence the prevalence of the three study disorders. This implies that females are more vulnerable to the development and expression of DD and PTSD in comparison to males, and consequently, a higher number of females present with SB.

The prevalence of the disorders varied across the different participants’ years of study. The form four respondents had a higher prevalence of SB (27.1%), PTSD (58.3%), DD (57.1%), SB and PTSD (23.8%), SB and DD (23.8%), PTSD and DD (48.8%), and SB, DD and PTSD (21.4%). These were followed by form threes on PTSD (43.6%), DD (52.5%), SB and PTSD (18.3%), SB and DD (18.3%), PTSD and DD (35.5%), and the three disorders (17.6%). On SB the form 1s and form 3s followed with a similar prevalence (21.8%). In general, the form fours had the highest prevalence across all the disorders. The form threes followed by having high prevalence across all the disorders but had a similar (21.8%) prevalence with the form ones in SB. The form twos followed, except for the three combined disorders where they had equal prevalence (13.2%) with form one. Finally, form ones had the least prevalence in most of the disorders. The difference in the year of study was significant in the prevalence of PTSD, DD, and comorbid DD and PTSD. This implies that the prevalence of PTSD and DD increased as respondents moved to a higher class.

The association between the respondents' type of caregiver and their prevalence of the disorders was also assessed. The participants who lived with non-family members had a higher prevalence of SB, PTSD, and DD at 26.4%, 41.1%, and 50.9% respectively followed by those who lived with a single parent or a sibling at 22.3%, 40.7%, and 43.7% respectively. The least affected group was that which lived with complete families at 19.6%, 35%, and 39.3%. The study findings indicate that
respondents living with guardians or non-immediate family members had the highest prevalence for each of the disorders, followed by those who lived with single parents or a sibling and lastly those who lived with both parents. Statistically, the difference in the prevalence of DD across the diverse family types differed significantly (p=0.03). This implies that there was a higher likelihood of presenting with DD among respondents who live with non-immediate family guardians whereas, those living with a complete family are least likely to present with DD.

Table 4.4 further indicates the results of the prevalence of the three disorders across the respondents' religious affiliations as well as the number of rooms in the house they reside in. There was just a slight difference in the prevalence of SB across the religious affiliations with Protestants leading at 23.2%, followed by Catholics at 23.1%. However, Pentecostals had a slightly higher prevalence of PTSD (39%) and comorbid PTSD and DD (29.8%) while the Protestants' prevalence was higher on DD (44.2%), SB and PTSD (18.4%), SB and DD (19%) and the three disorders combined (16.7%). The study results show no significant (p>0.05) differences in the prevalence of the disorders among the different religious denominations. This implies that religious affiliation does not necessarily influence the prevalence of the disorders.

There were very slight differences in the prevalence of the three disorders across the respondents' house set-up. Those living in four or more bedroomed houses had a slightly higher prevalence of SB (23.1%), DD (43.1%), SB with PTSD (19%), SB with DD (19%), and in the combination of SB and DD with PTSD (17.2%); whereas, respondents in a one bedroomed house had a higher prevalence of PTSD alone (39.5%) and PTSD with DD (29%). Nevertheless, there was no statistically significant difference in the prevalence of the disorders across the respondents' diverse house set-up. Therefore, the prevalence of the study disorders was not
necessarily influenced by the respondents' house set-up which represents their diverse socioeconomic status.

Prevalence by SB categories

The scores from SBQ-R question one were analyzed to determine the prevalence of the participants, suicide plans, and suicide attempts; whereas the question three responses determined the responses SB self-disclosure. Data from the respondents who had been screened was used to divide them into two groups. Those who had clinically significant levels of SB, PTSD, and DD were categorized as 'pathological'; whereas those who had clinically insignificant scores in either of the disorders were categorized as 'non-pathological'. The prevalence of the respondents SB- ideations, plans and attempts; as well as their self-disclose is captured in Table 4.5.

Table 4.5: Respondents SB Categories and Disclosure

<table>
<thead>
<tr>
<th>Suicide categories</th>
<th>Overall</th>
<th>Non-pathological</th>
<th>Pathological</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>No or brief ideations</td>
<td>859</td>
<td>82.6</td>
<td>834</td>
</tr>
<tr>
<td>Suicidal Plans</td>
<td>131</td>
<td>12.6</td>
<td>82</td>
</tr>
<tr>
<td>Suicidal Attempts</td>
<td>50</td>
<td>4.8</td>
<td>28</td>
</tr>
<tr>
<td>Self-Disclosure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Didn't disclose</td>
<td>903</td>
<td>86.9</td>
<td>85</td>
</tr>
<tr>
<td>Disclosed once</td>
<td>105</td>
<td>10.1</td>
<td>75</td>
</tr>
<tr>
<td>Disclosed more than once</td>
<td>31</td>
<td>3.0</td>
<td>20</td>
</tr>
</tbody>
</table>

As shown in Table 4.5 the findings indicate that overall, most of the respondents (82.6%) did not have suicidal ideations or had just passing ideations and only a small percentage had suicidal plans (12.6%) or had attempted suicide (4.8%). Similarly, most of the respondents in the non-pathological group had no or brief ideations (88.3%). This indicates that in a general population, most of the people do
not have SB. It is therefore notable that in the study population, most of the respondents with no DD or PTSD had no SB and only a few had suicidal plans or had attempted suicide.

However, in the pathological group, only a small number (26%) indicated no or brief ideations. In comparing the two groups, only a relatively low percentage of the non-pathological participants had suicidal plans (8.7%) and suicidal attempts (3%), while in the pathological group, slightly more than half of the participants (n=49, 51%) had suicidal plans and a good number had attempted suicide (n=22, 22.9%). This implies that there was a higher prevalence of SB among respondents with the three disorders in comparison to the non-pathological ones as evidenced by suicidal plans (51% vs. 8.7%) and suicidal attempts (22.9% vs. 3%) respectively.

Table 4.5 further presents the findings on the numbers and percentages of the respondents' who did or did not disclose their suicidal tendencies. The SBQ-R question three which asks whether one has ever told someone that they might commit suicide was used to determine the number of respondents who disclosed their intention for SB. Overall, the majority (86.9%) of the respondents did not disclose their SB, however, 10.1% of the overall respondents disclosed once and 3% disclosed more than once. Considering that the majority (89.9%) of those who did not disclose were in the non-pathological group, the results imply that most of the respondents who did not tell anyone about SB had no suicidal intent.

Nevertheless, among the respondents who had suicidal intents (pathological group), more than half (n=55, 57%) didn't disclose, whereas, a good number (n=30, 31.3%) disclosed once and only a few of them (n=11, 11.5%) disclosed more than once. The findings, therefore, indicate that, although a high number (57%) among those at risk of SB hardly disclosed their struggle with SB, a good number (31.3%)
disclosed once and only a minority (11.5%) disclosed persistently. This implies that a high number of adolescents who are at risk of SB hardly disclose or seek help concerning their SB and the few-suicidal ones who seek help are not persistent. The study further, revealed that the few adolescents who disclosed their suicidal intents either once or more times had pathological levels of SB, DD, and PTSD and were therefore at high risk of suicidality.

4.2.5 Severity of SB among participants

Objective two of this study sought to determine the severity of SB among suicidal adolescents with DD and PTSD. The severity of the disorders was also associated with their sociodemographic characteristics. The scores of the study sample from SBQ-R and BDI-II were categorized into ordinal variables labeled according to the severity levels. Analysis of the association between the severity of these disorders and sociodemographic factors was conducted using the chi-square test of association. In cases where the cells of the two-way frequency table were less than five, a fisher's exact test was used instead, since it is the recommended test for small samples. Frequencies and percentage of the two-way cross-tabulations were generated and reported. A chi-square or fisher's exact test $p \leq 0.05$ was deemed statistically significant.

Severity of SB categories and sociodemographic distribution

The SBQ-R question one scores were used to determine the severity levels of the participants' SB in terms of 'no or brief ideations', 'suicidal plan', or 'suicidal attempts'. Chi-square test indicated the statistical association between the sociodemographic characteristics of the participants and their categories of SB severity. Data from the participants (n=104) who had clinically significant levels of
the disorders was used to determine the association between sociodemographic characteristics and the severity of SB. This is displayed in Table 4.6.

Table 4.6: Sociodemographic Distribution of SB Categories

<table>
<thead>
<tr>
<th>Socio demographic factors</th>
<th>No/brief ideations</th>
<th>Plan</th>
<th>Attempt</th>
<th>Chi-square</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>n</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>27</td>
<td>54</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
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<td>26</td>
<td>13</td>
<td></td>
<td>0.793</td>
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<tr>
<td>Control</td>
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<td>28</td>
<td>10</td>
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</tr>
<tr>
<td>Age in years</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-16</td>
<td>15</td>
<td>26</td>
<td>14</td>
<td></td>
<td>0.573</td>
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<td>17-22</td>
<td>12</td>
<td>28</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care giver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete family</td>
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<td>28</td>
<td>8</td>
<td></td>
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<td>Non-family</td>
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<tr>
<td>Single Parent or Sibling</td>
<td>8</td>
<td>16</td>
<td>12</td>
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<tr>
<td>Gender</td>
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<tr>
<td>Female</td>
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<td>36</td>
<td>14</td>
<td></td>
<td>0.792</td>
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<td>Male</td>
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<td>18</td>
<td>9</td>
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<td></td>
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<tr>
<td>Number of rooms</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1 Room</td>
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<td>10</td>
<td></td>
<td>0.881</td>
</tr>
<tr>
<td>2-3 Rooms</td>
<td>11</td>
<td>27</td>
<td>9</td>
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<td></td>
</tr>
<tr>
<td>4+ Rooms</td>
<td>2</td>
<td>15</td>
<td>4</td>
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</tr>
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<td>Year of study</td>
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<td>0.092</td>
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<td>1</td>
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<tr>
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<td>21</td>
<td>6</td>
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<tr>
<td>Protestant</td>
<td>4</td>
<td>9</td>
<td>5</td>
<td></td>
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</tr>
</tbody>
</table>

Overall, a high number of the participants had suicidal plans (51.9%) whereas, a good number had no ideations or had just brief ideations (26%) and the others

132
(22.1%) had attempted suicide. This indicates that from the suicidal adolescents, slightly more than half of them had suicidal plans and a good number (22.1%) had suicidal attempts which imply severe SB. A higher number of participants in the control group (54.9%) had suicidal plans in comparison to those of the experimental group (49.1%). More participants in the experimental group (24.5%) had attempted suicide in comparison to those of the control group (19.6%). However, the difference between the experimental and control groups' categories of SB was statistically insignificant. Implying that the two groups were relatively similar in their presentation of SB.

There was a higher number of older adolescents (57.1%) than younger adolescents (47.3%) who had suicidal plans. Nevertheless, a good number of younger adolescents presented with suicidal attempts (25.5%) in comparison to older adolescents (18.4%). These findings reveal that across all the ages, there were more participants with suicidal plans than suicidal attempts. However, a good number (27.3%) of participants had only brief or no suicidal ideations. Although not statistically significant, the findings indicate that suicidal plans were more prevalent among older adolescents whereas suicidal attempts were more prevalent among younger adolescents.

The study findings show that a higher number of females than males presented with suicidal plans (52.2% vs. 51.4%) and brief or no ideations (19% vs. 8%), while a higher number of males than females had attempted suicide (25% vs. 20.3%). The results indicate that out of the few males who planned suicide, most of them moved on to attempt execution of their plans but only a few females from the many who planned suicide went ahead to attempt it. This implies that most of the males who plan
suicide are likely to attempt suicide hence, they are at a higher risk of committing suicide in comparison to females.

The study further revealed that a slightly higher number of participants who resided in a house with four or more rooms planned (53.8%) or attempted (30.8%) suicide in comparison to those from homes with two to three rooms (50%, 22.5%) or one room (52.9%, 19.6%). However, the findings indicate a statistically insignificant (p>0.05) difference which implies that participants' socioeconomic status was not associated with the severity of SB. Since none of the sociodemographic characteristics had a statistically significant association with the diverse categories of SB, the results denote that the sociodemographic characteristics did not necessarily influence the severity of SB.

Severity of SB categories with or without intent

The severity levels of participants' SB were determined by focusing on suicidal plans or attempts with or without intent to die. The study sought to find out the association between the sociodemographic factors and SB severity in its different classifications, as indicated in Table 4.7.
Table 4.7: Severity of SB Categories with or without Intent

<table>
<thead>
<tr>
<th>Sociodemographic factors</th>
<th>Brief/ no Ideations</th>
<th>Suicide Plan (No Intent)</th>
<th>Suicide Plan (with Intent)</th>
<th>Suicide Attempt (No Intent)</th>
<th>Suicide Attempt (with Intent)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Overall</td>
<td>26</td>
<td>25.0</td>
<td>36</td>
<td>34.6</td>
<td>18</td>
<td>17.5</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Group</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Control</td>
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<td>Age in years</td>
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</tr>
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<td>14-16</td>
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<td>25.9</td>
<td>20</td>
<td>37.0</td>
<td>6</td>
<td>11.1</td>
</tr>
<tr>
<td>17-22</td>
<td>12</td>
<td>24.4</td>
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<td>32.6</td>
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<td>24.4</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Complete family</td>
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<td>36.7</td>
<td>10</td>
<td>20.4</td>
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<td>Non-family</td>
<td>5</td>
<td>27.7</td>
<td>6</td>
<td>33.3</td>
<td>4</td>
<td>22.2</td>
</tr>
<tr>
<td>Single Parent or Sibling</td>
<td>8</td>
<td>22.2</td>
<td>12</td>
<td>33.3</td>
<td>4</td>
<td>11.1</td>
</tr>
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<td>Gender</td>
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<td>Female</td>
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<td>25</td>
<td>36.8</td>
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<td>22.9</td>
<td>11</td>
<td>31.4</td>
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<td>20</td>
</tr>
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<tr>
<td>1 Room</td>
<td>14</td>
<td>27.5</td>
<td>17</td>
<td>33.3</td>
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<td>19.6</td>
</tr>
<tr>
<td>2-3 Rooms</td>
<td>10</td>
<td>25.6</td>
<td>13</td>
<td>33.3</td>
<td>7</td>
<td>18.0</td>
</tr>
<tr>
<td>4+ Rooms</td>
<td>2</td>
<td>15.4</td>
<td>6</td>
<td>46.2</td>
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<tr>
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<td></td>
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<tr>
<td>Catholic</td>
<td>9</td>
<td>29.0</td>
<td>7</td>
<td>22.6</td>
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<td>Muslim</td>
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<td>0</td>
<td>0</td>
<td>0</td>
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<td>0</td>
</tr>
<tr>
<td>Pentecostal</td>
<td>13</td>
<td>32.5</td>
<td>15</td>
<td>37.5</td>
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<td>15.0</td>
</tr>
<tr>
<td>Protestant</td>
<td>4</td>
<td>22.2</td>
<td>6</td>
<td>33.3</td>
<td>3</td>
<td>16.7</td>
</tr>
</tbody>
</table>

The results displayed in Table 4.7, reveal that a higher number of the participants had suicidal plans without intent (34.6%), followed by brief or no suicidal
ideations (25%). A good number (30.8%) had higher severity levels indicated by the fact that they wanted to die, that is, those on suicidal plans with intent 17.3% and suicidal attempts with intent 13.5%. The rest 8.7% had attempted suicide without intent, which may have been a cry for help or an indication of mixed feelings in a desperate effort towards ending their psychological anguish.

The study findings point out that although female participants' had a higher prevalence (52.2%) of suicidal plans, a good number (36.8%) of them did not intend to die. However, more females (17.7%) than males (5.7%) who attempted suicide had intent; whereas, a higher number of males (20%) than females (16.2%) who planned suicide had the intent to die. The results indicate that a high number of males planned suicide with intent, unlike females who planned without intent. However, a good number of females who attempted suicide had intent. Gender was the only sociodemographic variable that indicated a statistically significant (p=0.039) relationship with the categories of SB. This implies that gender did influence the severity and intent of SB.

Severity of suicidal ideation

Data from participants' responses to SBQ-R question two, 'how often have you thought about killing yourself in the past two weeks' was used to determine the severity of suicidal ideations. Those who responded 'never or rarely' were categorized as 'rarely', those who thought of suicide two to four times as 'sometimes' and those who thought more than five times as 'often'. The frequency of suicidal ideations per the participants’ sociodemographic factors was determined and chi-square tests (p-value) were used to establish the significance of their relationship as depicted in Table 4.8.
Table 4.8: Sociodemographic Distribution of Suicidal Ideations Severity

<table>
<thead>
<tr>
<th>Socio demographic factors</th>
<th>SI Rarely</th>
<th></th>
<th>SI Sometimes</th>
<th></th>
<th>SI Often</th>
<th></th>
<th>Chi-square</th>
<th>Sig</th>
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<td>Overall</td>
<td>21</td>
<td>20.2%</td>
<td>41</td>
<td>39.4%</td>
<td>42</td>
<td>40.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Experimental</td>
<td>8</td>
<td>15.1%</td>
<td>24</td>
<td>45.3%</td>
<td>21</td>
<td>39.6%</td>
<td>0.309</td>
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<tr>
<td>Control</td>
<td>13</td>
<td>25.5%</td>
<td>17</td>
<td>35.3%</td>
<td>21</td>
<td>41.2%</td>
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</tr>
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<td>Age in years</td>
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<td></td>
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<td></td>
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<tr>
<td>14-16</td>
<td>13</td>
<td>23.6%</td>
<td>22</td>
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<td>20</td>
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<td>16.3%</td>
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<td>Complete family</td>
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<tr>
<td>Single Parent or Sibling</td>
<td>8</td>
<td>22.2%</td>
<td>12</td>
<td>33.3%</td>
<td>16</td>
<td>44.4%</td>
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<tr>
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<td>40.0%</td>
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</tr>
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<td>4+ Rooms</td>
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<td>15.4%</td>
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<td>23.1%</td>
<td>8</td>
<td>61.5%</td>
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<td>12</td>
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<td>12.9%</td>
<td>12</td>
<td>38.7%</td>
<td>15</td>
<td>48.4%</td>
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<td></td>
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<tr>
<td>Form 3</td>
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<td></td>
</tr>
<tr>
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<td>55.6%</td>
<td>2</td>
<td>22.2%</td>
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</tr>
<tr>
<td>Catholic</td>
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<td>9</td>
<td>29.0%</td>
<td>15</td>
<td>48.4%</td>
<td>0.456</td>
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<tr>
<td>Muslim</td>
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<td>0.0%</td>
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<td>80.0%</td>
<td>1</td>
<td>20.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
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<td>20.0%</td>
<td>5</td>
<td>50.0%</td>
<td>3</td>
<td>30.0%</td>
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</tr>
<tr>
<td>Pentecostal</td>
<td>6</td>
<td>15.0%</td>
<td>16</td>
<td>40.0%</td>
<td>18</td>
<td>45.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protestant</td>
<td>6</td>
<td>33.3%</td>
<td>7</td>
<td>38.9%</td>
<td>5</td>
<td>27.8%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Generally, the number of participants who had suicidal ideations quite often (n=42, 40.4%) was close to that of those who had ideations sometimes (n=41, 39.4%) and a much lower number rarely had suicidal ideations (21%). This indicates that most of the suicidal adolescents had severe levels of suicidal ideations. Participants in the experimental group had a higher prevalence in the category of suicidal ideations sometimes, in comparison to the control group (45.3% vs. 33.3%); whereas, those in the control group had a higher prevalence of suicidal ideations quite often (41.2% vs. 39.6%) compared to the experimental group. However, the severity of suicidal ideations did not differ significantly (p=0.309), in the two study groups.

A higher number (44.9%) of older adolescents thought of suicide more often than younger adolescents (36.4%) whereas, a higher number of younger adolescents thought of suicide 'sometimes' (40% vs. 38.8%) and rarely' (23.6% vs. 16.3%) compared to older adolescents. Although statistically insignificant (p=0.585), it seems that older adolescents had severe levels of suicidal ideations in comparison to younger adolescents. Further analysis by the type of caregiver reveal that a higher number of participants (44.4%) living with single parents or siblings thought of suicide more than those with both parents or those living with a guardian. Slightly more than half (52.6%) of participants who lived with relatives or guardians had suicidal ideations sometimes. However, the difference was insignificant (p=0.67).

More than half (61.5%) of the participants with severe levels of suicidal ideations lived in a house with more than four rooms and only a few (15.4%) of those in a four-roomed house had less severe SI. Therefore, the propensity to get suicidal ideations was higher for those with a slightly higher socioeconomic status, given that most of those living in one-roomed houses (n = 12, 23.5%) rarely thought about suicide compared to those in two to three-roomed houses (n = 7, 17.5%).
Nevertheless, the differences between the frequency of suicidal ideations and age, gender, care-giver, year of study, socioeconomic status, and religious affiliations were statistically insignificant. This implies that the frequency of suicidal ideations was not necessarily influenced by any of these sociodemographic characteristics.

Likelihood of suicide attempt by sociodemographics

The severity of SB was further assessed according to the self-reported likelihood of committing suicide according to SBQ-R question four, 'how likely is it that you will attempt suicide someday?' The responses were put into three categories of those who were 'unlikely' to commit suicide, those who were 'likely', and those who were 'very likely' to commit suicide. Since the counts were less than five, a fisher's exact test was used instead of a chi-square test to show whether the association between suicidal likelihood and the demographic factors was significant. Table 4.9 illustrates the association between the participants’ likelihood of attempting suicide and their sociodemographic characteristics.

Table 4.9: Sociodemographic Distribution of Likelihood of Suicidal Attempt

<table>
<thead>
<tr>
<th>Socio demographic characteristics</th>
<th>Unlikely</th>
<th>Likely</th>
<th>Very likely</th>
<th>Chi-square</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>76</td>
<td>73.1</td>
<td>22</td>
<td>21.2</td>
<td>6</td>
</tr>
<tr>
<td>Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>35</td>
<td>66.0</td>
<td>14</td>
<td>26.4</td>
<td>4</td>
</tr>
<tr>
<td>Control</td>
<td>41</td>
<td>80.4</td>
<td>8</td>
<td>15.7</td>
<td>2</td>
</tr>
<tr>
<td>Age in years</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-16</td>
<td>39</td>
<td>70.9</td>
<td>14</td>
<td>25.5</td>
<td>2</td>
</tr>
<tr>
<td>17-22</td>
<td>37</td>
<td>75.5</td>
<td>8</td>
<td>16.3</td>
<td>4</td>
</tr>
<tr>
<td>Care giver</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete family</td>
<td>35</td>
<td>71.4</td>
<td>11</td>
<td>22.4</td>
<td>3</td>
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<tr>
<td>Non-family</td>
<td>13</td>
<td>68.4</td>
<td>6</td>
<td>31.6</td>
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</tr>
<tr>
<td>Single Parent or Sibling</td>
<td>28</td>
<td>77.8</td>
<td>5</td>
<td>13.9</td>
<td>3</td>
</tr>
<tr>
<td>Gender</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>52</td>
<td>75.4</td>
<td>12</td>
<td>17.4</td>
<td>5</td>
</tr>
<tr>
<td>Male</td>
<td>24</td>
<td>68.6</td>
<td>10</td>
<td>28.6</td>
<td>1</td>
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<tr>
<td>Number of rooms</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1 Room</td>
<td>41</td>
<td>80.4</td>
<td>9</td>
<td>17.6</td>
<td>1</td>
</tr>
<tr>
<td></td>
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</tr>
</tbody>
</table>

139
The results captured in Table 4.9 reveal that overall, majority of respondents were unlikely to attempt suicide (n=76, 73.1%). Only a minority (n=6, 5.8%) were very likely to commit suicide. A higher number of participants in the experimental group were likely (26.4% vs. 15.7%) and very likely (7.6% vs. 3.9%) to attempt suicide in comparison to those in the control group. Although the participants in the experimental and control groups did not differ significantly (p=0.449) in their likelihood of suicidal attempts, those in the experimental group indicated more severe SB in comparison to the control group.

The majority of older adolescents (17-22 years old) (n=37, 75.5%) and higher numbers of those being taken care of by single parents or siblings (n=28, 77.8%), females (52, 75.4%), those living in one-roomed houses (n=41, 80.4%), those in their fourth form (n = 8, 88.9%) and Muslims (n = 4, 80%) were the least likely or unlikely to attempt suicide compared to their counterparts. However, a minority (8.2%) of the older adolescents and respondents from single parents or siblings’ families (8.3%), females (7.2%), those of higher socioeconomic status (15.4%), the form fours (11.1%), and Muslims (20%) were very likely to attempt suicide. There was diverse SB likelihood within similar sociodemographic features where some participants were
unlikely to commit suicide and still a relatively good number of them were very likely to attempt suicide. However, in all these categories, the association with suicidal attempt likelihood was insignificant.

The participants who were rated relatively higher on the likelihood of attempting suicide were those who were being taken care of by non-immediate family members (31.6%), males (28.6%), and those from a relatively higher socioeconomic status (30.8%). Statistically, the association was insignificant, implying that the likelihood of a suicide attempt was not influenced by any of the named sociodemographic characteristics. Nevertheless, considering the devastating effects of suicidal deaths, it is worth noting that there were still some participants in the mentioned categories who had severe levels of SB and these are at a high risk of attempting suicide.

Severity of depressive disorders

The BDI-II test scores were used to determine the DD severity levels among the participants as indicated by borderline levels, moderate, severe, or extreme levels. The chi-square tests were used in determining the association between the participants' demographic characteristics and their DD severity levels. Table 4.10 shows the numbers and percentage of participants in the different severity levels of DD.
### Table 4.10: Sociodemographic Distribution of DD Severity Levels

<table>
<thead>
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<th>Socio demographic factors</th>
<th>Borderline</th>
<th>Moderate</th>
<th>Severe</th>
<th>Extreme</th>
<th>Chi-square</th>
<th>Sg</th>
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<td></td>
<td>n</td>
<td>%</td>
<td>N</td>
<td>%</td>
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<td></td>
</tr>
<tr>
<td>Overall</td>
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<td>49</td>
<td>47.1</td>
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<td></td>
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<td>Experimental</td>
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<td>45.3</td>
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<td>Form 2</td>
<td>3</td>
<td>9.7</td>
<td>17</td>
<td>54.8</td>
<td>10</td>
<td>32.3</td>
</tr>
<tr>
<td>Form 3</td>
<td>1</td>
<td>3.4</td>
<td>11</td>
<td>37.9</td>
<td>13</td>
<td>44.8</td>
</tr>
<tr>
<td>Form 4</td>
<td>0</td>
<td>0</td>
<td>5</td>
<td>55.6</td>
<td>3</td>
<td>33.3</td>
</tr>
<tr>
<td>Religious affiliation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A high number of participants were diagnosed with moderate depression (n=49, 47.1%), followed by severe depression (n=37, 35.6%), borderline depression (n=11, 10.6%) and just a few of them had extreme depression (n=7, 6.7%). The findings further point out that majority of the suicidal adolescents (82.7%) presented with both moderate and severe levels of DD compared to only a few on extreme and borderline levels. This implies that the levels of DD were on the higher average (moderate and severe) since only a few were on the lowest level (10.6%) and the highest levels (6.7%).

A higher number of participants in the experimental group compared to the control group presented with severe (37.7% vs. 33.3%) and extreme (7.6% vs. 5.9%) levels of DD while those in the control group, unlike the experimental group, had a higher prevalence of the borderline (11.8% vs. 9.4%) and moderate (49% vs. 45.3%) levels of DD. Although statistically insignificant, participants in the experimental group had slightly severe levels of DD compared to those in the control group. Focusing on key demographic attributes of DD, it is notable that the younger adolescents had less severe levels of DD connoted by their higher numbers in moderate (50.9% vs. 42.9%) and borderline depression (14.6% vs. 6.1%) in comparison to the older ones. On the other hand, older adolescents had severe DD since they had a higher prevalence of severe (42.9% vs. 29.1%) and extreme (8.2% vs. 5.5%) levels of DD in comparison to the younger ones. Although the association between age and the severity of DD was not significant (p=0.303), it is clear that the...
older adolescents seemed to be more severely depressed compared to the younger ones.

A slightly higher number of females were on extreme (8.7% vs. 2.9%) and severe (36.2% vs. 34.3%) levels of depression compared to males; whereas males were more on the moderate (48.6% vs. 46.4%) and borderline (14.3 vs. 8.7%) levels of DD. These findings reveal that females had more severe levels of depression than males. Regarding the year of study, there were more form threes with severe (44.8%) and extreme (13.8%) levels of DD compared to form fours (33.3 & 11.1%), form twos (32.3% & 3.2%), and ones (31.4% & 2.9%) on severe and extreme levels respectively. This indicates that form threes were more depressed. However, none of the sociodemographic characteristics were significantly associated with the severity levels of DD. The study findings, therefore, imply that the sociodemographic characteristics did not significantly influence the severity levels of DD.

4.2.6 Risk factors for SB among respondents

Objective three sought to examine the risk factors for SB among adolescents from the informal settlements of Nairobi County. Baseline data (n=1040) from the sociodemographic questionnaire, Likert scale rating on the stressors, and the three standardized tools were analyzed to determine the risk factors for SB. Since the scores were continuous, comparison of means tests used independent unpaired t-test in comparing exactly two independent groups while ANOVA was used whenever three or more independent groups were involved. Both tests resulted in a p-value that was used to determine the statistical significance of the association. Summary statistics such as means and standard deviation of the test scores were also presented to identify the levels of sociodemographic characteristics that presented a greater risk for SB.

Sociodemographic risk factors associated with SB
In determining the sociodemographic risk factors for SB, the SBQ-R average scores, and the standard deviation at baseline were analyzed with sociodemographic variables. In the comparison of means, the t-test was used for a variable with two groups and one-way ANOVA for a variable with three or more groups. A p-value (p≤ 0.05) of less or equal to 0.05 indicates a significant difference in the mean scores of SB and the sociodemographic characteristics hence, an association with the disorders. Table 4.11 demonstrates the relationship between SB and the respondents’ sociodemographic characteristics.

Table 4.11: Association between Sociodemographic Factors and SB

<table>
<thead>
<tr>
<th>Sociodemographic factors</th>
<th>Mean</th>
<th>SD</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>4.84</td>
<td>2.85</td>
<td></td>
</tr>
<tr>
<td>Age in years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-16</td>
<td>4.76</td>
<td>2.81</td>
<td>0.307</td>
</tr>
<tr>
<td>17-22</td>
<td>4.95</td>
<td>2.9</td>
<td></td>
</tr>
<tr>
<td>Care giver</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete family</td>
<td>4.71</td>
<td>2.73</td>
<td>0.035*</td>
</tr>
<tr>
<td>Non-family</td>
<td>5.37</td>
<td>3.29</td>
<td></td>
</tr>
<tr>
<td>Single Parent or Sibling</td>
<td>4.81</td>
<td>2.81</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>5.19</td>
<td>3.09</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Male</td>
<td>4.47</td>
<td>2.52</td>
<td></td>
</tr>
<tr>
<td>Number of rooms in their house</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Room</td>
<td>4.79</td>
<td>2.74</td>
<td>0.785</td>
</tr>
<tr>
<td>2-3 Rooms</td>
<td>4.86</td>
<td>2.84</td>
<td></td>
</tr>
<tr>
<td>4+ Rooms</td>
<td>4.99</td>
<td>3.34</td>
<td></td>
</tr>
<tr>
<td>Religious affiliation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholic</td>
<td>4.93</td>
<td>2.92</td>
<td>0.61</td>
</tr>
<tr>
<td>Muslim</td>
<td>4.72</td>
<td>2.96</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>4.5</td>
<td>2.53</td>
<td></td>
</tr>
<tr>
<td>Pentecostal</td>
<td>4.9</td>
<td>2.88</td>
<td></td>
</tr>
<tr>
<td>Protestant</td>
<td>4.91</td>
<td>2.92</td>
<td></td>
</tr>
</tbody>
</table>
The study findings show that the older respondents had a higher level of SBs with a mean score of 4.95 compared to the younger ones at a 4.76 mean score. Those living in more than four roomed houses had a higher SBs mean score (4.99), compared to those in two to three roomed houses (4.86) and those in a one roomed house (4.79). Catholics scored a higher mean (4.93), followed by Protestants (4.91), Pentecostals (4.9), and lastly, Muslims with a lower mean score (2.96). However, the respondents’ age, socioeconomic status, religious affiliation and year of study were not significantly associated with SBs.

Respondents who lived with non-immediate family members had a higher SBs mean score (5.37) in comparison to those living with single parents or siblings (4.81) and those with complete families (4.71). There was a significant association (p=0.035) between the type of caregiver and having SBs. The findings, therefore, indicate that participants who lived with guardians or none-immediate family members were at a higher risk of engaging in SBs compared to those who lived with both parents or with a single parent or siblings.

Regarding the respondents’ gender, females had a higher SBs mean score (5.19) compared to males (4.47). Statistically, there was a significant association between the participants’ gender and SB (p<0.001). This implies that females were at a significantly higher risk of SBs than males. Overall, the findings imply that the sociodemographic risk factors for SBs were being in the female gender and having a non-immediate family member as the care-giver.
Suicidal plan and attempt as risk factors for suicide

To find out how some SB features were associated with each other, two-way frequencies and a chi-square test was conducted, and the results are indicated in Tables 4.12, 4.13, and 4.14. The association between the future likelihood of attempting suicide per the respondents’ severity of SBs- categorized as rare or no suicidal ideations, suicidal plans, or suicidal attempts, is presented in Table 4.12.

Table 4.12: Association between SB and Likelihood of Suicide Attempt (SA)

<table>
<thead>
<tr>
<th>Suicide ideation, plan and attempt</th>
<th>SA Likely</th>
<th>%</th>
<th>SA Unlikely</th>
<th>%</th>
<th>Chi-square</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No/ brief Ideation</td>
<td>16</td>
<td>1.86</td>
<td>843</td>
<td>98.14</td>
<td>&lt;0.001*</td>
<td></td>
</tr>
<tr>
<td>Plan</td>
<td>19</td>
<td>14.62</td>
<td>111</td>
<td>85.39</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attempt</td>
<td>16</td>
<td>32.65</td>
<td>33</td>
<td>67.35</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As seen in Table 4.12, the study findings indicate that the majority of respondents with no suicidal ideations or with only brief ideations (98.14%) were unlikely to attempt suicide. This implies that respondents who hardly thought of suicide were not at risk of suicide attempts. Nevertheless, a higher number of those who had previously attempted suicide (32.65%) were likely to attempt suicide. Still, a good number (14.6%) of those with suicidal plans were likely to attempt suicide. The chi-square test established a statistically significant relationship (p<0.001) between the previous SB and the likelihood of suicidal attempts. The findings, therefore, imply that respondents who had attempted suicide were at a higher risk of further suicide attempts hence, a high risk of dying by suicide.

Table 4.13 illustrates the association between severity levels of SB and the frequency of suicidal ideations among the respondents.

Table 4.13: Suicidal Ideation Severity and SB Categories

<table>
<thead>
<tr>
<th>Frequency of Suicidal Ideation</th>
<th>No/ brief Ideation</th>
<th>Suicidal Plans</th>
<th>Suicidal Attempt</th>
<th>Chi-square</th>
</tr>
</thead>
</table>
The results indicate that most of the respondents who rarely had suicidal ideations (93.58%) were at the lower level of SB and only a very minimal number in this category had suicidal attempts (1.4%). Therefore, respondents who hardly thought of suicide were not at risk of planning or attempting suicide. However, a high number of those who often (more than three times in two weeks) thought of suicide had suicidal plans (51.28%) and had attempted suicide (33.3%). There was a statistically significant relationship (p<0.001) between the frequency of suicidal ideations and attempts. This implies that the respondents with a higher frequency of suicidal ideations were at a greater risk of planning and attempting suicide. The next table (Table 4.14) displays the association between suicidal disclosure and the frequency of suicide ideations (SI).

<table>
<thead>
<tr>
<th>Seeking help</th>
<th>SI Rarely</th>
<th>SI Sometimes</th>
<th>SI Often</th>
<th>Chi-square</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Didn't disclose</td>
<td>793 87.82</td>
<td>69 7.64</td>
<td>41 4.54</td>
<td>&lt;0.001*</td>
<td></td>
</tr>
<tr>
<td>Disclosed once</td>
<td>54 51.43</td>
<td>32 30.48</td>
<td>19 18.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disclosed more than once</td>
<td>9 29.03</td>
<td>5 16.13</td>
<td>17 54.84</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The majority (87.8%) of respondents with minimal suicidal ideations hardly disclosed their SB whereas, a high number (54.84%) of the respondents who often thought of suicide disclosed more than once. A high number of those who had suicidal ideations sometimes (30.48%) disclosed only once. The association between suicidal disclosure and frequency of ideations was significant (p<0.001). The findings indicate that respondents who had frequent suicidal ideations disclosed their suicidal
intent more. This seems to imply that more respondents who are at a very high-risk of suicidality tend to seek help persistently in comparison to those who are not at high risk.

Overall, the study results captured in Tables 4.12, 4.13, and 4.14 reveal that the respondents who were at very high risk of future suicidal plans and attempts were those with a high frequency of suicidal ideations, those who disclosed their suicidal intent more, and those who had previously attempted suicide. This implies that a history of suicide attempts, frequent suicidal ideations and persistently talking about suicide or threatening to execute suicide, are risk factors for SB.

Stressors that are risk factors for SB

A self-rated Likert scale for diverse life experiences that are likely to cause stress leading to SB was used to evaluate the respondents' level of agreement or disagreement. A logistic regression model was used to establish the relationship between the rating of each of the stressors and SB. The stressors were found to be highly correlated with each other and could cancel each other out in a multiple logistic regression model. Therefore, separate logistic models were fitted for each of the predictors and average marginal effects were estimated.

Table 4.15 presents the logistic regression model (average marginal effect and 95% Confidence Interval) fit to assess the relationship between the agreements that the stated life experiences lead to SB.

<table>
<thead>
<tr>
<th>Stressors</th>
<th>Not suicidal n (%)</th>
<th>Suicidal n (%)</th>
<th>Marginal effect Estimate (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling hopeless, worthless Relationships problems</td>
<td>245(30.0)</td>
<td>171(76.3)</td>
<td>0.289 (0.250, 0.329)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Traumatic Experiences</td>
<td>269(33.0)</td>
<td>141(62.9)</td>
<td>0.196 (0.151, 0.241)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>170(20.8)</td>
<td>100(44.6)</td>
<td>0.180 (0.133, 0.227)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
The results indicated in Table 4.15 for the association between the life stressors and the tendency to have or not have SB, show that majority (76.3%, n=171) of the respondents who were suicidal had feelings of hopelessness and worthlessness. Still, a high number of the suicidal respondents had financial problems (73.7%), academic challenges (67.9%), relationship problems (62.9%), and family issues (56.1%). A good number (59.4%) of the suicidal respondents had also lost a close family member, had mental problems (53.1%), and had experienced trauma (44.6%). It is therefore notable that suicidal individuals had higher levels of agreement with the stated stressors. All the effects were positive, an indication that respondents who agreed with any of the statements were likely to have suicidal tendencies.

There was a statistically significant relationship (p<0.001), which implies that all the listed life experiences were associated with SB, and thus, they all increase the risk for SB. However, each stressor was found to be associated at varying degrees. Feelings of hopeless and worthless were the most severe risk factors for SB. Relationship problems followed, and then traumatic experiences, mental disturbances, family problems, alcohol or substance abuse, physical illness, academic challenges, financial problems, and finally death of a dear one. This implies that all the stated stressors were risk factors for SB, however, feelings of hopelessness and

<table>
<thead>
<tr>
<th>Stressor</th>
<th>Yes</th>
<th>No</th>
<th>Z Value</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental problems</td>
<td>231(28.3)</td>
<td>119(53.1)</td>
<td>0.170 (0.124, 0.216)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Family problems</td>
<td>258(31.6)</td>
<td>125(56.1)</td>
<td>0.164 (0.117, 0.210)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Alcohol, substance abuse</td>
<td>112(13.7)</td>
<td>62(27.7)</td>
<td>0.145 (0.088, 0.201)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Physical illnesses</td>
<td>243(29.8)</td>
<td>111(49.6)</td>
<td>0.138 (0.090, 0.186)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Academic Challenges</td>
<td>395(48.4)</td>
<td>152(67.9)</td>
<td>0.134 (0.083, 0.184)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Financial problems</td>
<td>473(58.0)</td>
<td>165(73.7)</td>
<td>0.117 (0.064, 0.171)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Death of a close family member</td>
<td>351(43.0)</td>
<td>133(59.4)</td>
<td>0.110 (0.061, 0.159)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
worthlessness, as well as relationship problems and traumatic experiences, posed a higher risk for suicidality among the respondents.

**PTSD and/or DD as risk factors for SB**

The respondents were categorized into four groups based on whether they had PTSD only, DD only, both PTSD and DD, and whether they had none of these two conditions. The distribution by whether they were pathologically or non-pathologically suicidal was reported using frequencies and percentages. Furthermore, the association between these two variables was tested for significance using the chi-square test of association. The association between having and not having SB with having PTSD, DD, both or none is illustrated in Table 4.16.

<table>
<thead>
<tr>
<th>PTSD, DD or both</th>
<th>No SB</th>
<th>Pathological SB</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>None</td>
<td>467</td>
<td>93.78</td>
<td>31</td>
</tr>
<tr>
<td>PTSD only</td>
<td>73</td>
<td>77.66</td>
<td>21</td>
</tr>
<tr>
<td>DD only</td>
<td>125</td>
<td>87.41</td>
<td>18</td>
</tr>
<tr>
<td>Both DD &amp; PTSD</td>
<td>141</td>
<td>47.80</td>
<td>154</td>
</tr>
</tbody>
</table>

According to the test of association results depicted in Table 4.16, it is evident that there was a statistically significant relationship (p<0.001) between SB with DD and PTSD separately and in combination. The majority (n=467, 93.8%) of respondents who had none of the three disorders did not have SB and only a few (6.2%) of them had SB. This implies that most of the respondents who had no DD or PTSD were not at risk of SB. Notably, individuals who had both PTSD and DD (n = 154, 52.2%) were more likely to exhibit suicidal tendencies compared to those with PTSD only (n = 21, 22.34%) or DD only (n = 18, 12.59%). The results imply that
respondents with few or no major psychiatric disorders are less likely to be suicidal. Therefore PTSD and DD separately or in combination are risk factors for SB.

Multivariate relationship between SB and DD, PTSD, both or none

Since an association between SB, DD, and PTSD had been established in Table 4.16, in Table 4.17 a logistic regression model was used to estimate the odds ratios for the three disorders. The regression model helped to quantify the magnitude of the disorders relationship at baseline and it also tested the significance of the estimated odds ratios.

<table>
<thead>
<tr>
<th>PTSD and/or depression</th>
<th>Total number</th>
<th>Pathological SB n</th>
<th>Pathological SB %</th>
<th>OR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>498</td>
<td>31</td>
<td>6.22</td>
<td>Ref*</td>
<td></td>
</tr>
<tr>
<td>Depression only</td>
<td>143</td>
<td>18</td>
<td>12.59</td>
<td>2.169 (1.155, 3.968)</td>
<td>0.013</td>
</tr>
<tr>
<td>PTSD only</td>
<td>94</td>
<td>21</td>
<td>22.34</td>
<td>4.334 (2.340, 7.914)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Both</td>
<td>295</td>
<td>154</td>
<td>52.20</td>
<td>16.453 (10.849, 25.662)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

The study results demonstrated in Table 4.17 indicate that the comorbidity of both PTSD and DD had the highest odds ratio (OR=16.45; CI: 10.85, 25.66; p<0.001) for SB in comparison to PTSD only (OR=4.334; CI: 2.34, 7.914) and DD (OR=2.169; CI: 1.155, 3.968). It is evident from the results that there was a significant relationship (p=0.013 and p<0.001) between SB and the three disorders at the multivariate association. The results imply that a greater association is indicated between SB and having both PTSD and DD, followed by that of PTSD only and finally that of DD only. Therefore while having PTSD and DD separately poses a risk to SB, having the two disorders implies greater risk.

Sociodemographic risk factors for DD and PTSD
The data presented in Table 4.18 captures the association between the sociodemographic characteristics and PTSD as well as DD.

<table>
<thead>
<tr>
<th>Sociodemographic factors</th>
<th>PCL scores (PTSD)</th>
<th>BDI scores (Depression)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Overall</td>
<td>25.28</td>
<td>17.48</td>
</tr>
<tr>
<td>Age in years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14-16</td>
<td>23.50</td>
<td>17.03</td>
</tr>
<tr>
<td>17-22</td>
<td>27.55</td>
<td>17.81</td>
</tr>
<tr>
<td>Care giver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete family</td>
<td>23.90</td>
<td>17.13</td>
</tr>
<tr>
<td>Non-family</td>
<td>28.22</td>
<td>18.22</td>
</tr>
<tr>
<td>Single Parent or Sibling</td>
<td>26.10</td>
<td>17.53</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>27.67</td>
<td>17.00</td>
</tr>
<tr>
<td>Male</td>
<td>22.74</td>
<td>17.65</td>
</tr>
<tr>
<td>Number of rooms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Room</td>
<td>25.90</td>
<td>17.20</td>
</tr>
</tbody>
</table>
The chi-square test results in Table 4.18 show that gender, age, year of study, and the caregiver were significantly (p≤ 0.05) associated with DD. Therefore, being of female gender and living with a guardian makes one more vulnerable to the development of DD. The findings also show that older adolescents and form threes were at a higher risk of developing DD. Most of the form threes are at a high risk of SB since they are likely to be in the category of older adolescents aged 17 to 22 years old together with the form fours. The study therefore indicates that sociodemographic risk factors for DD were: gender (p=<0.001), year of study (p=<0.001), caregiver (p=0.003) and age (p=0.024). Similarly, the sociodemographic risk factors for PTSD were being of female gender (p=<0.001), in form three (p=<0.001), living with a guardian (who is a non-immediate family member) (p=0.014), and being an older adolescent (p=<0.001).

4.2.7 Association between SB, PTSD, and DD

Objective 4 of this study sought to assess the relationship between SB, PTSD, and DD among the suicidal adolescents (n=104) at different timelines.

Disorders association at different time points
Pearson correlation coefficient was used to quantify the direction and strength of the relationship between the SBQ, BDI, and PCL scores at different time points. A correlation test was then conducted to test the hypothesis that the estimated correlation coefficient between SB, DD, and PTSD was significantly different from zero. The results in Table 4.19 illustrate the strength and direction of correlation between different binary sets of SB, DD, and PTSD at different timelines, from baseline, through the midline to end-line.

Table 4.19: Correlation between Pairs of Disorders at Different Time points

<table>
<thead>
<tr>
<th>Time point</th>
<th>Pairs of disorders</th>
<th>Correlation</th>
<th>Correlation test (Sig)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>SB</td>
<td>0.396</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Baseline</td>
<td>SB</td>
<td>0.442</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Baseline</td>
<td>PTSD</td>
<td>0.553</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Midline</td>
<td>SB</td>
<td>0.561</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Midline</td>
<td>SB</td>
<td>0.667</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Midline</td>
<td>PTSD</td>
<td>0.669</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>End-line</td>
<td>SB</td>
<td>0.585</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>End-line</td>
<td>SB</td>
<td>0.667</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>End-line</td>
<td>PTSD</td>
<td>0.723</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

In comparing the strength of the association between the pairs of disorders, a significantly stronger association was found at end-line; between PTSD and DD (r = 0.723, p <0.001), between SB and DD (r = 0.667, p <0.001) and SB and PTSD (r = 0.585, p <0.001). This was followed by midline between PTSD and DD (r = 0.669, p <0.001), SB and DD (r = 0.667, p <0.001) and between SB and PTSD (r = 0.561, p <0.001). The least correlation was at baseline between PTSD and DD (r = 0.553, p <0.001), SB and DD (r = 0.442, p <0.001) and SB and PTSD (r = 0.396, p <0.001). At baseline the correlation was at its lowest then it increased further into the study and was at its highest in the end-line.
The findings indicate a moderate (r =0.396 to 0.723) positive correlation that is statistically significant (p<0.001) between SB, DD, and PTSD. A higher association was noted between PTSD and DD, followed by SB and DD and finally SB and PTSD. This implies that the three disorders influence each other. All the correlation coefficients are positive implying that they change in the same direction, an increase in one disorder leads to an increase in the others. Likewise, if one disorder reduces, the others reduce.

Direction of the disorders’ association at different time points

The direction of the disorders was further assessed by looking at the percentage of participants (n=104) who had clinically significant levels of each of the three disorders at different time points from baseline to end-line. In Figure 4.1 the percentages of participants with DD, PTSD, and SB at different time points are displayed.

![Figure 4.1: Mean Score of SB, DD and PTSD at Different Time points](image_url)

*Figure 4.1: Mean Score of SB, DD and PTSD at Different Time points*
As illustrated in Figure 4.1, the disorders moved in the same direction from baseline to the midline and then at the end-line. The results indicate that all the study participants (100%) had the three disorders at baseline. The percentage of the study participants who presented with each of the study disorders continued to drop hence, there was a reduction in the number of participants presenting with each disorder from the midline to end-line in each treatment group. Therefore, there is a correlation between DD, PTSD, and SB indicated by their decrement in the same direction.

Although the number of participants who had the disorders reduced in the two groups, the experimental group had a much larger reduction, owing to the intervention that was administered to the experimental group and not the control group. The slight reduction in the control group participants may have resulted from the assessment which is a form of self-disclosure. Despite the anonymity and confidentiality observed, having been picked out for post-test assessment may have implied that someone has noticed the expressed distress. Studies have established that disclosure of mental illnesses is effective in managing self-stigma and motivating cognitive processing (Corrigan et al., 2010; Eskin, 2003; Frattarolli, 2006). Additionally, the questions that pointed out what the respondents were experiencing may have normalized their experiences, thus reducing stigma on noting that what they were going through are the usual mental health problems. However, the mean reduction in the control group was insignificant (Table 4.21) compared to that of the experimental group.

4.2.8 Efficacy of DBT PE in treatment of SB, DD, and PTSD

Objective five sought to evaluate the effectiveness of DBT PE in reducing SB and its comorbidity DD and PTSD among suicidal high school students with SB, PTSD, and DD. In data analysis, the tests mean difference was compared at different
time points within and between the control and experimental groups to determine DBT PE effectiveness and its sustainability. Further, a logistic regression model was used to estimate the effect size while controlling for sociodemographics and stressor variables.

Efficacy of DBT PE on SB

In determining the efficacy of DBT PE on SB averages and standard deviations of the participants SBQ, PCL, and BDI scores at baseline, midline, and end-line were compared. A t-test was used to assess whether the scores significantly differed between the control and experimental groups, as well as within the groups after the administration of DBT PE at midline and end-line. The significance of the mean differences between and within the control and experimental groups at baseline, midline, and end line are captured in Table 4.20.

<table>
<thead>
<tr>
<th>Suicidal Behavior</th>
<th>Baseline Mean (Std)</th>
<th>Midline Mean (Std)</th>
<th>End-line Mean (Std)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control group:</td>
<td>9.57(2.56)</td>
<td>9.04(3.25)</td>
<td>8.24(3.56)</td>
<td>0.169</td>
</tr>
<tr>
<td>Experimental:</td>
<td>10.3(2.89)</td>
<td>5.74(2.84)</td>
<td>4.81(2.75)</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>T-test (Sig)</td>
<td>0.173</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td></td>
</tr>
</tbody>
</table>

As seen in Table 4.20, there was a very slight SB mean difference at baseline between the experimental group (10.3) and the control group (9.57). The slight mean difference between the two groups at baseline was statistically insignificant (p=0.173). This was necessary for a randomized controlled experimental study so that the treatment effect on the disorders can be fully attributed to the therapeutic intervention. However, at midline, the decreased mean of the experimental group (5.74) led to a statistically significant difference (p<0.001) in the mean score between the two groups. A further mean drop between the control (8.24) and experimental (4.81) groups led to a statistically significant difference (p<0.001) at the end-line.
Although initially, the two groups compared well in their SB mean, a notable difference was clear between the groups at midline and end-line which indicates a great drop in the experimental group mean score. The significant difference in the post-test SB means between the two groups is an indication that the application of the intervention in the experimental group had a great impact on SB.

Focusing on the mean difference within the study groups at different time points, it is notable that there was a great mean drop for the experimental group from baseline (10.3) to midline (5.74) and this was statistically significant (p<0.001). In the control group, although there was a slight drop from baseline to midline (9.57 to 9.04) SB mean, the mean difference was not statistically significant (p=0.169). The results reflect the effect of DBT PE intervention which was applied to the experimental group between baseline and mid-line and not in the control group. From the study findings, it is therefore clear that DBT PE intervention was effective in reducing SB among the participants.

A similar trend continued further in the experimental group where there was a slight mean drop (5.7 to 4.8) between midline and end-line. In the control group, there was a slight mean difference between midline and end-line (9.0 to 8.2). Since no more intervention was offered after mid-line, a further reduction in the SB mean score between mid-line and end-line for the experimental group implies that the intervention effect was sustainable eight weeks after its application.

Effect size at different time lines

The effect sizes were calculated from the treatment differences with corresponding 95% confidence intervals. The effect of the treatment after controlling for sociodemographic characteristics and stressors is presented in Table 4.21.

Table 4.21: Effect Size of DBT PE on SB
The treatment effect between baseline and midline as well as in between baseline and end-line was statistically significant (p<0.001). The results on the effect size (-0.422 and -0.461) implies that on average, DBT PE led to a 42% decrease in the mean score of SB at midline and a 46% decrease at the end-line. A negative estimate indicates a decrease or the drop in the SB rate for the experimental group compared to the control group.

The insignificant (p=0.797) change between midline and end-line indicates that although the disorders' continued to decrease (-0.029) after the intervention termination, the treatment effect observed at midline persisted. This implies that the participants did not relapse or revert to the baseline SB status eight weeks after therapy termination. Therefore, the results present empirical evidence to establish that DBT PE is an efficacious treatment for SB and the treatment effects are sustainable.

Effect of DBT PE on DD and PTSD

The analysis of the statistical significance in the mean difference of PTSD and DD from baseline, midline, to end line was used to estimate the effectiveness of DBT PE on PTSD and DD. The results are shown in Table 4.22.

Table 4.22: Average Mean Scores of DD and PTSD

<table>
<thead>
<tr>
<th>Disorders</th>
<th>Baseline Mean(Std)</th>
<th>Midline Mean(Std)</th>
<th>End-line Mean(Std)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control group</td>
<td>46.18 (9.99)</td>
<td>42.84(14.26)</td>
<td>42.08(15.85)</td>
<td>0.068</td>
</tr>
<tr>
<td>Experimental</td>
<td>48.49(12.65)</td>
<td>33.60(16.71)</td>
<td>27.15(18.05)</td>
<td>&lt;0.001*</td>
</tr>
</tbody>
</table>
The findings in Table 4.22 indicate a drop in the average scores from baseline to midline then end-line in the two disorders. As expected, the difference in the average scores of both control and experimental groups in PTSD was not significant at baseline (p=0.302). Thereafter, the great drop in the experimental group PTSD mean scores from baseline (48.5) to midline (33.6) leading to a statistically significant difference (p<0.001) is attributed to the intervention. The PTSD mean score continued to decrease eight weeks after the intervention termination from mid-line to end-line (33.6 to 27.2). This indicates that DBT PE intervention led to a significant reduction in the PTSD symptoms and the symptoms continued to reduce after its termination to the end-line.

A similar trend is observed in DD scores just as in PTSD where a statistically insignificant difference (p=0.2) between the two groups was observed at baseline but at mid-line, the two groups differed significantly (p<0.001). This was due to the high reduction of the experimental group DD mean score at midline (17.9 vs 27.7) compared to that of the control group which was almost constant (27.98 vs 27.7) between baseline and midline. The experimental group DD mean score continued to reduce greatly at end-line (13.4) assessment leading to a statistically significant difference (p<0.001) between the two groups at the end-line. This is an indication that DBT PE had a positive effect in reducing DD symptoms and the symptoms continued to reduce after termination hence, the effects were sustainable. Therefore, the study
results imply that DBT PE is an efficacious treatment for PTSD and DD, which are SB comorbid disorders. It was also clear from the study results that the treatment effect was sustainable eight weeks after therapy termination.

The effect of the treatment after controlling for the sociodemographic characteristics and stressors is presented in Table 4.23.

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Time point</th>
<th>Treatment Effect (95% CI)</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTSD Treatment Effect</td>
<td>Baseline vs. Midline</td>
<td>-0.159 (-0.356, 0.038)</td>
<td>0.113</td>
</tr>
<tr>
<td></td>
<td>Baseline vs. End-line</td>
<td>-0.338 (-0.533, -0.142)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>Midline vs. End-line</td>
<td>-0.142 (-0.403, 0.119)</td>
<td>0.285</td>
</tr>
<tr>
<td>DD Treatment Effect</td>
<td>Baseline vs. Midline</td>
<td>-0.445 (-0.608, -0.282)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>Baseline vs. End-line</td>
<td>-0.505 (-0.674, -0.336)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>Midline vs. End-line</td>
<td>0.098 (-0.338, 0.142)</td>
<td>0.425</td>
</tr>
</tbody>
</table>

The data captured in Table 4.23 shows that DBT PE led to a 16% decrease in the mean score of PTSD at midline and a 34% decrease in the end. The treatment effect on PTSD was insignificant between baseline and midline (p=0.113) as well as between midline and end-line (p=0.285). However, it was statistically significant (p<0.001) between baseline and end-line. This may indicate a delay in full manifestation of the intervention effect. The significant treatment effect from baseline to end-line implies that there was a statistically significant decline on PTSD symptoms eight weeks after DBT PE intervention. This proves the sustainability of DBT PE's effect on PTSD.

Focusing on DD, DBT PE led to a statistically significant (p<0.001), 45% decrease in the mean score of DD at midline, and an insignificant (p=0.425), 9% decrease between midline and end-line. Between baseline and end-line there was a
significantly (p<0.001), higher effect size indicated by a 50% decrease in SB mean score. This implies that the effect caused by DBT PE intervention continued after midline and persisted to end-line. In general, it is clear that DBT PE caused a significant change in DD and its effect was sustainable. The study results therefore established the efficacy of DBT PE on SB as well as on PTSD and DD.

4.3 Summary of Key Findings

Data analysis and interpretation identified the following key findings from this study:-

1. In describing the sociodemographic characteristics of the study respondents (Table 4.2), it was notable that the two groups were homogeneous at baseline since they compared so well in the distribution of their sociodemographic characteristics. This was further validated by a chi-square test for association in that there was no statistically significant difference (p>0.05) in the participants' sociodemographic aspects, except for the year of study. Despite the year of study presenting a significant difference, the age difference remained insignificant (p=1.00), so, the similarity of the two groups was still retained.

2. Regarding the prevalence of the disorders SB, DD, PTSD, and their combinations, the study findings depicted in Table 4.3 indicate that SB was highly prevalent (21.5%, n=224) among the high school students. The prevalence of SB with PTSD (17%) was substantial and close to that of SB with DD (16.6%), and that of a combination of the three disorders; SB with both DD and PTSD was a little bit lower (15.0%). On the sociodemographic prevalence, the study findings indicate that females had a significantly higher (p<0.01) prevalence of the three disorders in comparison to males.
Focusing on DD and PTSD, the findings indicate that a high number (42.6%) of the respondents were depressed and a substantial number (37.0%) had PTSD. Still, a good number (28.6%) of the respondents presented with comorbidity of both DD and PTSD. The older adolescents had a significantly higher prevalence of DD, PTSD, and a combination of both in comparison to younger adolescents.

3. The severity levels of SB ranged from suicidal ideations, plans, and attempts with and without intent and also the frequency of ideations and likelihood of suicidal attempts. The study findings show that overall, there was a substantial number of participants who were likely (21.2%, n=22) to attempt suicide and a few (5.8%, n=6) who were very likely to attempt suicide hence, at a very high risk of suicide. About half of participants (51.9%) had suicidal plans and a good number (22.1%) had attempted suicide, whereas the others (26%) had only brief or no suicide ideations. Higher severity of SB was seen in 13.5% of the participants who had attempted suicide with intent.

The severity levels of SB were not influenced by the diverse sociodemographic characteristics, except for the gender presentation of SB with intent. More females (17.7%) than males (5.7%) who attempted suicide had the intent and a higher number of males (20%) than females (16.2%) who had planned suicide had the intent to die. Overall, a high number of the respondents presented with moderate (47.1%) and severe (35.6%) DD and only a few had borderline (10.6%) and extreme (6.7%) levels of DD. The severity of DD was influenced by gender and age where females and older participants had more severe DD.
4. From the study findings, a high frequency of suicidal ideations, SB self-disclosure, and a history of suicidal attempts were predictors for SB. A high frequency of suicidal ideations predicted a higher likelihood of planning and attempting suicide. Respondents who disclosed their SB were also at a higher risk of SB; whereas, those who had previously attempted suicide were more likely to engage in further suicidal attempts.

The findings also revealed that being of the female gender and living with guardians other than parents or siblings were significant risk factors for SB. The study further rated the life experiences that posed as risk factors for SB in their order of severity, where hopelessness and worthlessness ranked highly. This was 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 dear one.

5. PTSD and DD were found to be significant (p<0.001) risk factors for SB. Having a combination of PTSD and DD posed a greater risk for SB than having just one disorder. Further, an association between SB, DD, and PTSD was indicated by a moderate positive correlation (r =0.396 to 0.723) that was statistically significant (p<0.001). The positive correlation implies that the three disorders change in the same direction; that is, when PTSD, DD, or SB increases, there is an increase in the other disorders and vice versa.

6. The study findings proved the efficacy of DBT PE in the treatment of SB and its comorbidities, DD, and PTSD. Although the SB means for the two groups compared so well at baseline, after the administration of DBT PE intervention, there was a statistically significant mean difference for the experimental group.
and not for the control group at the midline. The mean score continued to reduce at the end-line assessment. This indicated the effectiveness of DBT PE in the reduction of SB. Further analysis showed a significant effect size for the treatment from baseline to midline and baseline to end-line. The study, therefore, established the efficacy of DBT PE intervention in the treatment of SB. The results further indicated that the treatment effects were sustainable at end-line, eight weeks after the treatment termination.

7. Finally, although the PTSD and DD mean difference between the control and experimental group was insignificant (p=0.302 and p=0.2) at baseline respectively, the difference between the two groups widened significantly (p=0.003 and p<0.001) at midline. This is attributable to the intervention applied on the experimental group. There was a further statistically significant difference (p<0.001) on PTSD and DD mean scores between the experimental and control groups at end-line. The great drop in the experimental group mean score at midline and end-line in comparison to that of the control group gives evidence in regard to the effectiveness of DBT PE intervention in treating PTSD and DD. Additionally, both PTSD and DD indicated a statistically significant (p<0.001) effect size from baseline to end-line. The findings, therefore, indicate that DBT PE is efficacious in the treatment of SB comorbid disorders, PTSD and DD and the treatment effect is sustainable after the treatment termination.

4.4 Summary
This chapter has presented an analysis, presentation, and interpretation of data for the study. Analyzed sociodemographic characteristics have been described and the rest of the data presented and interpreted as per the study objectives. The study established that DBT PE was an efficacious intervention in the reduction of SB as well as DD and PTSD. It was also found to be effective in sustaining the positive effects among the participants who presented with SB, DD, and PTSD. The next chapter focuses on the discussion of the key study findings and recommendations.
CHAPTER FIVE: DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a discussion of the major findings as related to SB prevalence, severity, risk factors, and its association with DD and PTSD, as well as the efficacy of DBT PE on SB. The key findings have been discussed and related to the existing literature and conclusions have been deduced. The chapter concludes by highlighting the recommendations drawn from the study, areas for future research, and a summary.

5.2 Discussions of Key Findings

Suicidal behavior among adolescents is an area of great concern due to the increasing number of suicides and the adverse effects associated with the loss of a dear one following intentional self-inflicted death. Although DBT PE had been proven effective in reducing SB and its comorbid disorders in developed countries, its effect on SB, PTSD, and DD had not been evaluated in the Kenyan population, before this study. The purpose of the study was therefore to establish the efficacy of DBT PE in the treatment of SB among high school students presenting with SB, PTSD, and DD in the low socioeconomic areas of Nairobi County, Kenya.

To achieve the study objectives, the respondents (n=1,040) were screened at baseline, which helped determine the SB, DD, and PTSD prevalence in objective one and SB risk factors in objective three. The baseline data was necessary for comparing the non-pathological respondents with the pathological ones. From the respondents (n=1,040) in the entire school who participated at baseline a study sample (n=104), was drawn and divided into the experimental (n=53) and control groups (n=51). The study sample (n=104) comprised participants who had the three disorders and...
participated fully in all the assessment tests. Data from this study sample was used to determine the severity of SB, the association between the disorders, and the efficacy of DBT PE in the treatment of the study disorders. The DBT PE intervention was administered to the experimental group only and assessments were done on both groups from baseline, midline to end-line. Analysis of the data obtained was done and results were presented and interpreted. What follows is the discussion of the key findings in the specific study objectives.

5.2.1 Prevalence of SB, PTSD, and DD among respondents

Suicidal behavior is a major public health problem among adolescents hence, the need to determine its prevalence (WHO, 2019). The study findings established a high (21.5%) prevalence of SB among the respondents (1,040) who were screened at baseline. This prevalence was just a little bit higher than the global prevalence of SB among adolescents which was estimated to be 18.0% (Muehlenkamp et al., 2012). However, compared to the prevalence (27.9%) by Palmier (2011) among the school-going adolescents in the Kenyan population, it is slightly lower. The slight prevalence difference could be attributed to the different tools used; unlike the current study which used SBQ-R, thus focusing on different aspects of SB, the study by Palmier (2011) used the Global School-Based Student Health Survey (GSHS) which focused on suicidal ideations.

The SB prevalence in the current study was closer to the prevalence (23.5%) of youths in the informal settlements of Kampala, Uganda (Culbreth et al., 2018). This could be due to a similar socioeconomic set-up. Adolescents from informal settlements are likely to despair in life due to high exposure to traumatic events and financial instability leading to a lack of basic needs (Chang et al., 2013; Onyango &
Tostensen, 2015). The current prevalence is therefore among the normal ranges of those in a similar set-up although slightly higher than the overall global prevalence.

Additionally, the current prevalence (21.5%) is higher than that of the developed countries which ranges from 8.1% to 17.2%. Studies in developed countries have shown a lower prevalence of SB at 10.5% in Europe, 8.1% in Canada, 10.7% in Germany, and 17.2% in China (Georgiades et al., 2019; Kokkevi et al., 2012; Liu et al., 2018; Voss et al., 2019). The deviations may be attributed to the fact that in developed countries the mental health infrastructures are well developed and SB has been decriminalized. Compared to Western and Asian countries, African countries have recorded a much higher prevalence. Studies have indicated diverse prevalence ranging from 19.6% in Uganda, 20% in Nigeria to those higher than the current study at 28.7% in Botswana, 31.9% in Zambia, and 32.3% in South Africa (Korb & Plattner, 2014; Omigbodun, et al., 2008; Swahn et al., 2010; Van Niekerk et al., 2012). The trend corroborates with the WHO (2020) report which shows that although suicide occurs in all regions of the world, the majority (79%) of global suicides occur in low-income and middle-income countries.

The high prevalence of SB in Africa can be explained by the fact that SB is highly stigmatized and not widely recognized as a mental health problem. This may be due to the scarcity of research on mental health in Africa (Sankoh, Sevalie, & Weston 2018). Worse still, suicidal attempts are categorized as criminal offenses in some African countries such as Kenya (Schlebusch & Burrows, 2009). This implies that government policies are yet to acknowledge SB as a mental health problem. This hinders self-disclosure and the accessibility of psychological interventions for distressed persons, leading to the high rates of SB in Africa.
This study also sought to establish the prevalence of SB comorbid with DD and PTSD separately and also in combination. The prevalence of SB comorbid with PTSD was 17%, SB with DD 16.6%, and the three disorders; SB comorbid DD and PTSD 15.0%. This indicates that there was a substantial number of high school students who were suicidal due to DD or PTSD and also a combination of both thus, presenting with comorbid disorders. The Study by Oquendo et al. (2003) concurred with the current study that persons with comorbid DD and PTSD were more likely to have attempted suicide. Oquendo and colleagues explained that since each of the two disorders increases the risk for SB then having a combination of both poses a greater risk to suicidality.

In Korea, a number (17.1%) closer to the current one on suicidal attempts was found in a study by Jeon et al. (2014), among 825 respondents who had MDD. The study by Jeon et al. (2014) also noted significantly greater suicidal attempts in the subjects who had experienced any trauma than in those who had not. However, unlike the current study which focused on the general SB, the study by Jeon studied suicide attempts only. The high level of comorbidity indicates that SB is highly prevalent among adolescents with PTSD and DD. Persons with comorbid DD and PTSD are usually in great psychological distress and thus, at a very high risk of committing suicide (Khasakhala et al., 2013; Ndetei et al., 2010).

The study noted a higher prevalence of DD alone (42.6%) and PTSD alone (37.8%) indicating that these two disorders were highly prevalent among the respondents. Out of the 440 respondents with DD alone, 175 of them had both SB and DD, which implies that 40% of the depressed adolescents had SB. Similarly, Coryell and Young (2005) estimated that 40% of the depressed patients were suicidal. In a meta-analysis of 65 studies globally, Dong et al. (2019) found that 31% of the
depressed patients were suicidal. The current study therefore, compares well with the percentages of suicidal-depressed persons found in the two longitudinal studies with a large (n=785 and n=27,340) sample of depressed patients across the globe (Coryell & Young, 2005; Dong et al., 2019).

In the current study the prevalence of DD alone (42.6%) was slightly higher than that (36%) of the Tanzanian youths (Kuringe et al., 2019) and that (26.4%) of public high school students in Nairobi County (Khasakhala, Ndetei, Mutiso, Mbwayo, and Mathai, 2012). In their study, Othieno et al. (2014) agreed that the prevalence of DD is higher among Kenyan youths from low socioeconomic status. The variation in the prevalence of the current study and that of Khasakhala et al., (2012) in the Kenyan population could be attributed to the diverse settings, different assessment tools, and the time difference in the age of the study. The study by Khasakhala et al. (2012) was in diverse high school set-ups whereas the current study was in the day-mixed high schools located in the informal settlements of Nairobi. In informal settlements, the majority of adolescents are exposed to high levels of trauma and financial constraints. The researcher observed that in the schools under study, about half of the students had inconsistent school attendance due to outstanding school fees arrears.

The study findings (Table 4.4) indicate that older adolescents aged 17-22 years, had a higher prevalence of the study disorders in comparison to the younger adolescents aged 14-16. This was also confirmed by the fact that students in the higher classes of form three and four, who are likely to be older than those in form one and two had a higher prevalence. These findings are consistent with other studies (Boeninger, Masyn, Feldman, & Conger, 2010; Bridge, Horowitz, Fontanella, Grupp-Phelan, & Campo, 2014; Glenn et al., 2020; Thompson & Light, 2011) that found SB among adolescents to increase with age thus, being more prevalent among older
adolescents. This is further evidenced by studies in South Africa as well as in Nigeria where SB was higher among older adolescents in comparison to the younger ones (Burrows & Laflamme 2008; Ojuade et al., 2018b).

The results may imply that SB worsens as adolescents get older and move to higher levels in their education. Older adolescents tend to be more developed cognitively and socially, leading to increased self-awareness, evaluation of events, overwhelming thoughts, and a need for independence which may challenge their coping ability (Tsang et al., 2012). The older adolescents are therefore more vulnerable to SB. Contrary to most studies, in Tanzania, the risk of planning suicide was found to be higher among younger adolescents in comparison to the older ones (Rudatsikira et al., 2007). This may be an indication of an earlier onset of suicidal planning which may lead to severe SB at an older age.

Concerning the gender prevalence, the current study found females to have a significantly higher prevalence than males in the three disorders under study; an indication that females are more vulnerable to the development and expression of DD and PTSD than males, and consequently present with a higher prevalence of SB. This is in line with studies in German where higher incidences of SB were found among females than males (Voss et al., 2019) and in Malaysia where more females (7.6% vs. 4.7%) than males had SB (Chan et al., 2016). Similarly, in China girls were found to have a significantly higher prevalence of suicide attempts than boys (18.2% vs. 16.2%, P<0.05) (Liu et al., 2018). Further, similar findings were found in Kenya among University students (Ongeri et al., 2018).

The current findings are therefore consistent with researches across the globe, which shows that females are more vulnerable to SB than males. This is because females tend to internalize emotions hence, internalized mental disorders such as DD
and PTSD which pose a high risk to SB are more prevalent among females than in males (Eaton et al., 2012). Despite that, researchers Dunlavy et al. (2015) reported an equal prevalence of SB between males (50%) and females (50%) in Tanzania. This indicates that while generally more females than males present with SB, there are a few exceptions probably due to the different sociocultural backgrounds and the wide definition of SB which implies suicidal ideations, plans, or attempts.

The study findings on suicidal ideations, plans, and attempts, indicate that majority of the respondents (82.6%) in the overall study population had only brief or no suicidal ideations, and only a few of them had planned (12.6%) or attempted suicide (4.8%). This is an indication that only a few respondents presented with suicidal tendencies without comorbid psychiatric disorders. The current study agrees with the WHO (2018) report which observed that most of the suicidal cases were associated with mental disorders. This is implied by the comparison of respondents presenting with clinically significant levels of SB and its comorbidities DD and PTSD (pathological group), with those who had clinically insignificant levels of the three disorders (non-pathological group). The pathological group had more cases of suicidal plans (51%) and attempts (22.9%) in comparison to the non-pathological ones on suicidal plans (8.7%) and attempts (3%). It is therefore clear that most of the respondents with SB comorbidities DD and PTSD had suicidal plans and attempts.

A prevalence that is closer to that of the pathological group has been indicated among respondents in psychiatric hospitals. A study in Nigeria by Ojuade et al. (2018a), done among adolescents in a hospital facility established a prevalence higher than that of the current study on suicide attempts (63%) but a lower one on suicidal plans (29%). The prevalence that is much higher than the one in this study has also been found in a South African psychiatric hospital (Khasakhala et al., 2011). The high
prevalence in these studies can, therefore, be attributed to the targeted population of psychiatric patients.

In the current study, the pathological group's SB seems to be more comparable to suicidal patients with psychiatric problems. Other studies have established that individuals with multiple suicidal attempts are likely to present with more psychiatric disorders (Nock et al., 2010; Osváth et al., 2003). This study, therefore, sheds light on the fact that there are some individuals with comorbid psychiatric disorders in non-clinical settings who, just like those in clinical settings are highly suicidal. The high number of adolescents with comorbid SB and psychiatric disorders reflects the poor mental-health infrastructure in low-income countries (Suicide Prevention Resource Center [SPRC], 2020). The researcher observed a lack of awareness and ignorance on SB as a mental health problem among the respondents since many of them had neither been assessed nor sought any professional help.

5.2.2 Severity of SB among the study participants

The second objective aimed at determining the severity levels of SB and relating the same to the sociodemographic characteristics of participants. Knowledge of the severity of SB is important since it affects decisions regarding the type and intensity of treatment. Diverse magnitudes of a disorder's severity affect day to day activities and can be used to monitor the efficacy of an intervention. The severity of SB can be viewed in a continuum that begins from suicidal ideation, followed by planning without intent, and planning with intent, to suicidal attempt without intent, and then attempts with intent which may or may not lead to suicide.

The respondents (n=104) in the study sample who met the inclusion criteria for the quasi-experimental by having pathological levels of SB, DD, and PTSD were assessed to determine the severity levels of SB. Responses from the SBQ-R test
question one were assessed. The question investigates the respondents' SB in terms of having brief suicidal ideations or no ideations, having suicidal plans or attempts. The study found a high number of participants had suicidal plans (51.9%), and a good number of them (22.1%) had attempted suicide. This indicates that most of the suicidal adolescents had intense SB ranging from suicidal plans to attempted suicide.

Research in a similar set-up of informal settlements in Uganda found a prevalence of 31% suicide ideation, 23% suicide planning, and a 20% suicide attempt (Swahn et al., 2012). This implies that adolescents in a similar socioeconomic environment compare so well in their SB. This could be due to being exposed to similar risk factors.

The current severity levels are also within the ranges established by Liu et al. (2018), albeit on the higher side. According to Liu and colleagues, in 12 months, the attempted suicide rates ranged from a low prevalence of 6.7% in Malaysia to a high one of 61.2% in Samoa with an overall mean of 17.2%. In Ethiopia, a school-based cross-sectional study of 573 respondents established a 22.5% prevalence for suicidal ideation and 16.2% for suicidal attempts (Amare et al., 2018). In the current study, the high prevalence of suicidal plans and attempts could be explained by the fact that the respondents evaluated were only those who had SB comorbid with DD and PTSD, whereas other studies focused on the general population.

Researches in diverse regions have found varying levels of suicidality. In the United States, a nationwide survey among high school students recorded 13.6% suicidal plans and 7.4% suicidal attempts (Kann et al., 2018). Another study among adolescents in 59 low and middle-income countries noted the overall prevalence of suicidal ideation to be 16.9%, suicide planning 17.0%, and suicide attempt 17.0% (Uddin et al., 2019). The study by Uddin and colleagues further noted that higher levels of SB were concentrated in the African countries compared to other nations. In
the African region, prevalence closer to those of the current study were noted on suicidal ideations (20.4%) and plans (23.7%), followed by the Western Pacific region at 20.5% suicide attempts. There was a lower prevalence in Southeast Asia on ideation (8.0%), planning (9.9%), and attempts (9.2%) (Uddin et al., 2019).

The high severity levels of SB in the current study aligns with the high prevalence noted in Africa. Researchers have noted the weakness of mental health services in Africa characterized by insufficient mental health professionals, poor development of policy and program implementation, research deficiency, and an extremely low proportion of Africans who receive treatment for mental health problems (Mugisha et al., 2019; Sankoh et al., 2018). Therefore, there is a need for African governments to invest more in the enhancement of mental health services to reduce suicide mortality rates.

Prevalence higher than that of the current study has been found in psychiatric patients. This is an indication that respondents with psychiatric problems have a higher prevalence of SB. This concurs with studies that have shown that about 90% of suicidal cases are associated with mental disorders (WHO, 2018). A study done in Nigeria revealed that among adolescents who were in a psychiatric hospital facility, there was a high prevalence of suicidal ideations (23%), suicidal plans (29%), and attempts (63%) (Ojuade et al., 2018a). Much higher prevalence was found in a South African psychiatric hospital where the prevalence of reported suicidal ideations, plans, and attempts were 61%, 64%, and 70.3% respectively (Khasakhala et al., 2011). This indicates that psychiatric patients who are likely to have a history of mental disorders present with higher levels of suicidality.

The current study findings indicate a similarly high prevalence of severe suicidality that compares well with those of psychiatric patients. Therefore, whereas a
high number of patients in psychiatric hospitals had attempted suicide, there is still a
good number of adolescents in non-clinical settings who present with multiple
disorders and have suicidal plans and attempts. This reflects a lack of studies and
awareness of mental health as well as the poor mental-health infrastructure in low-
income countries (Owen, Baig, Abbo, & Baheretibeb, 2016; SPRC, 2020). There is
therefore the need to avail information as well as psychological assessments and
interventions to adolescents in the low-income areas. Additionally, suicide preventive
measures are needed in non-clinical settings such as schools, to curb the likelihood of
death by suicide.

The current study also sought to determine the association between the
sociodemographic characteristics of the participants with the severity of SB. The
sociodemographic variables that were assessed included; age, gender, family care-
giver, socioeconomic status, religion, and year of study. Gender is the only
sociodemographic feature that presented a significant relationship with SB severity. A
slightly higher number of females than males had suicidal plans (52.2% vs. 51.4%).
This agrees with a study among US students where suicidal plans and ideations were
found to be higher among females (Kann et al., 2018).

The study however revealed that a higher number of males (25.7%) had
attempted suicide in comparison to females (20.3%). This is in contrast to most
studies that have noted higher numbers of suicidal attempts in females than males (da
Silva Cais et al., 2009; Kann et al., 2018; Liu et al., 2018 & Uddin et al., 2019). Yet,
the most dangerously severe levels of SB expressed in death by suicide are more
prevalent in males. Researches on suicide mortality rates have recorded higher
numbers of completed suicide among males whereas, SB in the form of suicidal
ideations, plans, and attempts are more prevalent in females than males (De Leo et al.,
2002; Glenn et al., 2020; Goldsmith et al., 2002). Although females are more likely than males to engage in SB, more males die of suicide. This is because males tend to be independent decision-makers whereas females value interdependence. Female are likely to consult and readily consider many things hence, accept help from others (Murphy, 1998).

In this study, there was a higher prevalence of females (17.65%) who had attempted suicide with intent to die than males (2.9%) whereas, more males than females (20% vs. 5.7%) attempted suicide without intent. These findings contradict those of Ojuade et al. (2018b) in that more males attempted suicide with intent, as opposed to females who attempted without intent to die. The contradicting findings may imply that both males and females in varied settings have mixed feelings over suicide even when they perceive their psychological pain as unbearable. Considering that in the current study respondents were from informal settlements characterized by insecurity and lack of basic amenities, a good number of females may have undergone more severe trauma leading to feelings of despair hence, a serious desire for death (Onyango & Tostensen, 2015). Nevertheless, the results on gender presentation of SB should be interpreted cautiously and further study is needed to help elucidate these differences.

Although the study did not find a significant difference in the comparison between the age of respondents and the three disorders, it is worth noting that the disorders were more severe among older adolescents in comparison to the younger ones. This is consistent with previous studies (Liu et al., 2018; Ojuade et al., 2018b; Uddin et al., 2019) that noted severe levels of SB, DD, and PTSD among older adolescents in comparison to the younger ones. Besides, Liu et al. (2018), observed
that suicide attempts prevalence and the frequency of suicide attempts with a plan tends to increase with age.

Focusing on the severity of DD, the current findings show that majority of the suicidal adolescents (82.7%) presented with both moderate and severe levels of DD. Specifically, a higher number of respondents had moderate (n=49, 47.1%) and severe (n=37, 35.6%) levels of depression. This prevalence is slightly higher than 35.7%, which was the overall prevalence of moderate depression and 5.6% severe depression found among the university students in Nairobi (Othieno et al., 2014). The difference may be attributed to the diverse nature of the study population, in that the current study focused on data from suicidal participants who were not only depressed but had PTSD too.

The current study showed no significant statistical association between the sociodemographic variables and the severity levels of DD. However, there were higher numbers of females (8.7% and 36.2%) than males (2.9% and 34.3%) on extreme and severe levels of DD respectively. The Study by Othieno et al. (2014), in a Kenyan youth population, agreed on the higher numbers of female respondents with severe levels of DD in comparison to males. The study by Othieno and colleagues showed that higher levels of DD were significantly associated with the year of study, academic performance, religion, economic status, and college attendance. Similarly, a study by Moeini, Bashirian, Soltanian, Ghaleiha, and Taheri (2019) noted that the type of school, family income, living in suburbs, and the field of study had a statistically significant relationship with DD.

The significant association between sociodemographic features and DD in the study by Othieno et al. (2014) and Moeini et al. (2019) may be a reflection of the diverse sociodemographic characteristics of the respondents used in their studies. The
current study used a more homogeneous sample of high school students since they were from similar low socioeconomic settings. Their schools had a similar set-up of day-mixed and were located in informal settlements. The similarity in sociodemographic characteristics was necessary for a comparative quasi-experimental research design.

The study further looked at SB self-disclosure, which is essential in curtailing the progression of SB from ideation to severe levels which may lead to suicidal death. The findings indicate that a high number (57%) of the suicidal adolescents hardly disclosed their suicidal tendencies or sought help concerning their suicidality. In a retrospective study of hospitalized patients who died of suicide, Busch et al. (2003), found that 78% had denied having suicidal ideations a week before committing suicide. This agrees with the current study that many suicidal persons hardly reveal their intent. The reluctance to disclose their suicidal intent may be an indication of great despair or ignorance that self-disclosure of stigmatized behavior is likely to enhance positive psychological coping (Beals et al., 2009; Frattaroli, 2006).

Previous literature has documented an association between non-disclosure and negative outcomes leading to anxiety, DD, physical symptoms, psychological distress, and negative self-esteem, as well as poor social support and reluctance to use psychological services (Barry & Mizrahi, 2005). Additionally, Gvio and Apter (2012), noted that the lack of self-disclosure, help-seeking, and social communication does increase the risk of suicide. Thus, Friedlander, Nazem, Fiske, Nadorff, and Smith (2012), advises that due to the high number of non-disclosure even where SB has not been communicated, individuals with SB and multiple risk factors for SB should be encouraged to seek professional care.
The current study further found out that a good number (31.3%) of the pathological group disclosed once and only a minority (11.5%) of them were persistent in their disclosure. This implies that the few adolescents who disclose their suicidal intent are at a high risk of suicide attempt and thus in need of intervention to reduce SB severity. Lack of persistence in self-disclosure, especially after the initial disclosure seems to imply low levels of awareness on SB, community, and self-stigma, as well as limited training and poor mental health services which are evident in Africa (Mugisha et al. 2019). With low levels of training and awareness, the respondents' initial self-disclosure may have been followed by judgmental responses leading to further avoidance of such discussions.

Additionally, in Africa there is a negative perception of mental disorders; suicide attempters are viewed as criminals and the mentally ill are stigmatized and abandoned by both the community and the government (Hammond, 2013; Schlebusch & Burrows, 2009). Therefore, to eliminate the stigma and enhance mental health services in Kenya and Africa at large, there is a need for psychoeducation in the area of SB. To curtail the progression of SB from ideations to attempts or eventual suicide, the distressed persons need to be encouraged to seek help and those around them psychoeducated on how to respond positively. Knowledge of the risk factors is also necessary in targeting those at high risk of SB in the effort towards curtailing the progression of SB from ideations to suicide.

5.2.3 Risk factors for SB among the study respondents

The third objective sought to examine the risk factors for SB among adolescents in Nairobi County. Four categories of the likely risk factors were assessed. The first category was on sociodemographic attributes, the second one on the SB categories of ideations, attempts, and their diverse magnitude, the third one
focused on the self-rated stressful life experiences, and the fourth category was on mental disorders (DD and PTSD).

Regarding the sociodemographic characteristics, only the respondents' gender (p<0.001) and the caregiver (p=0.035) were found to be significant risk factors for SB. The study findings, therefore, indicate that being of female gender and living with a non-immediate family caregiver posed a significant risk to SB. Researchers have similarly affirmed that females are at a higher risk of SB in the form of suicidal ideations, plans, and attempts (Burrows & Laflamme, 2008; Ongeri et al. 2018). This is because in females' mental illnesses tend to be internalized thus, they are more anxious and depressed whereas males externalize, hence, become impulsive and aggressive (Smith, Mouzon, & Elliott, 2018). Therefore, males are at a higher risk of completed suicide in comparison to females (Bitta et al., 2018; Callanan & Davis, 2012; da Silva Cais et al., 2009; Joe et al., 2008; Liu et al., 2019). This may imply that although more females wish to die, not many have the gut to take away their lives. Due to their aggressive nature, men tend to use more lethal ways in attempting suicide hence, they are likely to die of suicide unlike females (Tsirigotis, Gruszczynski, & Tsirigotis, 2011). Therefore, females are at a higher risk of SB but they are not necessarily more vulnerable to completed suicide than males.

Focusing on the respondents' caregiver, the study established that participants living with guardians or non-immediate family members had the highest prevalence for each of the disorders, followed by those who lived with single parents or a sibling, and lastly those living with both parents. The study agrees with that of Omigbodun et al. (2008), where the Nigerian adolescents from polygamous and disrupted families, had higher rates of SB. Similarly, Chau, Kabuth, and Chau (2014) found the risk of suicidal attempt to be three times higher among girls living with single parents or in
step-families, than those living in intact families. This may imply greater psychological distress since studies have established that adolescents from single and step-parents' families suffered more from DD, anxiety, loneliness, suicidal thoughts, and attempts than those of intact families (Garnefski & Diekstra, 1997; Ponnet et al., 2005; Zaborskis, Sirvyte, & Zemaitiene, 2016).

The psychological distress among adolescents from these family types may be attributed to the many psychosocial disturbances emanating from problems that led to family disruption. Some of the reasons for family disruptions could be the death of a parent, parental negligence, family dysfunctions, abuse, financial difficulties, and illness or psychopathology in parents (Liu et al., 2019; Miller et al., 2013; Wilcox et al., 2010; Zhai et al., 2015). These are some of the reasons that may have led the adolescents into living with relatives, step-parents, or another family that are not immediate family members. Consequently, adolescents living with such families may be neglected, lack a good relationship with the caregiver, and experience poor family support, which are predictors of SB (Ibrahim et al., 2019; Miller, Esposito-Smythers, & Leichtweis, 2015; Wilcox et al., 2010; Zhai et al., 2015).

Regarding the forms of SB, the study found a high frequency of suicidal ideations and suicide attempts to be risk factors for SB. The study noted that increased frequency of suicidal ideations was significantly associated (p<0.001) with suicidal plans and attempts. The results imply that respondents who thought of suicide quite often were at a higher risk of planning and attempting suicide. The study findings further indicated that participants who attempted suicide were at a higher risk of future attempts. This was evidenced by the results indicating that a good number (32.7%) of respondents who had previously attempted suicide were likely to attempt suicide in the future; while, a majority (98.1%) of those who had neither planned nor
attempted suicide were unlikely to attempt suicide. There was a statistically significant association (P<0.001) between the likelihood of future suicide attempts and previous attempts. It is therefore clear that a history of suicide attempts point to a higher risk for future attempts.

Studies in diverse settings have similarly indicated a history of attempted suicide as the highest risk factor for completed suicide, with the explanation that individuals who attempt suicide are likely to engage in more lethal forms of ending their lives in their subsequent attempts (Bostwick et al., 2016; Cooper et al., 2005; Gibb et al., 2005; Gupta, Trivedi, & Singh, 1992; Ojuade et al., 2018b; Randall et al., 2014). Researchers, Rathus and Miller (2002) noted that a high number of suicide attempters (31% to 50%) re-attempted suicide within three months. Nevertheless, there is hope that this trend of suicide reattempt can be curtailed if suicide attempters were to be accorded immediate intervention (Defayette, Adams, Whitmyre, Williams, & Esposito-Smythers, 2019). This implies that knowledge of the high-risk categories of persons can help direct the assessment and intervention accordingly as a preventive measure for the reduction of future attempts.

The study further assessed the respondents' stressful life experiences which may have precipitated the SB. The logistic regression model affirmed that the following stressors were significantly associated (p<0.001) with SB. The most severe risk factor was feelings of hopelessness and worthlessness, followed by relationship problems, traumatic experiences, mental disturbances, family problems, alcohol or substance abuse, physical illness, academic challenges, financial problems, and lastly death of a dear one.

Feeling hopeless and worthless has been established as a great risk factor for SB (Beck, 2011). The current study concurred with researchers (Jeon et al., 2014) that
feelings of worthlessness are more strongly associated with suicidal attempts than other symptoms of DD in individuals with MDD who had also experienced serious trauma. Likewise, a study by da Silva Cais et al. (2009) established hopelessness as a predictor for suicide attempts and a major risk factor for death by suicide. Other studies have found DD, hopelessness and suicidal ideation to be associated with multiple suicide attempts (Farabaugh et al., 2012).

Among persons with psychiatric problems, hopelessness is a strong predictor for eventual suicide (Brown et al., 2000; Qiu et al., 2017). This is because hopelessness which implies a sense of despair, tends to cause feelings of gloom and resignation (Huen et al., 2015). The association between hopelessness and multiple psychiatric problems signifies great distress leading to feelings of helplessness and worthlessness. There is, therefore, a 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 study rated relationship problems as the second risk factor for SB after hopelessness on the 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., 1993). The romantic relationships could have served the purpose of filling-in the emotional void since researchers agree that adolescents suffer from rejection by friends, poor parental relationships, and low self-esteem (Klomek et al., 2007; Mugambi & Gitonga, 2015). Other relationship problems among adolescents may take the form of bullying which is rampant in schools, both the perpetrators and victims of bullying are at a high risk of suicide (Kim & Levanthal, 2008; Klomek et al., 2007).
Negative perception towards interpersonal relationships may lead to SB. 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., 2010). Such perceptions indicate cognitive distortions hence, the need for thought restructuring to promote logical thoughts (Beck, 2011). On the other hand, supportive positive relationships promote good mental health among adolescents, therefore, acting as a protective factor to SB. Researchers (Bauman, 2008; Fanti, Henrich, Brookmeyer, & Kuperminc, 2008; Klima & Repetti, 2008) have established that good parent-child relationships, family support as well as peer acceptability are protective factors for depressive disorders.

The study rated traumatic experiences third among the stressors that pose a high risk to the development of SB among adolescents. In agreement to this, Fine et al. (2012) found a high number (52%) of suicidal female adolescents who had experienced physical and sexual abuse were at a higher risk of SB. Similarly, Omigbodun et al. (2008) established a history of traumatic events such as sexual abuse, physical attacks, and involvement in physical fights to be a significant predictor for SB. According to Foa, Keane, and Friedman (2000), persons with PTSD are likely to present with multiple psychiatric disorders as well as self-destructive and impulsive behaviors including multiple suicide attempts. Experiencing trauma is therefore an established risk factor for SB due to its connection with distress leading to the development of psychiatric problems.

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 the death of a dear one. Mental disturbances which may entail symptoms of psychiatric disorders pose a risk to SB. The loneliness
which may signify interpersonal problems has been found to have a significant relationship with suicidality among the youth (Arria et al., 2011; Dunlavy et al., 2015; Granero et al., 2008; Hesketh et al., 2002). Researchers have also 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). Additionally, adolescents' perception of poor parental care is a notable predictor of SB (Miller et al., 2015; Randall et al., 2014). 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.

Additionally, other studies agree with the current study that adolescents encounter multiple life stressors in their effort to adjust to a new social environment, relationships, or academic pressure (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. Researchers, Karsberg and Elklit (2012) concur that adolescents in Kenyan high schools suffer distress resulting from the loss of a close person, chronic illness, witnessing or personally being injured, hurt, or having a neglecting parent. These are among the distressing life experiences which may lead to a state of despair when there is coping skills' deficiency. Since life stressors are inevitable, there is a need for empirically proven SB interventions targeting dysfunctional cognitive, emotional, and behavioral aspects of suicidality, to enhance healthy coping mechanisms (Mewton & Andrews, 2016).

The study found alcohol and substance abuse to be risk factors for SB; other studies have similarly indicated alcohol and substance abuse among adolescents and
youths to be a risk factor for SB (Breet et al., 2018; CDCP, 2010; Dragisic et al., 2015; Kokkevi et al., 2012; Liu et al., 2019; Randall et al., 2014). Moreover, severe SB in multiple cases of suicidal attempts has been associated with alcohol and drug abuse (Kaslow et al., 2006; Poorolajal et al., 2015). According to Dragisic et al. (2015), the longer a person has used the substance the higher the likelihood of eventual death by suicide.

Studies in Tanzania and Kenya have established that the youth who used alcohol, tobacco, and illicit substances were vulnerable to SB (Dunlavy et al., 2015; Ndegwa et al., 2017; Othieno et al., 2015). The mentioned studies as well as the current one, therefore, affirm that globally, the use of alcohol and other substances of abuse is a likely risk factor for SB. Psychological distress may have led adolescents to the usage of alcohol or substances of abuse in their effort to gain relief from their psychological suffering (Bottorff, Johnson, Moffat, & Mulvogue, 2009). This implies a need for effective distress tolerance life-skills so that adolescents do not have to rely on alcohol and substance abuse for relief since this may enhance despair and consequently, intensify SB.

The current study also found the death of a close family member to be significantly associated (p<0.001) with the risk for SB. Although death in general leads to stress or complicated grief that is associated with SB, suicidal death of a close person is highly associated with the risk for suicidality (Forman et al., 2004; Jang et al., 2016; Jeglic et al., 2005; Mann & Currier, 2010; Rostila et al., 2013; Van Orden et al., 2010). The stress associated with complicated grief and justification or role modeling of SB especially in case of a suicidal death by a parent may increase the risk for suicidal tendencies.
Lastly, just as in the current study, other studies in low, middle, and high-income countries have established financial instability as a risk factor for suicidality (dos Santos et al., 2016; Luo et al., 2011). Studies in Kenya and Uganda (Culbreth et al., 2018; Othieno et al., 2015) concur on higher rates of SB among the youth from the poor socioeconomic background. In their effort to survive and meet their basic needs, this category of youths gets exposed to criminal activities, drugs trafficking and alcohol abuse, HIV Aids, and physical as well as sexual abuse (Culbreth et al., 2018; Onyango & Tostensen, 2015). These high-risk survival behaviors are likely to expose adolescents to trauma or a negative view of self and their future hence, intensifying their stress which may lead to SB.

In suicide alleviation effort there is therefore the need for psychoeducation on SB risk factors at diverse levels from the individual level, institutional, to the community level, through guidance and counseling, social media, and in mass media. Knowledge of SB risk factors is vital in reducing stigma and encouraging open communication on SB. This would consequently promote psychosocial support and motivate at-risk persons to seek professional assistance.

5.2.4 Association between SB, PTSD, and DD

The fourth objective sought to assess the relationship between SB, PTSD, and DD among the suicidal high school students. A statistically significant relationship (p<0.001) was established between SB with DD and SB with PTSD, implying that PTSD and DD are risk factors for SB. Whereas, DD and PTSD separately were found to be risk factors for SB, when in combination they pose a higher risk to SB. Studies in Tanzania and South Africa have indicated similar results that comorbidity of multiple disorders is associated with increased risk and persistence of SB (Khasakhala et al., 2011; Ndosi, Mbonde, & Lyamuya, 2004). Similarly, the cross-sectional study
by Coryell and Young (2005) found DD to be a great risk factor for SB whereas, the study by Khasakhala et al. (2011) in South Africa found PTSD to be a strong predictor of suicidal ideations and attempts.

In Kenya, DD has been highly associated with suicidality among adolescents and adults (Khasakhala, Ndetei, Mathai, & Harder, 2013; Ongeri et al., 2018). Likewise, Othieno et al. (2015) noted a history of physical abuse and DD to be risk factors for suicidality among Kenyan youths. This implies that SB which is a symptom of DD is highly linked to PTSD. Trauma which is a prerequisite for PTSD is likely to cause distress that would trigger a sense of hopelessness and helplessness and thus DD and SB.

In investigating the magnitude and direction of the association between SB, DD, and PTSD, the current study indicated a moderate positive correlation ($r = 0.396$ to $0.723$), which was statistically significant ($p<0.001$). The positive correlation implies that the three disorders change in the same direction. This trend was observed from baseline to midline and then end-line, where PTSD, DD, and SB in both experimental and control groups decreased in the same direction. Other studies have found a correlation between a pair of disorders as well as the three disorders. A study by Khasakhala et al. (2012) among high school students in Nairobi County found a significant correlation between DD and SB ($p<0.001$). Similarly, a meta-analysis of 50 articles indicated that PTSD and SB were associated, with a concurrent pre-trauma psychiatric condition and DD possibly mediating the relationship (Krysinska & Lester, 2010).

The association between PTSD and DD implies that some fundamental psychobiological deviations in response to trauma affect emotions, self-perception, impulsivity, arousal, irritability, aggression, and one's view of the world (Ganz &
Patients with DD have been found to have maladaptive responses to traumatic experiences which may trigger PTSD and consequently increase the risk for suicidal attempts (Stevens et al., 2013). Therefore, patients with DD and PTSD tend to have difficulty in regulating emotions, maladaptive coping skills, and a sense of despair which are some indicators of SB (Ndetei et al., 2007). The emotional, cognitive, and behavioral problems imply some bio-psychosocial deficiencies hence, in the treatment of SB psychotherapeutic interventions targeting maladaptive cognitions, emotions and behaviors rather than symptoms of mental illness are more efficacious (Mewton & Andrews, 2016; Tarrier, Taylor, & Gooding, 2008).

Additionally, the correlation indicates that having DD or PTSD symptoms increases the risk of SB as noted in the American Psychiatric Association (2013). This means that treatment of one disorder either DD or PTSD is likely to lead to a decline in SB. However, a treatment model that targets the disorders as well as SB is likely to yield better results. Therefore, to optimize the treatment effect when there is comorbidity, an integrative psychotherapeutic approach is preferable (Zarbo, Tasca, Cattafi, & Compare, 2015). The integrated DBT PE which targets the emotional, behavioral, cognitive, and social problems forms a comprehensive modality for a wide range of symptoms related to SB. Hence, it is aimed at facilitating recovery in the suicidal, traumatized, and depressed clients, helping them not to despair but find sense in living (Harned et al. 2012). The DBT PE intervention works by effecting positive change on the suicidal, depression, and trauma-related cognitions as well as facilitating social adjustment (Harned et al., 2014). Dialectical behavior therapy with prolonged exposure is therefore recommended in the treatment of the common comorbidity of PTSD, DD, and their maladaptive coping skills leading to SB.
5.2.5 Efficacy of DBT PE in treatment of SB, PTSD, and DD

The fifth objective sought to evaluate the efficacy of DBT PE in reducing SB and its comorbidity DD and PTSD among the suicidal high school students presenting with the disorders. Considering the need to reduce the suicide-related mortality rate among trauma-exposed adolescents, it was necessary to investigate effective interventions that can be used for suicidal clients in non-clinical settings. Hence, evaluating the efficacy of an intervention for SB comorbid DD and PTSD was the main purpose of this study. Despite studies on SB having been conducted in Kenya, the researcher did not find a study that verified and recommended a viable psychotherapeutic intervention for SB. The study combined DBT skills for SB with PE skills for PTSD in the treatment of the participants who presented with SB, DD, and PTSD.

The experimental group received the DBT PE intervention but the control group did not receive any intervention. The two groups were assessed to determine symptom reduction upon completion of the 12 sessions of DBT PE by the experimental group. Further, an end-line assessment was conducted on both groups eight weeks after termination of the intervention to determine the sustainability of its effect. At baseline, there was a non-significant difference (p=0.173) between the two groups' SB mean scores, which implies homogeneity in their symptom presentation. However, at midline and end-line assessment, there was a statistically significant mean difference (p<0.001) between the two groups. Also, the experimental group recorded a statistically significant (p<0.001) mean difference from baseline to end-line assessment whereas, that of the control group was insignificant (p=0.169). This implies that the application of DBT PE intervention in the experimental group led to great SB symptom reduction.
The experimental group treatment effect was further assessed and there was a statistically significant effect size (-0.422) between baseline and midline, so DBT PE intervention led to a 42% decrease in the mean score of SB at the midline. It is therefore clear from the study results that DBT PE was an efficacious intervention for SB. Just as in the current study, other studies have established the efficacy of DBT in the reduction of SB among adolescents in diverse settings (McCauley et al., 2018; Rathus & Miller, 2002; Salsman, 2011; Santamarina et al., 2017; Woodberry & Popenoe, 2008).

The current study also sought to establish the treatment effect on the SB comorbidities DD and PTSD. DD which is highly comorbid with SB was affected by the intervention leading to a mean score reduction from baseline (29.9) to midline (17.9) which was statistically significant (p<0.001). Other studies show that DBT has also yielded positive results in the treatment of SB comorbid psychiatric disorders. The efficacy of DBT in the treatment of DD, BPD, PTSD, mood disorders, externalizing behavior, anxiety, substance use, and impulsive behavior has been proved by studies in the Western countries (Berk, Starace, Black, & Avina, 2020; Groves, Backer, Van den Bosch, & Miller, 2011; Koons et al., 2001; Linehan et al., 1999; MacPherson, Cheavens, & Fristad, 2013; Mehlum et al. 2014; Mehlum et al. 2016; Woodberry & Popenoe, 2008). Similarly, a study in Nigeria established the efficacy of DBT in the reduction of suicidality among parasuicidal adolescents presenting with mood disorders in a hospital setup (Ojuade et al., 2018). Therefore, in Africa, just as in other continents DBT has been associated with a significant reduction of SB as well as its comorbidities.

Since the current study combined DBT with PE, its effect on PTSD was also assessed. The study findings show that PTSD means score reduced from baseline
(48.5) to midline (33.6) leading to a statistically significant difference (p=0.003). A combination of DBT and PE is a superior treatment model in comparison to DBT alone for the high-risk suicidal PTSD patients who present with multiple problems (Harned et al., 2014). The current study targeted this group of high-risk suicidal adolescents with multiple disorders and found DBT PE to be highly efficacious in the treatment of multiple disorders (SB, DD, and PTSD). These findings correspond with those of studies done in the West that found DBT PE protocol to be effective in reducing symptoms of SB and PTSD (Harned & Linehan, 2008; Harned et al., 2012; Scheiderer et al., 2017).

While DBT PE reduced other psychiatric disorders among suicidal persons, Schmidt and Harned (2016) noted a greater improvement in the PTSD symptoms and its comorbid problems since it targets PTSD directly. Some of the PTSD associated problems that were reduced included suicidal ideation, self-harm behavior, guilt, cognitions related to trauma, anxiety, chronic dissociation, social regulation and shame, depression, and borderline symptoms. It also led to the enhancement of social adaptability, and health-related quality of life (Granato et al., 2015; Harned et al., 2016; Harned et al., 2018; Schmidt & Harned, 2016).

Thus, the associated relief makes DBT PE a preferable treatment for suicidal patients with PTSD in comparison to DBT alone (Harned et al., 2013). The current study, therefore, recommends the use of DBT PE in the target population since it is effective on PTSD and its associated DD and SB. Being an intervention for multiple disorders, DBT PE is recommended for adolescents from a low socioeconomic background and in developing countries where it may be hard to conduct multiple disorders’ assessment due to the poor mental health infrastructure.
The current study established the efficacy of DBT PE in a non-clinical setting with high school students who presented with multiple psychiatric problems. Although most of the above-mentioned studies tested the effect of DBT in a clinical setting with psychiatric patients, studies have confirmed the effectiveness of DBT in diverse settings (Ben-Porath, Peterson, & Smee, 2004; Groves et al., 2011; MacPherson et al, 2013; Woodberry & Popenoe, 2008). In the current study, application of the intervention in a non-clinical setting was effective since the study participants had insight and they were able to apply the DBT PE skills in a natural environment. The study found DBT PE group therapy to be easily applicable in a school setting and mostly during school holidays since it demands a great time commitment.

The study participants were further assessed at the end-line, eight weeks after the treatment termination to ascertain the sustainability of the treatment effect. The study results showed a further SB mean reduction in the experimental group from 5.7 to 4.8 between midline and end-line leading to a statistically significant difference from baseline to end-line (p<0.001). In the control group, the slight mean drop between midline and end-line (9.0 to 8.2) may be attributed to the assessments which is a form of self-disclosure since no intervention was given. Studies have established that self-disclosure is likely to reduce stigmatization and enhance social support as well as positive psychological coping (Beals et al., 2009; Frattaroli, 2006). However, the drop in the control group was insignificant (p=0.169). The statistical assessment of the experimental group treatment effect (-0.461) indicates that DBT PE led to a 46% SB decrease from baseline to end-line. This implies that the mean reduction in the experimental group was sustained after the intervention termination.
Likewise, the PTSD and DD mean score for the experimental group reduced significantly (p<0.001) between midline and end-line whereas, the control group's mean score difference was statistically insignificant (p>0.05). The results show that PTSD and DD symptoms continued to reduce long after its termination at the end-line. The current study, therefore, established the sustainability of the DBT PE treatment effects on SB, DD, and PTSD. Longitudinal studies have also established that the positive effects of DBT treatment continue to endure in a much longer period after therapy discontinuation (Linehan et al., 2006; Mehlum et al., 2016; Van den Bosch, Koeter, Stijnen, Verheul, & Van den Brink, 2005).

The effectiveness of the treatment in reducing SB and its comorbidities as well as the sustainability of the effects long after its application can be attributed to the DBT PE treatment model. The DBT PE treatment model aims at increasing adaptive skills and decreasing maladaptive skills in helping clients manage overwhelming emotions. In the current study, during application of the intervention, the validation technique was emphasized in expressing radical acceptance of the study participants as they are. The radical acceptance was helpful in the implementation of change strategies without an impression of rejection (Lynch et al., 2007).

The study followed the DBT skills manual which emphasizes the need to equip clients with mindfulness and distress tolerance acceptance-oriented skills, as well as the interpersonal effectiveness and emotional regulation change-oriented skills (Linehan, 1999). In the facilitation of the intervention, participants were first equipped with mindfulness skills aimed at enhancing awareness of their thoughts, emotions, physical sensations, and actions in the here and now without self-judgment, but upholding radical acceptance (Linehan, 1993b). Distress tolerance skills were then
taught and practiced in motivating the adoption of effective coping skills in response to highly stressful situations.

Prolonged exposure therapy was incorporated with emotion regulation skills where relaxation techniques as well as imaginal and in vivo exposure skills were practiced as clients learned to observe and modulate their emotions effectively without feeling overwhelmed. Finally, interpersonal effectiveness skills were facilitated. Participants learned new ways of setting limits, expressing themselves, and negotiating solutions without harming interpersonal relationships (Moonshine, 2008). These life skills are essential safeguards against maladaptive coping through SB.

In the current study, the efficacy of DBT PE intervention in the treatment of SB among depressed adolescents with PTSD was evidenced by a comparison of the experimental and control groups' results. The SB mean score for the experimental group dropped significantly (p<0.001), from baseline (10.3) to midline (5.74) and then end-line (4.81), thus indicating a clinically insignificant (<6) SB mean score. However, the control group SBQ-R mean drop was insignificant (p=0.169) from baseline (9.57) to midline (9.04) and end-line (8.24) and still indicated clinically significant (>6) SB mean score. The effect size further indicated that DBT PE led to a decrease in the mean score of SB by 42% at midline and 46% at the end-line thus, proving its sustainability. The persistent positive effects at end-line could be attributed to the fact that the participants were encouraged to continue practicing the skills acquired in their everyday life experiences.

The study, therefore, established the efficacy of DBT PE intervention as a treatment option for SB and it proved that its treatment effects are sustainable. These study results are a clear indication that deaths by suicide are preventable. However, the suicide prevention effort demands embracing and implementing the efficacious
interventions widely. The research was therefore imperative in raising awareness for
the reduction of stigma associated with SB. The study also informs the relevant
ministries and institutions on viable empirically proven psychotherapeutic suicide
prevention strategy among adolescents in Kenya.

5.3 Conclusion

In trying to establish an empirically tested solution to the problem of
suicidality, the study found DBT PE to be an efficacious intervention for SB and its
comorbidities DD and PTSD in the Kenyan context among adolescents in the low-
income areas. These results prove that SBs which are risk factors for death by suicide
are preventable. The study further established the prevalence of SB and its
comorbidities. The identified risk factors for suicidality can be used to sensitize both
the clinical practitioners and the public on danger signs for SB. This is crucial
considering that a high number (57%) of suicidal adolescents hardly disclose their
suicidal intent.

The high prevalence of SB (21.5%) and that of SB with its comorbidities DD
and PTSD (15%) found among high school students sheds light on the fact that
suicidality is a major problem among adolescents. The severe levels of suicide
planning (51.9%) and attempts (22.1%) indicate the need for psychological
assessments in schools. These assessments are necessary since the study further
indicates that there are many adolescents with comorbid psychiatric disorders in non-
clinical settings. These adolescents tend to present similar prevalence and high
severity levels of SB that are comparable to the psychiatric patients. The high
prevalence and severity levels also justify the need for psychological interventions to
students in the enhancement of mental health for the reduction of suicide mortality.
The study provided insight into the psychosocial risk factors that need to be addressed in life-skills enhancement and other suicide prevention efforts. These include feelings of hopelessness and worthlessness, relationship problems, traumatic experiences, mental disturbances, family problems, and alcohol or substance abuse, physical illness, academic challenges, financial problems, and the death of a dear one. Persons struggling with these problems are likely to despair in life and thus present with SB as they try to seek permanent relief from their perceived unbearable problems. Females and respondents who live with non-immediate family guardians were found to be highly susceptible to SB. This points out the categories of persons who need to be considered in suicidal prevention strategies.

Additionally, the study concurred with other studies that persons who have attempted suicide, and those with comorbid PTSD and DD are at a higher risk for suicidality. This implies that SB is not just a behavioral problem but a psychiatric problem since, it is likely to arise from an effort to alleviate the discomfort associated with mental disorders. When a patient lacks coping skills for their psychological distress they are at a higher risk of developing mental disorders. Developing mental disorders increases psychological pain and hence, in despair one may seek suicidality as an irrational possible escape from distress. The study therefore, identifies the high-risk type of patients who need to be accorded urgent evidence-based interventions to rescue them from the probable death by suicide.

The statistically significant (p<0.001) correlation established by the current study between SB, DD, and PTSD implies that the three disorders tend to influence each other. The study further pointed out that the correlation was moderate and positive (r= 0.396 to 0.723). This implies that the increase in one disorder is likely to trigger an increase in the others and vice versa. This further confirms that SB is a
mental health problem since it is highly correlated with psychiatric disorders thus it requires mental health intervention. The SB association with the aforementioned risk factors as well as DD, and PTSD also implies a biopsychosocial causality. Therefore, in SB treatment, there is a need for comprehensive modality targeting the emotional, cognitive, social, and behavioral problems. DBT PE therapy is a comprehensive modality for a wide range of symptoms related to SB.

The study tested DBT PE intervention through its application to the experimental group and not the control group and it proved to have a statistically significant effect on the study disorders. There was a statistically significant difference between the experimental and control groups’ mean scores for SB, DD, and PTSD after the application of DBT PE at midline and end-line assessments. This resulted from the great reduction in the mean score of the experimental group due to the application of the DBT PE. Therefore, the study established that DBT PE is an efficacious treatment for SB, DD, and PTSD and the treatment effects are sustainable. This implies that DBT PE is a viable intervention for suicide prevention. The proven efficacy and sustainability of DBT PE in the treatment of SB, PTSD, and DD fills in the gap that scholars, public health authorities, and the general public have been calling for by providing an empirically tested suicide prevention strategy in the Kenyan context.

5.4 Recommendations

The study established the prevalence and severity of SB and its comorbidities. It also indicated the factors that put adolescents at risk of SB, and provided empirical support for the efficaciousness of DBT PE as an intervention for SB and its comorbidities. Given the results, the following recommendations are made:
1. The high prevalence (21.5%) of SB and SB with its comorbid DD and PTSD (15%) among the low socioeconomic adolescents implies there is a substantial number (21.5%) of suicidal students and a good number (15%) of them have multiple psychiatric problems. The students with psychiatric problems are in need of mental health services to function normally and be productive. There is a need, therefore, for the ministry of health to establish affordable basic mental health services in high school settings. In such mental health services, the clinical psychologists would collaborate with the school nurses in providing knowledge and materials for psychological assessment of common psychiatric problems such as DD, SB, and PTSD. Relevant referrals to psychiatric units would then be made for those exhibiting severe symptoms.

2. The study results further indicate the need to incorporate mental health knowledge among the life-skills training in high schools. The study therefore recommends that the Kenya Institute of Curriculum Development liaise with clinical psychologists to include some basic DBT PE skills in the High schools’ life-skills programs. Some of the skills that can be adopted include mindfulness, distress tolerance, emotional regulation, and interpersonal effectiveness. These skills are highly needed since they equip a person with relevant skills for coping with life challenges in an effective way which is a buffer to the development of DD, PTSD, and SB. Furthermore, school counselors need to be trained in these life skills.

3. The parents, teachers, religious leaders, and other caretakers of adolescents need psychoeducation on SB and its risk factors so that they can be supportive and encourage open communication. Forums need to be created where professionals can talk about SB in community-based programs, mass media,
and social media, to demystify it. Enhancing the perceptions of SB as a mental health problem widely would help remove the stigma and encourage the affected persons to seek professional assistance. This would help promote a non-judgmental attitude and view disclosing adolescents as distressed persons in need of help. The development of the right attitude in society would encourage social support and accord the necessary referral for suicidal adolescents

4. The study indicates high comorbidity of SB with psychiatric disorders which implies that SB is a mental health problem and not a criminal offense. Therefore, it is recommended that policymakers in Kenya decriminalize suicide attempts to alleviate the stigmatization associated with it, which is a likely hindrance to self-disclosure. Further, since attempted suicide is a great risk factor for future suicidal attempts it needs to be treated as a clinical emergency in Kenya. Suicide attempters need psychiatric assessment to rule out multiple disorders and also to be accorded relevant effective intervention. Clinical psychologists are therefore needed in clinical and non-clinical settings to offer professional services in the psychological assessment for multiple mental problems. The assessment would lead to psychological interventions and treatment of underlying mental problems.

5. Psychologists and medical practitioners who deal with distressed persons need to understand the severity levels as well as the predictors and risk factors for SB. This would go a long way in helping identify suicidal persons so that they can be accorded relevant intervention. There is a need to avail assessments and psychotherapeutic intervention to persons who present with multiple SB risk factors such as suicidal plans, attempts, and expression of hopelessness or
worthlessness, relationship distress, and have undergone trauma. Psychosocial support in the form of therapy groups is essential for adolescents who do not live with immediate family members since they are at a high risk for suicidality. Additionally, psychoeducation on the risk factors for SB would help adolescents enhance peer support and relevant referrals.

6. Finally, since DBT PE was found to be an efficacious treatment for SB, there is a need to recognize that death by suicide is preventable. The study therefore recommends that counseling and clinical psychologists dealing with high-risk patients, and those working in psychiatric units be trained in DBT PE psychotherapeutic skills. DBT PE skills will go a long way in reducing mortality rates associated with suicide.

The proven efficacy of DBT PE provides a viable argument for incorporating it in the suicide prevention strategies, especially those targeting the youth. This is in line with the MoH's effort to reduce suicide mortality rates and WHO (2014) recommendation that countries include empirically tested suicide prevention models among their health priority. Hence, DBT PE is recommended as a viable intervention to be included in the Kenya national suicide prevention strategies.

### 5.5 Recommendations for Further Research

The following areas for future research could add to the findings in this study:

1. Replication of the current study in a different set-up using a larger and more diverse population is essential for comparative reasons. Since the current study was confined to high school students in informal settlements of Nairobi County, the future study could be carried out in different Counties, primary schools, colleges, universities, hospitals, or communities. This would provide
a wider range of sociodemographic factors that are associated with SB. It would also give more insight into the prevalence, risk factors of SB, and interventional response in a multicultural context and across the diverse human development lifespan.

2. Since females and those living with non-family members were found to be at a higher risk for SB and its comorbidities, further studies taking a qualitative approach would help get an in-depth investigation of the aspects that increase the risk among these groups of adolescents. Additionally, a comparison study for males versus females examining the biopsychosocial aspects that influence the development of the study disorders is recommended. This discovery would help devise strategies that specifically target each high-risk group.

3. There is a need for a mixed-method approach to the current study, incorporating group discussions and in-depth interviews with the questionnaire responses. These would be essential in assessing the perception and response of adolescents and their caregivers towards SB triggers, risk factors, and interventions and hence, provide greater insight into the study topic.

4. A study focused on the effect of DBT PE on the severity aspects of SB, DD, and PTSD is recommended. The study could focus on different levels of the disorders’ severity or their symptom severity. For instance, on levels of severity, the study would track the changes in participants' levels of disorders from extreme, severe, moderate, and borderline to mild levels. On symptom severity, the changes in participants' suicidal ideations, plans, or attempts can be assessed. In DD and PTSD, it could be changes in symptoms such as sleeping patterns, irritability, cognitive distortions, avoidance behavior, or hyper-arousal among others.
5. A longitudinal study would be effective in assessing the sustainability of DBT PE effect in a longer period among Kenyan adolescents. Evaluation after more than six months is recommended for a clearer picture on the long-term sustainability of the intervention's effect.

5.6 Summary

The chapter has discussed the key findings on SB among high school students. The discussion of the key study results indicates consistency with previous studies on SB prevalence, risk factors, and intervention efficacy. The key findings have been concluded and general recommendations, as well as recommendations for future research, have been drawn. The main objective of the study was achieved proving DBT PE to be an efficacious treatment for SB and its comorbid DD and PTSD among the adolescent population in Kenya. Hence, the study outlined in its recommendations the adoption of DBT PE in the Kenyan suicide prevention strategy as an empirically tested intervention for SB. The study also recommended carrying out further studies in diverse set-ups and populations for more insight into the adoption of DBT PE in the Kenyan context.

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**APPENDICES**

**APPENDIX A: Informed Consent and Assent Letters**

**Informed Consent for School Principal (Experimental Group)**

My name is Priscilla Mugambi, a PhD student in clinical psychology from Daystar University. I am conducting a research study titled:

‘Effectiveness of dialectical behavior and prolonged exposure therapy on suicidal behavior among adolescents, with posttraumatic stress and depressive disorders in Nairobi, Kenya’.

The students in your school are invited to participate in this study. The participation will entail filling in a demographic questionnaire and psychological assessment tests for screening symptoms of posttraumatic stress, depressive disorders and suicidal behavior. Following the assessment, those who qualify to be in the study will be put in groups which will receive 12 sessions of life skills using DBT PE therapy. After completing the therapy, assessment tests will be administered, one upon completion and another one after 8 weeks.

Participation in this study will be on voluntary basis and inability to continue at any one time will not be penalized in any way. All the information gathered will be treated with confidentiality and will be used for the purposes of this study. To ensure privacy the name of your school will remain anonymous. Students will not be required to indicate their names in the questionnaires, instead each participant will use a number code for identification so as to locate their data for statistical analysis purposes.

Participation in this study may cause some emotional discomforts, which will be addressed through availing psychological support from the researcher and referring to counsellors. Participation may however bring long term benefits to the students who will be empowered with relevant life skills. It may also benefit your school and may lead to formulation of policies towards treatment of depression, PTSD and suicidal tendencies.

I am requesting your support since none of the personal information will be made public. For any questions or concerns in regard to this study, please feel free to contact me through priscillawmugambi@daystar.ac.ke or you can contact my supervisor Dr. Munene on amunene@daystar.ac.ke.

If you agree to give your consent for this study please sign below:-

**Declaration**

I __________________________________________________ after receiving information about this study and understanding it, I hereby give consent for the students in …………………….. school to participate.

The Principal
Informed Consent from School Principal (Control group)

My name is Priscilla Mugambi, a PhD student in clinical psychology from Daystar University. I am conducting a research study titled:

‘Effectiveness of dialectical behavior and prolonged exposure therapy on suicidal behavior among adolescents, with posttraumatic stress and depressive disorders in Nairobi, Kenya’.

The students in your school are invited to participate in this study. The participation will entail filling in a demographic questionnaire and psychological assessment tests for screening symptoms of posttraumatic stress, depressive disorders and suicidal behavior. Following the assessment, those who qualify to be in the study will be requested to complete some follow-up assessment tests at the middle of the study (after about 8 weeks) and at the end of it (after another 8 weeks).

Participation in this study will be on voluntary basis and inability to continue will not be penalized in any way. All the information gathered will be treated with confidentiality and will be used for the purposes of this study. To ensure privacy the name of your school will remain anonymous. Students will not be required to indicate their names in the questionnaires, instead each participant will use a number code for identification so as to locate their data for statistical analysis purposes.

Participation in this study may cause some emotional discomforts, which will be addressed through availing 2 debriefing sessions and psychological support from the researcher and referrals to counsellors after the study. Participation may however bring long term benefits since it may contribute to the empowerment of high school students with relevant life skills and may lead to formulation of policies towards treatment of mental problems.

For any questions or concerns in regard to this study, please feel free to contact me through priscillawmugambi@daystar.ac.ke or you can contact my supervisor Dr. Munene on amunene@daystar.ac.ke.

If you agree to give your consent for this study please sign below:-

Declaration

I ________________________________ after receiving information about this study and understanding it, I hereby give consent for the students in ________________________________ to participate.

The Principal
Signature _________________________ Date ________________

Witness
Signature _________________________ Date ________________
Informed consent and assent for students (experimental group)

My name is Priscilla Mugambi, a PhD student in clinical psychology at Daystar University. I am conducting a research study titled:

‘Effectiveness of dialectical behavior and prolonged exposure therapy on suicidal behavior among adolescents, with posttraumatic stress and depressive disorders in Nairobi, Kenya’.

As a high school student, you are invited to be a participant in this study. The participation will entail filling in a questionnaire with some personal details and completing some psychological assessment tests which are routinely used as preliminary screens for clinical conditions involving symptoms of depressive disorders and posttraumatic stress. Following the assessment, those who qualify to be in the study will be put in a group which will receive some life skills using DBT PE therapy for 12 weeks. You will be required to complete some follow-up questionnaires after the therapy and a final one 8 weeks thereafter which will mark end of the study.

Participation in this study will be on voluntary basis and inability to continue at any one time will not be penalized in any way. All the information gathered will be treated with confidentiality and used for the purposes of this study. To ensure privacy, you will not be required to indicate your name in the questionnaires; instead, each participant will use their admission number for identification so as to locate your data for statistical analysis purposes.

Participation in this study may cause some emotional discomforts, which will be addressed through making available psychological support from the researcher and her team of counsellors. Participation in this study may however bring long term benefits to you since you will be empowered with relevant life skills. It may also benefit your school and lead to formulation of policies towards treatment of depression, PTSD and suicidal tendencies.

I encourage you to be as truthful as possible since none of your information will be made public. For any questions or concerns regarding this study, please feel free to contact me through this number … In case of any other questions or concerns that you do not feel can be addressed by the researcher, please contact the supervisor of this research on the email address …

If you agree to give your consent for this study please sign below:-

Declaration

I ________________________ after receiving information about this study and understanding it. I hereby confirm that I am willing to participate.

Participant
Signature ……………………………… Date ……………………..
Informed consent and assent for students (control group)

My name is Priscilla Mugambi, a PhD student in clinical psychology from Daystar University. I am conducting a research study titled:

‘Effectiveness of dialectical behavior and prolonged exposure therapy on suicidal behavior among adolescents, with posttraumatic stress and depressive disorders in Nairobi, Kenya’.

As a high school student, you are invited to be a participant in this study. The participation will entail filling in a questionnaire with some personal details and completing of some psychological assessment tests which are routinely used as preliminary screens for clinical conditions involving symptoms of depressive disorders and posttraumatic stress. Following the assessment, those who qualify to be in the study will be requested to complete some follow-up questionnaires at the middle of the study (after about 8 weeks) and at the end of the study (after 16 weeks). Two therapy sessions will be conducted thereafter.

Participation in this study will be on voluntary basis and inability to continue will not be penalized in any way. All the information gathered will be treated with confidentiality and used for the purposes of this study. To ensure privacy you will not be required to indicate your name in the questionnaires, instead each participant will be allocated a number code for identification so as to locate your data for statistical analysis purposes.

Participation in this study may cause some emotional discomforts, which will be addressed through making available psychological support from the researcher and her team of counsellors after the study. Participation in this study may however bring long term benefits since it may contribute to the empowerment of high school students with relevant life skills and may lead to formulation of policies towards treatment of depression, PTSD and suicidal tendencies.

I encourage you to be as truthful as possible since none of the personal information will be made public. For any questions or concerns regarding this study, please feel free to contact me through this number, … In case of any other questions or concerns that you do not feel can be addressed by the researcher, please contact the supervisor of this research on the email address amunene@daystar.ac.ke.

If you agree to give your consent for this study please sign below.

Declaration

I _________________________________________________________ after receiving information about this study and understanding it. I hereby confirm that I am willing to participate.

Participant
Signature …………………………………… Date ………………………
APPENDIX B: Sociodemographic Questionnaire
DEMOGRAPHIC QUESTIONNAIRE

Part I: Informed Assent

In this questionnaire, you are required to give your personal details. Your identity and the information you give will be kept confidential and will only be used for the academic research purposes. Participation in this research is free and voluntary. However, your cooperation in completing these questions honestly and as accurately as possible is highly appreciated. Please do not write your name on this paper only use the identification number given.

If you have understood the purpose of the study and have given your assent, you may proceed to respond to the questions.

Code: ____________________________ Date: ____________________________

Part II: Bio-Data

Please tick the most appropriate response and fill in the gap __________ where appropriate.

1. What is your gender?
   i) Male  ii) Female

2. What is your age?

3. Which year of study are you in?
   i) Form 1  ii) Form 2  iii) Form 3  iv) Form 4

4. What is your religious affiliations?
   i) Protestant  ii) Catholic  iii) Pentecostal  iv) Muslim
   v) Other

5. Please indicate your ethnic group?
   i) Luo  ii) Kikuyu  iii) Luhyia  iv) Kalejín  v) Kamba
   v) Others

6. Where do you live?

7. Whom do you live with?

8. How many rooms is your house?

Part II: Stressors

9. The following statements describe life experiences that are likely to stress someone. Rate by ticking the extent to which you agree with the following statements as a cause of stress in your life?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
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<tbody>
<tr>
<td>i) Physical illnesses/ pain.</td>
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<tr>
<td>ii) Disturbing experiences (violence, accident, rape, abused, bullied)</td>
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<td>iii) Mental problems (Depression, worry, panic, disturbed sleep, hallucinations etc.)</td>
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<td>iv) Alcohol, drugs or substance abuse</td>
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<td>v) Relationships with others (broken friendship, rejection, discrimination etc.)</td>
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<td>vi) Financial problems (lack school fees, food, personal items etc.)</td>
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<td>vii) Academic problems</td>
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<td>viii) Family problems (conflict with parent/guardian, neglected etc.)</td>
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<td>ix) Death of a close family member</td>
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<td>x) Feeling hopeless, worthless, like giving up in life.</td>
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<td></td>
</tr>
</tbody>
</table>
## APPENDIX D: PTSD Checklist for DSM-5

Please read each group of statements carefully, then pick out one statement in each group which best describes the way you have been feeling the PAST TWO WEEKS, including TODAY. Circle the number beside the statement you picked. If several statements in a group seem to apply equally well, circle the highest number for that group.

### 1. Sadness
- 0 I do not feel sad.
- 1 I feel sad much of the time.
- 2 I am sad all the time.
- 3 I am so sad or unhappy that I can’t stand it.

### 2. Pessimism
- 0 I am not discouraged about my future.
- 1 I feel more discouraged about my future than I used to.
- 2 I do not expect things to work out for me.
- 3 I feel my future is hopeless and will only get worse.

### 3. Past Failure
- 0 I do not feel like a failure.
- 1 I have failed more than I should have.
- 2 As I look back, I see a lot of failures.
- 3 I feel I am a total failure as a person.

### 4. Loss of Pleasure
- 0 I get as much pleasure as ever did from the things I enjoy.
- 1 I don’t enjoy things as much as I used to.
- 2 I get very little pleasure from the things I used to enjoy.
- 3 I can’t get any pleasure from the things I used to enjoy.

### 5. Guilty Feelings
- 0 I don’t feel particularly guilty.
- 1 I feel guilty about many things I have done or should have done.
- 2 I feel quite guilty most of the time.
- 3 I feel guilty all of the time.

### 6. Punishment Feelings
- 0 I don’t feel I am being punished.
- 1 I feel I may be punished.
- 2 I expect to be punished.
- 3 I feel I am being punished.

### 7. Changes in Sleeping Pattern
- 0 I have not experienced any change in my sleep patterns.
- 1a I sleep somewhat more than usual.
- 1b I sleep somewhat less than usual.
- 2a I sleep a lot more than usual.
- 2b I sleep a lot less than usual.
- 3a I sleep most of the day.
- 3b I wake up 1-2 hours early and can’t get back to sleep.

### 8. Self-Criticalness
- 0 I don’t criticize or blame myself more than usual.
- 1 I am more critical of myself than I used to be.
- 2 I criticize myself for all of my faults.
- 3 I blame myself for everything bad that happens.

### 9. Suicidal Thoughts or Wishes
- 0 I don’t have any thoughts or wishes to kill myself.
- 1 I have thoughts of killing myself, but I would not carry them out.
- 2 I would like to kill myself.
- 3 I would kill myself if I had the chance.

### 10. Crying
- 0 I don’t cry any more than I used to.
- 1 I cry more now than I used to.
- 2 I cry over every little thing.
- 3 I feel like crying, but I can’t.

### 11. Agitation
- 0 I am no more restless or wound up than usual.
- 1 I feel more restless or wound up than usual.
- 2 I am so restless or agitated that it’s hard to stay still.
- 3 I am so restless or agitated that I have to keep moving or doing something.

### 12. Loss of Interest
- 0 I have not lost interest in other people or activities.
- 1 I am less interested in other people or things than before.
- 2 I have lost most of my interest in other people or things.
- 3 It’s hard to get interested in anything.

### 13. Indecisiveness
- 0 I make decisions as well as ever.
- 1 I find it more difficult to make decisions than usual.
- 2 I have greater difficulty in making decisions than before.
- 3 I have trouble making any decisions.

### 14. Worthlessness
- 0 I do not feel I am worthless.
- 1 I don’t consider myself as worthless as I used to be.
- 2 I feel more worthless as compared to other people.
- 3 I feel utterly worthless.

### 15. Loss of Energy
- 0 I have as much energy as ever.
- 1 I have less energy than I used to.
- 2 I don’t have enough energy to do very much.
- 3 I don’t have enough energy to do anything.

### 16. Self-Dislike
- 0 I don’t feel the same about myself as I used to.
- 1 I have lost confidence in myself.
- 2 I am disappointed in myself.
- 3 I dislike myself.

### 17. Irritability
- 0 I am no more irritable than usual.
- 1 I am more irritable than usual.
- 2 I am much more irritable than usual.
- 3 I am irritable all the time.

### 18. Changes in Appetite
- 0 I have not experienced any change in my appetite.
- 1a My appetite is somewhat less than usual.
- 1b My appetite is somewhat greater than usual.
- 2a My appetite is much less than before.
- 2b My appetite is much greater than before.
- 3a I have no appetite at all.
- 3b I crave food all the time.

### 19. Concentration Difficulty
- 0 I can concentrate as well as ever.
- 1 I cannot concentrate as well as usual.
- 2 It’s hard to keep my mind on anything for very long.
- 3 I find I can’t concentrate on anything.

### 20. Tiredness or Fatigue
- 0 I am no more tired or fatigue than usual.
- 1 I get more tired or fatigued much more easily than usual.
- 2 I am too tired or fatigued to do a lot of things I used to.
- 3 I am too tired or fatigued to do most of the things I used to.

### 21. Loss of Interest in Sex
- 0 I have not noticed any recent change in my interest in sex.
- 1 I am less interested in sex than I used to be.
- 2 I am much less interested in sex now.
- 3 I have lost interest in sex completely.

---

**Name:**

**DOB:**

**Date:**

**Score:**

---

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### PCL-S

**Instructions:** Below is a list of problems that people sometimes have in response to a very stressful experience. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past two weeks.

<table>
<thead>
<tr>
<th>In the past month, how much were you bothered by:</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Moderately</th>
<th>Quite a bit</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Repeated, disturbing, and unwanted memories of the stressful experience?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. Repeated, disturbing dreams of the stressful experience?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Suddenly feeling or acting as if the stressful experience were actually happening again (as if you were actually back there reliving it)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. Feeling very upset when something reminded you of the stressful experience?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. Having strong physical reactions when something reminded you of the stressful experience (for example, heart pounding, trouble breathing, sweating)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. Avoiding memories, thoughts, or feelings related to the stressful experience?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. Avoiding external reminders of the stressful experience (for example, people, places, conversations, activities, objects, or situations)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. Trouble remembering important parts of the stressful experience?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. Having strong negative beliefs about yourself, other people, or the world (for example, having thoughts such as: I am bad, there is something seriously wrong with me, no one can be trusted, the world is completely dangerous)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. Blaming yourself or someone else for the stressful experience or what happened after it?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. Having strong negative feelings such as fear, horror, anger, guilt, or shame?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. Loss of interest in activities that you used to enjoy?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. Feeling distant or cut off from other people?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. Trouble experiencing positive feelings (for example, being unable to feel happiness or have loving feelings for people close to you)?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. Irritable behavior, angry outbursts, or acting aggressively?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. Taking too many risks or doing things that could cause you harm?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. Being “superalert” or watchful or on guard?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. Feeling jumpy or easily startled?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. Having difficulty concentrating?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. Trouble falling or staying asleep?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

---

APPENDIX E: Suicide Behaviors Questionnaire-Revised

---

250
SBQ-R

Please tick the number beside the statement or phrase that best applies to you in the past **two weeks**.

1. Have you ever thought about or attempted to kill yourself?
   - [ ] 1. Never
   - [ ] 2. It was just a brief passing thought
   - [ ] 3a. I have had a plan at least once to kill myself but did not try to do it
   - [ ] 3b. I have had a plan at least once to kill myself and really wanted to die
   - [ ] 4a. I have attempted to kill myself, but did not want to die
   - [ ] 4b. I have attempted to kill myself, and really hoped to die

2. How often have you thought about killing yourself in the past **two weeks**?
   - [ ] 1. Never
   - [ ] 2. Rarely (1 time)
   - [ ] 3. Sometimes (2 times)
   - [ ] 4. Often (3-4 times)
   - [ ] 5. Very Often (5 or more times)

3. Have you ever told someone that you were going to commit suicide, or that you might do it?
   - [ ] 1. No
   - [ ] 2a. Yes, at one time, but did not really want to die
   - [ ] 2b. Yes, at one time, and really wanted to die
   - [ ] 3a. Yes, more than once, but did not want to do it
   - [ ] 3b. Yes, more than once, and really wanted to do it

4. How likely is it that you will attempt suicide someday?
   - [ ] 0. Never
   - [ ] 1. No chance at all
   - [ ] 2. Rather unlikely
   - [ ] 3. Unlikely
   - [ ] 4. Likely
   - [ ] 5. Rather likely
   - [ ] 6. Very likely
Daystar University Ethics Review Board

Our Ref. DU-ERB/03/04/ 2019/00271B

Date: 03-04-2019

Priscilla Mugambi

Dear Priscilla,

EFFECTIVENESS OF DIALECTICAL BEHAVIOR AND PROLONGED EXPOSURE THERAPY ON SUICIDAL BEHAVIOR AMONG HIGH SCHOOL STUDENTS WITH POST-TRAUMATIC STRESS AND DEPRESSIVE DISORDERS IN NAIROBI COUNTY, KENYA

Reference is made to your request dated 11-03-2019 for ethical approval of your proposal by Daystar University Ethics Review Board.

We are pleased to inform you that ethical review has been done and approval granted. In line with the research projects policy, you will be required to submit a copy of the final research findings to the Board for records.

Before proceeding to the next stage, ensure the following attached comments are addressed to the satisfaction of your supervisor. Note that it’s an offence to proceed without addressing the concerns of ERB.

This approval is valid for a year from 03-04-2019

This approval does not exempt you from obtaining a research permit from the National Commission for Science, Technology and Innovation (NACOSTI).

Yours sincerely,

Mrs. Purity Kiambi,
Secretary, Daystar University Ethics Review Board

APPENDIX G: NACOSTI Permit
NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Ref No. NACOSTI/P/19/1469/29944

Date 2nd August, 2019.

Priscilla Wanjiku Mugambi
Daystar University
P.O Box 44400-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Effectiveness of dialectical behavior and prolonged exposure therapy on suicidal behavior among High School students, with posttraumatic stress and depressive disorders in Nairobi County, Kenya.” I am pleased to inform you that you have been authorized to undertake research in Nairobi County for the period ending 27th May, 2020.

You are advised to report to the County Commissioner and the County Director of Education, Nairobi County before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a copy of the final research report to the Commission within one year of completion. The soft copy of the same should be submitted through the Online Research Information System.

DR. STEPHEN K. KIBIRU, PhD.
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Nairobi County.

The County Director of Education
Nairobi County.

NACOSTI Permit Card
APPENDIX H: Ministry of Education Approval

THIS IS TO CERTIFY THAT:

MS. PRISCILLA WANIJKU MUGAMI
of DAYSTAR UNIVERSITY, 76240-508 Nairobi, has been permitted to conduct research in Nairobi County on the topic: EFFECTIVENESS OF DIALECTICAL BEHAVIOR AND PROLONGED EXPOSURE THERAPY ON SUICIDAL BEHAVIOR AMONG HIGH SCHOOL STUDENTS, WITH POSTTRAUMATIC STRESS AND DEPRESSIVE DISORDERS IN NAIROBI COUNTY, KENYA.

for the period ending:

27th May, 2020

Applicant's Signature

Director General
National Commission for Science, Technology & Innovation

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013

The Grant of Research Licenses is guided by the Science, Technology and Innovation (Research Licensing) Regulations, 2014.

CONDITIONS

1. The License is valid for the proposed research, location and specified period.
2. The License and any rights therewith are non-transferable.
3. The Licensee shall inform the County Governor before commencement of the research.
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
5. The Licensee does not give authority to transfer research materials.
6. NACOSTI may monitor and evaluate the licensed research project.
7. The Licensee shall submit one hard copy and upload a soft copy of their final report within one year of completion of the research.
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice.

National Commission for Science, Technology and Innovation
P.O. Box 36623 - 00108, Nairobi, Kenya
TEL: 020 460 7000, 9713 708787, 0735 404245
Email: dgi@nacostig.gk, registry@nacostig.gk
Website: www.nacostig.gk

Serial No. 26302

CONDITIONS: see back page

APPENDIX H: Ministry of Education Approval
Ref: RCE/NRB/GEN/I/VOL. I

DATE: 20th September, 2019

Priscilla Wanjiku Mugambi
Daystar University
P O Box 444-00100
NAIROBI

RE: RESEARCH AUTHORIZATION

We are in receipt of a letter from the National Commission for Science, Technology and Innovation regarding research authorization in Nairobi County on "Effectiveness of dialectical behavior and prolonged exposure on suicidal behavior among High School students, with posttraumatic stress and depressive disorders in Nairobi County, Kenya".

This office has no objection and authority is hereby granted for a period ending 27th May, 2020 as indicated in the request letter.

Kindly inform the Sub County Director of Education you intend to visit.

JAMES KIMOTHO
FOR REGIONAL DIRECTOR OF EDUCATION
NAIROBI

G.C
Director General/CEO
National Commission for Science, Technology and Innovation
NAIROBI
PRISCILLA MUGAMBI

PO BOX 76240 00508
NAIROBI, KENYA priscillashiku@gmail.com

PROFILE:
A dedicated professional with over 10 years combined experience as a lecturer, psychotherapist, child development specialist and trainer.

PROFESSIONAL EXPERIENCE:

<table>
<thead>
<tr>
<th>Position</th>
<th>Employer</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjunct Lecturer</td>
<td>Riara University</td>
<td>01/2015 – On Going</td>
</tr>
<tr>
<td>Psychotherapist</td>
<td>Private Consultant</td>
<td>01/2016 – On Going</td>
</tr>
<tr>
<td>Trainer/ Facilitator</td>
<td>Private Consultant</td>
<td>06/2006 – On Going</td>
</tr>
<tr>
<td>Assistant Instructor</td>
<td>Kumon Learning Center</td>
<td>02/2005 - 03/2007</td>
</tr>
<tr>
<td>Social Worker</td>
<td>Compassion Kenya</td>
<td>02/2000- 03/2006</td>
</tr>
<tr>
<td>Researcher/ Part-Time Lecturer</td>
<td>KISWCD</td>
<td>01/2003 – 01/2004</td>
</tr>
</tbody>
</table>

EDUCATION:

<table>
<thead>
<tr>
<th>Institution</th>
<th>Degree</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daystar University</td>
<td>PhD in Clinical Psychology</td>
<td>2016-on going</td>
</tr>
<tr>
<td>Daystar University</td>
<td>Masters in Child Development</td>
<td>2012-2014</td>
</tr>
<tr>
<td>University of Nairobi</td>
<td>BA in Social Work</td>
<td>1999-2003</td>
</tr>
</tbody>
</table>

APPENDIX I: Researcher’s Resume
APPENDIX J: DBT Skills Certificate

DBT SKILLS
WITH MARSHA LINEHAN

"LETTER OF COMPLETION"

THIS CERTIFIES THAT

Priscilla Mugambi

COMPLETED THE
DBT® SKILLS WITH MARSHA LINEHAN
6 WEEKS/72 HOURS ONLINE COURSE

DATE
September 26, 2018

Marsha M. Linehan, Ph.D., ABPP
APPENDIX K: DBT PE 12 Sessions Summary

DIALECTICAL BEHAVIOR AND PROLONGED EXPOSURE THERAPY
SUMMARISED 12 SESSIONS TRAINING

SESSION 1

1.1 INTRODUCTION

Goals of DBT Skills Training

General Goal: To learn how to change your own behaviors, emotions, and thoughts that are linked to problems in living and are causing misery and distress.

- Specific Goals
  i) Decrease: Mindlessness; emptiness; judgmentalness. Interpersonal conflict and stress; loneliness, inflexibility; extreme emotions, mood-dependent behavior, difficulties in regulating emotions, Impulsive behaviors; acting without thinking; difficulties accepting reality as it is, willfulness, addiction.
  ii) Increase: Mindfulness skills, Interpersonal effectiveness skills, Emotion regulation skills, Distress tolerance skills.

- Guidelines for Skills Training

1.2 MINDFULNESS

Goals of Mindfulness Practice: Reduce Suffering and Increase Happiness, Increase Control of Your Mind, Experience Reality as It Is

States of Mind

i) Reasonable Mind Is: Cool, Rational and Task-Focused. When in reasonable mind you are ruled by facts, reason, logic, and pragmatics. Values and feelings are not important.
ii) Emotion Mind Is: Hot, Mood-Dependent and Emotion-Focused. When in emotion mind, you are ruled by your moods, feelings, and urges to do or say things. Facts, reason, and logic are not important.

iii) Wise Mind Is: The wisdom within each person. It helps see the value of both reason and emotion. Bringing left brain and right brain together.

Ideas for Practicing Wise Mind

The mindfulness skills often require a lot of practice. As with any new skill, it is important to first practice when you don’t need the skill. If you practice in easier situations, the skill will become automatic, and you will have the skill when you need it. Practice with your eyes closed and with your eyes open.

- Stone flake on the lake.
- Walking down the spiral stairs.
- Asking Wise Mind a question.
- Asking is this Wise Mind?
- Attending to your breath coming in and out,
- Expanding awareness.

SESSION TWO

Taking Hold of Your Mind

“What” Skills and “How” Skills

“What” Skills:

i) Observe: Notice your body sensations, Pay attention, Control your attention, Practice wordless watching, and Observe both inside and outside yourself.
ii) Describe: Put words on the experience, Label what you observe, Unglue your interpretations and opinions, if you can’t observe it through your senses, you can’t describe it.

iii) Participate: Throw yourself completely into activities of the current moment. Become one with whatever you are doing, Act intuitively from Wise Mind, Go with the flow.

“How” Skills

i) Nonjudgmentally: See, but don’t evaluate as good or bad, Accept each moment, Acknowledge the helpful and the harmful, the safe and the dangerous, but don’t judge them. Acknowledge your values, wishes, emotional reactions, but don’t judge them. When you find yourself judging, don’t judge your judging.

ii) One-Mindfully: Rivet yourself to now. Be completely present to this one moment, Do one thing at a time. Notice the desire to be half-present, be somewhere else in your mind, to multitask—and then come back to one thing at a time. Let go of distractions. If actions, thoughts, or strong feelings distract you, go back to what you are doing, Concentrate your mind. If you find you are doing two things at once, stop—go back to one.

iii) Effectively: Be mindful of your goals in the situation, Focus on what works. (Don’t let emotion mind get in the way of being effective). Play by the rules. Act as skillfully as you can. Do what is needed for the situation you are in—not the situation you wish you were in. Let go of willfulness and sitting on your hands.

SESSION THREE

1.3 DISTRESS TOLERANCE SKILLS
Goals of Distress Tolerance: To survive crisis situations without making them worse, to accept reality replace suffering and being “stuck” with ordinary pain and the possibility of moving forward, become free of having to satisfy the demands of your own desires, urges, and intense emotions.

Crisis Survival Skills

These are skills for tolerating painful events, urges, and emotions when you cannot make things better right away.

i) STOP Skill

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stop</td>
<td>Do not just react. Stop! Freeze! Do not move a muscle! Your emotions may try to make you act without thinking. Stay in control!</td>
</tr>
<tr>
<td>Take a step back</td>
<td>Take a step back from the situation. Take a break. Let go. Take a deep breath. Do not let your feelings make you act impulsively</td>
</tr>
<tr>
<td>Observe</td>
<td>Notice what is going on inside and outside you. What is the situation?</td>
</tr>
<tr>
<td>What are your thoughts and feelings?</td>
<td></td>
</tr>
<tr>
<td>What are others saying or doing?</td>
<td></td>
</tr>
<tr>
<td>Proceed mindfully</td>
<td>Act with awareness. In deciding what to do, consider your thoughts and feelings, the situation, and other people’s thoughts and feelings.</td>
</tr>
<tr>
<td>Think about your goals.</td>
<td>Ask Wise Mind: Which actions will make it better or worse?</td>
</tr>
</tbody>
</table>

ii) Pros and Cons

Use pros and cons any time you have to decide between two courses of action.

Pros:

The advantages, benefits or positive gains

Cons:

The disadvantages, challenges, negative consequences

iii) TIP Skills: Changing Your Body Chemistry

To reduce extreme emotion mind fast.

<table>
<thead>
<tr>
<th>Tip the Temperature</th>
<th>Dive your face into a bowl of cold water, holding your breath.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intense exercise</td>
<td>Hold a cold pack on your eyes.</td>
</tr>
<tr>
<td>Paired muscle relaxation</td>
<td>Intense exercise to calm down your body when it is revved up by emotion); Engage in intense exercise,</td>
</tr>
<tr>
<td></td>
<td>While breathing deeply into your belly, tense your body muscles. Notice the tension. Breathing out, and “Relax”</td>
</tr>
</tbody>
</table>
iv) Distracting

A way to remember these skills is the phrase “Wise Mind ACCEPTS.”

<table>
<thead>
<tr>
<th>Activities</th>
<th>Focus attention on current tasks, Engage in your hobbies e.g.: watch movies, Clean a room, visit friend, go for sports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributing</td>
<td>Do volunteer work, Help a needy person, Give a surprise card, favor, a hug). Give away things you don’t need.</td>
</tr>
<tr>
<td>Comparisons</td>
<td>Compare current feelings with worse past feelings. Think about Engage in events that create different emotions. E.g. Read emotional books or stories, old letters. Watch comedy, Listen to emotional music.</td>
</tr>
<tr>
<td>Emotions</td>
<td>Compare yourself to those less fortunate Engage in events that create different emotions. E.g. Read emotional books or stories, old letters. Watch comedy, Listen to emotional music.</td>
</tr>
<tr>
<td>Pushing away</td>
<td>Leaving the situation physical and mentally for a while. Build an imaginary wall, Block thoughts and images from mind</td>
</tr>
<tr>
<td>Thoughts</td>
<td>Count to 10; count colors in a painting, Repeat words to a song in your mind. Work puzzles.</td>
</tr>
<tr>
<td>Sensations</td>
<td>Squeeze a rubber ball very hard. Listen to very loud music. Hold ice in your hand or mouth.</td>
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v) Self-Soothing

A way to remember these skills is to think of soothing each of your five senses.

| Vision | Look at the stars at night, at pictures in a book, beautiful flower, a candle flame. Go people-watching or window-shopping. |
| Hearing | Listen to soothing music, Pay attention to sounds of nature (waves, birds, rainfall, and leaves rustling). Sing or hum a favorite songs. |
| Smell | Smell a flower, favorite soap, shampoo, cologne. Open a package of coffee and inhale the aroma. Put potpourri or eucalyptus oil in. |
| Taste | Eat your favorite foods. Drink your favorite soothing drink. Treat yourself to a dessert. Such or chew peppermint candy or gum |
| Touch | Take a hot bath or shower. Pet your dog or cat. Have a massage. Soak your feet. Put creamy lotion on your body or a cold compress on face |

vi) Improving the Moment

A way to remember these skills is the word IMPROVE

| Imagery | Imagine a relaxing scenes, Imagine hurtful emotions draining out of you like water out of a pipe. Imagine yourself in a happy time |
| Meaning | Find purpose or meaning in a painful situation. Focus on whatever positive aspects of a painful situation you can find. |
| Prayer | Open your heart and turn things over to God. Ask for strength to bear the pain. |
| Relaxing | Breathe deeply. Change your facial expression. Drink hot milk. Massage your neck and scalp |
Focus your entire attention on just what you are doing. Keep yourself, your mind in the moment.

Get in bed, Take time off from hard work and responsibility.

Read a magazine with chocolates. Turn off your phone for a day.

Cheerlead yourself: “go, girl!” This too shall pass.” I will make it, and I am doing the best I can. Repeat over and over: “I can stand it.”

SESSION FOUR

Reality Acceptance Skills

These are skills for how to live a life that is not the life you want. That is, when you cannot keep painful events and emotions from coming your way.

Radical Acceptance

- Radical means all the way, complete and total.
- It is accepting in your mind, your heart, and your body.
- It is when you stop fighting reality, stop throwing tantrums because reality is not the way you want it, and let go of bitterness.

What Has to Be Accepted?

- Reality is as it is (the facts about your life are facts, even if you don’t like them.
- There are limitations on the future for everyone (accept only realistic limitations).
- Everything has a cause (including painful events and suffering).
- Life can be worth living even with painful events in it.

Why Accept Reality?

Practicing Radical Acceptance Step by Step

Turning the Mind: Step by Step:

i) Observe that you are not accepting.

ii) Go within yourself and make an inner commitment to accept reality as it is.
iii) Do it again, over and over. Keep turning your mind to acceptance.
iv) Develop a plan for catching yourself when you drift out of acceptance.

Willingness: Step by Step

Willingness is readiness to enter and participate fully in life and living.
i) Find a willing response to each situation, replace willfulness with willingness.
ii) Observe the willfulness. Label it. Experience it.
iii) Radically accept that at this moment you feel (and may be acting) willful.
iv) Turn your mind toward acceptance and willingness.
v) Try half-smiling and willing posture.
vi) When willfulness is immovable, ask, “What’s the threat?”

Half-Smiling and Willing Hands

Accepting reality with your body.
i) Half-Smiling:
ii) Willing Hands:

Mindfulness of Current Thoughts

i) Observe your thoughts:
ii) Adopt a curious mind:
iii) Remember: You are not your thoughts
iv) Don’t block or suppress thoughts.

SESSION FIVE

1.4 EMOTION REGULATION SKILLS

Goals of Emotion Regulation

i) Understand and Name Your Own Emotions:
ii) Decrease the Frequency of Unwanted Emotions:
iii) Decrease Emotional Vulnerability:
iv) Decrease Emotional Suffering:

**Understanding and Naming Emotions**

i) What Emotions Do for You;

ii) Factors That Make Regulating Emotions Hard:

iii) A Model for Describing Emotions:

iv) Ways to Describe Emotions

### 1.5 PROLONGED EXPOSURE THERAPY

PTSD Psycho-education

Posttraumatic stress disorders (PTSD) arises from a person being exposed to, witnessing or learning about something traumatic, distressing/troubling.

**The PTSD symptoms: 4 categories**

i) Intrusion symptoms: The traumatic event is persistently re-experienced as; -
- Unwanted upsetting memories, Nightmares, Flashbacks, Emotional distress after exposure, Physical reactivity after exposure to traumatic reminders.

ii) Avoidance of trauma-related stimuli after the trauma, in the following way(s):
- Trauma-related thoughts or feelings
- Trauma-related external reminders

iii) Negative alterations in cognitions and mood. Negative thoughts or feelings that began or worsened after the trauma, in the following way(s):
- Inability to recall key features of the trauma, Overly negative thoughts and assumptions about oneself or the world, Exaggerated blame of self or others for causing the trauma, Negative affect, Decreased interest in activities, Feeling isolated, Difficulty experiencing positive affect.

iv) Alterations in arousal and reactivity. Trauma-related arousal and reactivity that began or worsened after the trauma, in the following way(s): Irritability or
aggression, Risky or destructive behavior, Hyper vigilance, Heightened startle reaction, Difficulty concentrating, Difficulty sleeping

Introduction to Prolonged Exposure Theory (PE)

About PE Theory

Prolonged Exposure Procedure

i) Breathing retraining

ii) Imaginal Exposure

iii) In vivo Exposure or in-person Exposure

SESSION SIX

Prolonged Exposure Skills

i) Breathing training:

ii) Imaginal Exposure: Step to Step imaginal exposure

1.5 EMOTION REGULATION SKILLS

Changing Emotional Responses

i) Check the Facts: Check out whether your emotional reactions fit the facts of the situation. Changing your beliefs and assumptions to fit the facts can help you change your emotional reactions to situations.

ii) Opposite Action: When your emotions do not fit the facts, or when acting on your emotions is not effective, acting opposite (all the way) will change your emotional reactions.

iii) Problem Solving: When the facts themselves are the problem, solving the problem will reduce the frequency of negative emotions.

SESSION SEVEN

Prolonged Exposure Procedure
In vivo exposure: Directly facing a feared object “in real life” situation or activity. It involves interaction with safe things that you have been avoiding. Initially it will be challenging and anxiety-producing but repeated exposure will reduce emotional distress and promote new learning. Learn that the situations are not excessively dangerous or the same as the traumatic event.

Practice Exercise:
Repeatedly, face the trauma-related (stressful) situations that you’ve been avoiding.

In vivo exposure practice
- Make a list of the things you have been avoiding
- Write an ordered list of things to practice outside the session
- Rate the level of distress during the activity.
- Self-talk: The anxiety will not harm me, will not last forever, it does not control me or limit my activity.

Reducing Vulnerability to Emotion Mind-
Accumulate Positive Emotions
Accumulate positive emotions in the short term by doing these things.
- Do pleasant things that are possible now,
- Be Mindful of Positive Experiences,
- Build Positive Experiences Now,
- Be Unmindful of Worries

Accumulate positive emotions in the long term to build a “life worth living.”

Long Term: Make changes in your life so that positive events will happen more often in the future. Build a “life worth living.”
SESSION EIGHT

In vivo Exposure or in-person Exposure

Practice Exercise:
- Refer to the list you wrote on things you have been avoiding
- Note the things you practiced and your experience.
- Move from the easier things to harder ones
- Rate the level of distress during the activity.
- Positive Self-talk (say to yourself)

Reducing Vulnerability to Emotion Mind-

Skills for building a life worth living. To remember these skills use the term;

“ABC PLEASE”.

| A | Accumulate positive emotions in the short and long term |
| B | Build Mastery: Do things that make you feel competent and effective to combat helplessness and hopelessness. |
| C | Cope Ahead of Time with Emotional Situations |
| P | Physical, |
| L | iLLness to be treated |
| E | Eating balanced diet |
| A | Avoid mood-Altering substances, |
| S | Sleep to be balanced |
| E | Get Exercise. |

SESSION NINE

1.6 INTERPERSONAL EFFECTIVENESS SKILLS

Goals of Interpersonal Effectiveness

Be Skillful in Getting What You Want and Need from Others
- Get others to do things you would like them to do.
- Get others to take your opinions seriously.
- Say no to unwanted requests effectively.

Build Relationships and End Destructive Ones
- Strengthen current relationships.
- Don’t let hurts and problems build up.
- Use relationship skills to head off problems.
- Repair relationships when needed.
- Resolve conflicts before they get overwhelming.
- Find and build new relationships.
- End hopeless relationships.

Walk the Middle Path
- Create and maintain balance in relationships.
- Balance acceptance and change in relationships.

Factors in the Way of Interpersonal Effectiveness
- You Don’t Have the Interpersonal Skills You Need
- You Don’t Know What You Want
- Your Emotions Are Getting in the Way
- You Forget Your Long-Term Goals for Short-Term Goals
- Other People Are Getting in Your Way
- Your Thoughts and Beliefs Are Getting in the Way

Obtaining Objectives Skillfully
i) Clarifying Priorities: How important is: Getting what you want/obtaining your goal? Keeping the relationship? Maintaining your self-respect?
ii) Objectives Effectiveness: DEAR MAN. Be effective in asserting your rights and wishes.
iii) Relationship Effectiveness: GIVE. Act in such a way that you maintain positive relationships and that others feel good about themselves and about you.

iv) Self-Respect Effectiveness: FAST. Act in such a way that you keep your self-respect.

- Factors to Consider

Decide how firm or intense you want to be in asking for something or saying no.

- Trouble shooting Interpersonal effectiveness skills

**SESSION TEN**

Guidelines for Objectives Effectiveness:

Getting What You Want (DEAR MAN)

A way to remember these skills is to remember the term DEAR MAN:

<table>
<thead>
<tr>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Describe</strong></td>
<td>Describe the current situation (if necessary). Stick to the facts.</td>
</tr>
<tr>
<td></td>
<td>Tell the person exactly what you are reacting to.</td>
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<tr>
<td></td>
<td>Express your feelings and opinions about the situation.</td>
</tr>
<tr>
<td><strong>Express</strong></td>
<td>Don’t assume that the other person knows how you feel.</td>
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<tr>
<td></td>
<td>Assert yourself by asking for what you want or saying no clearly.</td>
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<tr>
<td><strong>Assert</strong></td>
<td>Do not assume that others will figure out what you want.</td>
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<tr>
<td></td>
<td>Reinforce (reward) the person ahead of time (so to speak) by explaining positive effects of getting what you want or need.</td>
</tr>
<tr>
<td><strong>Reinforce</strong></td>
<td>Keep your focus on your goals.</td>
</tr>
<tr>
<td></td>
<td>Maintain your position. Don’t be distracted. Don’t get off the topic.</td>
</tr>
<tr>
<td><strong>(Stay) Mindful</strong></td>
<td>Appear effective and competent. Use a confident voice tone and physical manner; make good eye contact.</td>
</tr>
<tr>
<td><strong>Appear Confident</strong></td>
<td>Be willing to give to get. Offer and ask for other solutions. Reduce your request. Say no, but offer to do something else</td>
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Practice DEAR MAN Skills

**SESSION ELEVEN**

Guidelines for Relationship Effectiveness:

Keeping the Relationship (GIVE)
(Be) Gentle; No attacks, No threats, No judging, No sneering
(Act)
Interested: Listened and appear interested in the other person. Listen to the other person’s point of view.
Validate: With words and actions, show that you understand the other person’s feelings and thoughts about the situation.
(Use an) Easy manner Use a little humor. Smile. Ease the person along

Guidelines for Self-Respect Effectiveness:

Keeping Respect for Yourself (FAST)

| (Be) Fair | Be fair to yourself and to the other person. Validate your own feelings and wishes, as well as the other person’s. |
| (No) Apologies | Don’t over apologize. No apologizing for being alive or for making a request at all. No apologies for having an opinion for disagreeing. |
| Stick to Values | Don’t sell out your values or integrity. Be clear on what you believe is the moral or valued way of thinking and acting, and stick to it. |
| (Be) Truthful | Don’t lie. Don’t act helpless when you are not. Don’t exaggerate or make up excuses. |

Evaluating Options for Whether or How Intensely to Ask for Something or Say No

Before asking for something or saying no to a request, you have to decide how intensely you want to hold your ground. Options range from very low intensity, where you are very flexible and accept the situation as it is, to very high intensity, where you try every skill you know to change the situation and get what you want.

Factors to Consider

When deciding how firm or intense you want to be in asking or saying no, think about:

- The other person’s or your own capability.
- Your priorities.
- The effect of your actions on your self-respect.
- Your or the other’s moral and legal rights in the situation.
- Your authority over the person (or his or hers over you).
- The type of relationship you have with the person.
- The effect of your action on long- versus short-term goals.
- The degree of give and take in your relationship.
- Whether you have done your homework to prepare.
- The timing of your request or refusal.

**Building Relationships and Ending Destructive Ones**

i) Finding and Getting People to Like You: Proximity, similarity, conversation skills, expressing liking, and joining groups

ii) Mindfulness of Others: Building closeness through mindfulness of others


**SESSION TWELVE**

Troubleshooting: When what you are doing isn’t working
- values and Priorities list
- validating Others
- Self- validation and Self- respect

**RECARP THE MAIN SKILLS IN:**

i) Mindfulness
ii) Distress Tolerance

iii) Emotional regulation & Prolonged exposure

iv) Interpersonal Effectiveness

➢ Therapy termination

APPENDIX L: Plagiarism Report
# Effectiveness of Dialectical Behavior and Prolonged Exposure Therapy

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