UNIVERSITY OF CAPE COAST

SUICIDAL IDEATION AMONG IN-SCHOOL ADOLESCENTS IN GHANA

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BY

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DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature:..... Date:.....

Name: Abigail Amoah

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature:..... Date:.....

Name: Prof. Eugene K.M. Darteh

Co-Supervisor's Signature: ..... Date:.....

Name: Mr. Kweku Kissah-Korsah

ABSTRACT

Studies have established that suicidal ideation is associated with risk of suicide attempt or suicide. Thus understanding more about Suicidal ideation may have implications for prevention. The study was a descriptive cross-sectional survey which utilized secondary data from the most recent Global School Health Survey (GSHS) conducted in 2012. Both Bivariate and Multivariate analyses were done to examine the associations between demographic and psychosocial factors and suicidal ideation. The results revealed that Sex; Bullying, Substance Use and Depression were major factors that influence suicidal ideation among in-school adolescents in Ghana. It was also found that there was a significant association between sex and suicidal ideation. The study recommends that the Ghana Health Service, Ghana Education Service and other agencies responsible for the welfare of young people intensify education on the avoidance of suicide among young people. The Ghana Education Service should also formulate policies to ensure that bullying is curbed in schools to help reduce suicidal ideation. They should ensure that schools organize guidance programmes for their students on drug abuse and depression. This can help students adopt behaviours that can help reduce suicidal ideation.

KEYWORDS

Suicidal Ideation

Suicide

In–school

Adolescents

Ghana

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DEDICATION

To my parents Mr and Mrs Amoah.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

CDC	Centers for Disease Control and Prevention
GHS	Ghana Health Service
GSS	Ghana Statistical Service
LAMIC	Low and Middle Income Countries
MoH	Ministry of Health
NCIPC	National Centre for Injury Prevention and Control
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World health organization
YRBSS	Youth Risk Behavior Surveillance System

CHAPTER ONE

INTRODUCTION

Background to Study

The term 'suicidal ideation' refers to thoughts that life isn't worth living, ranging in intensity from fleeting thoughts through to concrete, well thought out plans for killing oneself, or a complete preoccupation with self-destruction. Nock, Borges , Bromet Cha, Kessler & Lee, (2008) Suicidal ideation is a public health problem that has been identified among adolescents especially and adults as well (WHO, 2014a, & Zur, 2016). The issue of suicidal ideation has become an increasingly important health concern over the past decade (Lamis, 2006). Differences however exist in the prevalence and epidemiological pattern of suicide committed by children, adolescents, and adults across sex, race, countries, and cultures in the world (Ayyash-Abdo, 2002 & Osafo, 2012). Suicidal ideation is however of particular importance because it usually preludes actual suicide among adolescents (Cash & Bridge, 2009; Spirito & Esposito-Smythers, 2006).

The challenges of suicidal ideation during adolescence is critical because there are more than one billion young people within the ages of 10 and 19 year in the world with 70% of them living in developing nations (United Nations Population Fund (UNFPA), 2008). Such people represent the future of society. Since, adolescence is a development period within the life span when significant physical, cognitive, and socio-emotional changes occur (Quarshie, Osafo, Akotia, & Peprah, 2015), any challenge that occurs can destruct their entire future.

Globally, it is estimated that each year about 3,000, 000 adolescents have suicidal ideation and out of that number, about 71,000 carry through their ideation and die as a result of suicide, making it the third major cause of death among adolescents(WHO, 2014). Those who survive the attempt to take their own lives often end up injuring themselves which require medical attention (Dunlavy, Aquah, & Wilson, 2015). In some cases, these injuries leave behind disfiguring, trauma, short or long term disability (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002)as well as lasting psychosocial sequel which can impact families and the extended social networks of the adolescent (Peden, 2008).

In Ghana, it has been observed that close to half (47%) of University students know someone who has had suicidal ideation and one in five knows someone who has killed himself/herself (Hjelmeland, Akotia, Owens, Knizek, Nordvik, Schroeder, & Kinyanda, 2008). In addition, analysis of police-recorded data showed that (9.1%) of all fatal and non-fatal suicides recorded between 2006 and 2008 involved adolescents between 10 and 19 years (Adinkrah, 2011). In support of this, anecdotal statistics by the Network for Anti-Suicide and Crisis Prevention has revealed that 531 young people within the ages of 9 and 19 commit suicides annually in Ghana (Kokutse, 2012).

In spite of these individual studies and researches, there are no official statistics on adolescent suicide and suicidal ideation in Ghana. However Ghana's 2010 population and housing census report (GSS, 2013) showed that 6,467 deaths were recorded among young person's within the age range of 12–19 years, representing 35% of all deaths categorized under deaths by accident, violence, homicide, or suicide (12 to 34 years) within 12 months preceding the

census. The report indicates lack of official data on suicidal ideation as well as suicide in Ghana (Eshun, 2003; Knizek, Akotia, & Hjelmeland, 2011). The lack of official data on suicidal ideation in Ghana can be attributed to the fact that attempting suicide in the country is a punishable offense (Adinkrah, 2012), and so hospitals may even refrain from registering cases (WHO, 2002), making hospital-based surveillance poorly suited to inform the evidence base.

It has been argued that statistics available is just the tip of the iceberg because "the fear of social stigma could restrain families and other people from reporting a person who has made an outburst of suicide or attempted suicide to the police as well as giving a true verdict of the cause of death" (Osafo, Hjelmeland, Akotia, & Knizek, 2011a, p. 1). All these facts point out that adolescent suicidal ideation has become a major challenge in Ghana (Osofo et al., 2011).

Suicidal ideation among adolescents is associated with several psychosocial indicators for well-being such as depression (Cash & Bridge, 2009), loneliness (Rudatsikira, Muula, Siziya, & Twa-Twa, 2007), anxiety (Cash & Bridge, 2009), substance use (Cash & Bridge, 2009), poverty (Burrows & Laflamme, 2008), bullying (Owusu, Hart, Oliver, & Kang, 2011) and poor relationship quality with parents (Bridge, Goldstein, & Brent, 2006). Others are difficulty of social integration, lack of peer support, childhood abuse/neglect, and peer victimization (King & Merchant, 2008). Similarly, psychological and socio-economic factors have been found to influence adolescent suicidal ideation in Ghana (Quarshie, Osafo, Akotia, &Peprah, 2015). Thus, in general, psychiatric, biological, social and environmental factors related to an individual's life history are risk factors for suicidal

ideation (Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002). In the Ghanaian context, suicidal ideation, among adolescents in senior high schools has been found to be related to bullying (Kwaku, Nuworzakugbey, Joseph, Emmanuel & Jacob, 2017).

Gender has also been identified as the suicidal ideation tendency among adolescents. For instance, a study of suicide in street children and adolescents in Ghana showed difference between the proportion of females reporting suicidal ideation and their males counterparts with the females having more suicidal ideation as compared to males (Asante & Andoh 2015). However males are more likely to perform the action related to suicide, experiencing a phenomenon called gender paradox (Langhinrichsen, 2009).

Dunlavy, Aquah, and Wilson (2015) have argued that suicidal ideation remains an understudied risk factor for suicidal intent. This is in spite of the fact that suicidal ideation and suicide continues to be a challenge to society (Eshun, 2003). Considering the linkage between psychological issues and suicidal ideation along with the incidence of psychological distress, depression, and anxiety disorders among students in Ghana (Oppong & Andoh-Arthur, 2014), this study sought to investigate suicidal ideation among in-school adolescents in Ghana.

Statement of the Problem

Worldwide, suicidal ideation is a leading cause of suicide making suicide one of the major causes of death among the economically productive age group (15-44 years), and the second leading cause of death in the 15-19 years age group (Patton et al., 2009). Suicidal ideation is a predictor of suicide in both the general population as well as among adolescents (WHO, 2011).

Psychological autopsy studies show that most suicides occur on the first attempt (Cavanagh, Carson, Sharpe, & Lawrie, 2003), highlighting the importance of identifying precursors to suicidal behaviour (such as suicidal ideation) to inform suicide prevention efforts. Studies have demonstrated that several factors (e.g., personal/intrapersonal, interpersonal and environmental) are associated with adolescent suicidal ideation (Brent and Mann, 2006, Johnson et al., 2000, Portzky, Audenaert & Heeringen, 2005,). These studies have contributed to the development of interventions aimed at suicide prevention among young adults globally by focusing more on suicidal ideation. Data from the WHO mortality database indicate that 85% of the world's suicides occur in low and middle income countries (LAMIC) (Krug, et al., 2002) however little attention has been given to suicidal ideation which serves as a predictor of suicide. Also there is paucity of studies and lack of official statistics on adolescent suicidal ideation and suicide in Ghana. Mass media coverage of adolescent suicide (even though crude), at least, may reflect the reality of the phenomenon.

Police data recorded on suicide shows that 9.1 percent of all fatal and non-fatal suicide recorded between 2006 and 2008 involved adolescents. According to the children, adolescents, and young people in Ghana segment of the Ghana's 2010 population and housing census report (GSS, 2013), 6467 deaths were recorded among young persons within the age range of 12-19 years, representing 35% of all deaths categorized under deaths by accident, violence, homicide, or suicide among young persons (between the ages of 12 and 34 years) within 12 months preceding the census which serves as an example of the lack of official data on suicide in Ghana.

In spite of the grave potential consequences of suicidal ideation, adolescent's suicidal ideation remains a neglected public health priority globally (Sankey, 2005 & Lawrence, Liu et al., 2015, Dunlavy, Aquah, & Wilson, 2015). It is, therefore, not surprising that information on suicidal ideation as well as suicide, even if they exist, may be scanty, "in the African context" due to insufficient research work in the field (Adjaottor & Ahorsu, 2015).

Even though there are efforts to curtail suicide, there is no evidence of sustained reductions in suicidal ideation (WHO, 2014). This makes suicidal ideation a public health problem in most societies including Ghana. The researcher's investigation revealed that studies have been carried out on suicide in Ghana as a whole which includes that of Quarshie et al. (2015) on adolescent suicide in Ghana and suicide among the Physically Disabled Persons in Ghana by (Isaac, Ossom, & Lawer, 2016). However little attention has been given to suicidal ideation among in-school adolescents who are at higher risk when it comes to suicide and suicide attempts (Oppong & Meyer 2017, WHO, 2011a, 2014 & Kokutse, 2012). In the light of the threat of adolescent suicide coupled with the dearth of research on adolescent suicidal ideation in Ghana, this study seeks to examine suicidal ideation among in-school adolescents in the country.

Objectives of the Study

The main objective of this study is to investigate suicidal ideation among In-school adolescents in Ghana. Specifically, the study seeks to:

1. Assess the intention of in-school adolescents to attempt suicide,
2. Examine in-school adolescents' behavior towards suicide,

3. Examine the factors that influence suicidal ideation among in-school adolescents in Ghana.

Research questions

To help achieve the objective of the study, the following research questions have been posed:

- What are the intentions of in-school adolescents to attempt suicide?
- What is in-school adolescents' behavior towards suicide?
- What are the factors that influence suicidal ideation among in-school adolescents?

Hypothesis

H_0: There is no statistically significant association between demographic factors (Age and Sex) and suicidal ideation among in-school adolescents in Ghana.

H_0: There is no statistically significant association between psychosocial factors (alcohol use, substance use, bullying, and depression) and suicidal ideation among in-school adolescents in Ghana

Significance of the Study

The current study is of significance to stakeholders in the health and population sector. Specifically, the results will provide statistical data on suicidal ideation which will be significant to the Ministry of Health (MoH) as well as the Ghana Health Service (GHS). The data can be used in formulating policies that can be helpful for adolescents' in Ghana.

Again, the results of the study will be of significance to school authorities and teachers who have direct contact with in-school adolescents. They would be enlightened to know how to help adolescents manage any form of suicidal ideation. Further, the study is of significance to parents who are the primary caregivers of adolescents. They would be empowered with the knowledge on suicidal ideation to be able to take good care of their wards.

Finally, the results of the study will serve as a form of literature for future research. Students and other researchers will benefit from the findings in case they are carrying out similar studies.

Delimitation of the study

This study is delimited to issues of suicidal ideation among in-school adolescents in Ghana. Therefore, adolescents who are not in school are not included in the study. Again, the study covers the predictors of suicidal ideation, knowledge towards suicide, behaviour towards suicide and intention of in-school adolescents to attempt suicide.

Definition of terms

The key terms used in the study are explained as they are used in the context of the study. They include the following:

Adolescent: Adolescent is used in the current study to refer to individuals within the ages of 13 to 19 years.

In-school adolescent: In this study, refers to individuals within the ages of 13 to 19 years who are in school or are students.

Suicidal ideation: In this study, it refers to an individual's thoughts, plans and intents on committing suicide.

Organisation of the Study

Chapter one of this study deals with the introduction of the study. It covers the background to the study, statement of the problem, purpose of the study, research questions of the study and the significance of the study. It is also be concerned with the delimitation of the study, limitations of the study and the definition of terms as well the organisation of the study.

The Chapter Two will deal with the literature review of the study. The chapter will present the theoretical and conceptual framework for the study as well as the review of related empirical studies.

The third Chapter of the study will cover the research methods of the study. This chapter will describe the research design, the population, the sample and sampling procedures used as well as the instruments and procedures involved in the collection and analysis of data.

The data analysis and discussions of the results of the study will be reported in Chapter Four. Finally, the summary, conclusions and recommendations of the study will make up the fifth chapter of the study. Suggestions for further research will also be given in the Chapter five

CHAPTER TWO

LITERATURE REVIEW

Introduction

This chapter presents the literature review of the study. The chapter is presented according to this outline: Understanding suicidal ideation, the intention of in-school adolescents to attempt suicide, Suicidal behaviour among in-school adolescents, factors influencing suicidal ideation, Conceptual Framework, Theoretical Framework which include the interpersonal theory of suicide and The Three-Step Theory of Suicide

Understanding of Suicidal Ideation

Higher income countries experience higher percentage of suicidal ideation among females as compared to males but higher percentage of suicide among males than females (Värnik, 2012, WHO, 2017). With regard to age, suicidal ideation is highest in persons aged 70 years and above for both men and women in almost all regions of the world (David, 2012).In countries like Canada, United States and China suicidal ideation is high among the young people, according to (WHO, 2015) report on preventing suicide. Therefore this group of young people today is at higher risk for suicide (Centers for Disease Control and Prevention (CDC), 2012).Suicidal ideation is a factor that triggers Suicide among individuals and as a result it is the second leading cause of death among individuals aged among young people whose ages range between 10 to 18 with approximately seven of 100,000 adolescents aged 15–19 dying by suicide each year (Centers for Disease Control and Prevention (CDC), 2012). Thought about suicide has also been found among (24%) of a sample of

1,865 college students (Westefeld, Homaifar, Spotts, Furr, Range, & Werth, 2005).

Suicidal ideation has been defined as wishes, ideas, and the tendency towards committing suicide Ahmad, Cheong, Ibrahim, & Rosman, A. (2014). It is also known as thoughts that serve as a means to foster one's own death (Khan, Kolts, & Brown, 2003). At whatever stage in a person's life suicidal ideation occurs, suicide maybe the first step to consider and it may culminate in completed suicide (King & Merchant 2008). Ahmad, Cheong, Ibrahim, & Rosman, (2014) views suicidal ideation may begin from fleeting thoughts, to extensive thoughts, to detailed planning, role playing (e.g., standing on a chair with a noose), and incomplete attempts, which may be deliberately constructed to not complete or to be discovered, or may be fully intended to result in death, but the individual survives (e.g., in the case of a hanging in which the cord breaks). People who have suicidal thoughts/ideation may not go on to make suicide attempts; however suicidal thoughts are considered a risk factor (Harris et al., 2015). Between 2008 and 2009, an estimated 8.3 million adults aged 18 and over in the United States, (3.7%) of the adult US population, reported having suicidal thoughts in the previous year. An estimated 2.2 million people in the US reported having made suicide plans in the year 2011(Crosby, Gofroerer, Han, Ortega, & Parks, 2011). Suicidal ideation is generally associated with depression and other mood disorders; however, it seems to have associations with many other mental disorders, life and family events, all of which may increase the risk of suicidal ideation.

Suicidal ideation may vary from thoughts about the worthlessness or hopelessness of life, death wishes to concrete suicide plans and an obsession with self-destruction. Thoughts, ideas, and the desire to commit suicide, are frequent behaviors among adolescents and characterized by personality disorder and are associated with the character of emotional blackmail (Abasse, Oliveira, Silva & Souza 2009). It is important to note that thoughts of committing suicide are often fleeting and characteristic of times during which a person experiences distress. With increased periods of distress, suicide ideation can increase in frequency and expand to become more elaborative (Ahmad, Cheong, Ibrahim, & Rosman2014). This includes not only thoughts of wanting to die or to kill oneself but also thoughts of what it would be like to kill oneself and how one would commit suicide (Paladino & Minton, 2008). One identified most important risk factor for suicidal ideation is suicide attempt (Uribe et al., 2013).One third of adolescents aged 12-20 years have reported suicidal ideation (Evans, Hawton, Rodham, & Deeks, 2005).

Behaviour to Attempt Suicide

Suicidal ideation often emerges in adolescence and is prevalent among this age group and particularly among females (Nock, Borges, Bromet, Cha, Kessler, & Lee 2008). Across 17 European countries, the lifetime prevalence of ideation among students aged 15–16 years ranged from (15%) (Armenia) to (31.5%) (Hungary), while the lifetime prevalence of suicide attempts ranged from 4.1 percent to 23.5 percent in the same two countries, respectively (Kokkevi et al, 2008). Across 49 low- and middle-income countries, (15.3%) of adolescents aged 13–15 years had seriously considered suicide in the past year (Page& West 2011). Given that suicide ideation strongly and

prospectively relates to suicide attempts and no attempts are made to avert it, it is necessary to initiate studies that can help in averting suicide when suicide ideation occurs (Scott, Pilkonis, Hipwell, Keenan, & Stepp, 2015).

Suicide attempt is where an individual makes the effort to commit suicide but is not able to do it does it but survives (O'connor, 2016). It may be referred to as a failed suicide or nonfatal suicide, but the latter terms are subject to debate among researchers (O'connor, 2016). Brendel, (2008) defines it as an intentional act of self-injury of which the outcome is not fatal such an act or acts vary from minor suicidal gestures to serious suicidal acts. Suicide attempts include parasuicide such as self-harm where there is no actual intention of killing oneself. It results in harm ranging from disability, injury or death (Nock et al., 2008).Although this offers a partial understanding; suicidal behavior is a complex phenomenon. It is a process that develops over time across various environmental, social and individual risk factors (Mościcki, 2001). In the U.S., the NIMH reports there are 11 nonfatal suicide attempts for every suicide death (CDC, 2016). Suicidal ideation, suicidal threats, and suicide attempts among children and adolescents are more common than the completed act. The ratio of attempted suicide to completed suicide has been estimated at from 50:1 to 120:1 (CDC, 2014). The American Association of Suicidology reports higher numbers, stating that there are 25 suicide attempts for every suicide completion and by these numbers, approximately 92-95 percent of suicide attempts end in survival (American Association of Suicidology, 2009).

A history of suicide attempts is considered one of the most robust predictors of eventually completed suicide (CDC, 2013, Brendel, 2008) Some

institutions, such as the Centers for Disease Control and Prevention's (CDC) National Center for Injury Prevention and Control (NCIPC) and departments of justice (in some countries), keep records of non-fatal events (CDC, 2015).According to these records, suicidal attempts are more prevalent in younger persons and among females (CDC, 2015). Over half of those who attempted suicide tried more than once, with almost 20 percent of those trying for the second time doing so less than a year than the first attempt. Estimation of youth suicide attempt for the year 2008 indicates that 19.8 to 24.0 percent of youth have experienced suicidal ideation, and 3.1 to 8.8 percent has attempted suicide in their lifetime (Nock et al. 2008). The study of youth aged 15 to 19 years, in 2011 (Youth Risk Behavior Survey), estimated that 15.8 percent of youth seriously contemplated suicide, and 7.8 percent made at least one attempt in the previous year (CDC National Center for Injury Prevention and Control (NCIPC), 2012).

In the United States, results from the 2003 Youth Risk Behavior Surveillance System (YRBSS), which uses a school-based self-administered survey, indicated that about 9 percent of students between 9th and 12th grade self-reported having attempted suicide, at least, once during the previous year. Between 1996 and 2000, two thirds of all suicide attempts in China were among those aged 15-34 (Phillips, 2004). In the United State of America, between 3-9 percent of adolescents students attempt suicide each year (Borowsky, 2001, Grunbaum et al, 2004, National Center for Health Statistics, 2004).

Also, Rates of suicidal ideation and attempt vary according to gender and race/ethnicity. Adolescent females have higher rates of suicidal ideation and attempts than males but males record high rate of repeated suicide attempt (Beautrais 2002; D'Eramo et al. 2004;CDC NCIPC 2012 & McLoughlin, & Malone, 2015).The ratio of suicide completion for males to females has been estimated to be in the range of 3:1 to 7.5:1 (Nock et al., 2008). This gender paradox may be explained by males using more lethal methods for suicide completion (particularly firearms), consuming more alcohol, displaying greater aggressive and impulsive behavior, and externalizing violent behaviors (McLoughlin, Gould, & Malone, 2015).

However, according to Arensman, & Fitzgerald (2011) their study in Ireland has found out that the rate of self-harm repetition in men is more than in women. In these studies the risk of repetition was highest in the first three months after the index episode, with half the repetition events occurring in that timeframe.

Early risk factor research established a previous suicide attempt as a risk factor for later suicide and in studies; this has been the strongest predictor of suicide (Johnston, Pirkis, & Burgess, 2009). Joiner, Conwell, Fitzpatrick, Witte, Schmidt, Berlim, & Rudd, (2005) found, across a series of studies, that the association between past suicidal behaviour and current suicidality persisted even after controlling for covariates including demographic factors, hopelessness and a range of psychiatric symptoms.

In a systematic review of research since 1970, (Owens, Horrocks, & House, 2002) found the median rate of repetition following a hospital-treated episode of non-fatal self-harm was approximately 15 to 16 percent during the

first year, rising to 20 to 25 percent over the longer term. Almost two percent had died by suicide by the one-year follow-up, rising to 5-7 percent after approximately nine years. Joiner (2002) has argued that a suicide attempt effectively opens a gateway to further suicidality. In this view a suicide attempt is a kind of rehearsal, a way of 'working up to the act' (Joiner, 2005, p.47). It reduces the fear, and the sense of danger and alarm, that is otherwise associated with self-injury and usually likely to prevent it. According to Joiner a suicide attempt also enables the person to learn more about how to do it. He argued that the ability to enact lethal self-injury is acquired, through mental or physical rehearsal. This means that after a person has made one suicide attempt, he or she has increased capacity to make another but will do so only if the desire to suicide and the painful states that underlie such a desire are also present.

It has further been argued that the theory of acquired capability is consistent with, and at least partially explains, the epidemiological findings that a suicide attempt is associated with elevated risk for further attempt or suicide (Joiner, 2002; 2005). According to this view, the reason that many people who make one suicide attempt do not make another is because the desire for suicide is no longer present even though the capability is retained. The possible effects of a suicide attempt as outlined concern a change within the person's inner life or mental state. Another possibility is that a suicide attempt may result in a change to external life circumstances, which in turn may make a further attempt or subsequent suicide either more or less likely. In Joiner's (2005) terms the external change may impact on desire for suicide. This could occur, for example, where a suicide attempt somehow results in

removal or escape from entrapment within a toxic and/or violent relationship or family. More generally, a first suicide attempt may result in a first offer of psychotherapy or other psychiatric treatment, which may over time lead to significant change

Intention of In-School Adolescents to Attempt Suicide

According to O'Connell's, (2004) there are stages individuals go through before complete suicide occurs. These stages start from feelings of hopelessness and despair, thoughts that life is not worth living, passive wish to die, suicidal ideation, suicide plan, suicide attempt and the final stage which is completed suicide. The significance of suicidal risk varies from less severe (thoughts of death) to highest severity (suicidal ideation with plan or recent suicidal attempt) (O'connor, 2016). Suicide plan involves people thinking about the method that they would use to commit suicide and there are gender, age and cultural disparities in the methods used by each individual (O'Connell's, 2004, Schulberg et al., 2005, Freitas et al., 2008 & Huisma & Robinson, 2010).

Suicide methods tend to be divided into two main categories namely violent and nonviolent (Sun, 2014). Use of a firearm or explosives, hanging, cutting and piercing with sharp object, jumping from high levels, and getting run over by a train or other vehicle are categorized as violent methods. Ingestion of pesticides, poisoning by gases, suffocation, and overdose of medicines are categorized as nonviolent methods. Studies have reported that hanging is the most prevalent suicide method in Europe among both males and females (Gunnell & Ashby, 2005 & National Crime Records Bureau. 2008, Värnik et al 2008, Viaz'min, 2004, Stenbacka & Jokinen 2015).The ligature

mark and its characteristics is the most relevant feature of hanging at autopsy, even in instances where the ligature material is not available during autopsy. The incidence of hanging as a method of suicide is found to be on the rise in developed countries such as the United States of America and the United Kingdom (National institute of mental health, 2011, National Suicide Prevention Strategy for England, 2002, Brock & Griffiths2003).

Researchers have suggested that people make plans about the method they would use base on the things they have ready access. Firearms are readily available in many households and remain the most common method of suicide in the United States of America (Conwel et al. 2002). Kaplan and Celing reported that the percentage of American households with firearms ranges from 38.6 percentage in New England to 70 percent in East South Central and concluded that firearm availability, especially, in the home is a strong predictor of suicide and suicidal plan in the United States of America (Lester, 2000 & Conwel et al. 2002). Some observers argue that women are more concerned with appearance than men and therefore, they are less apt to use firearms in committing suicide and in situations where women use firearms, they are less inclined to shoot themselves in the head for fear of disfigurement (lester 2000). According to Conwel et al. (2002) menare more likely than women to use firearms, but since a considerable number of women also used firearms doubt remains on these arguments. Ownership makes firearms relatively difficult to obtain. This non-availability explains the low popularity of firearms as a method of suicide in Ghana when compared to the western world. Similarly non-availability and accessibility to high rise buildings in the region may be the cause of less number of suicides by the method of jumping

from heights, supporting the theory of availability and accessibility. Although self-immolation is a painful method that results in disability, disfigurement, and delayed death, it continues to be a preferred plan among females (National Crime Records Bureau. 2008, Värnik et al 2008, Viaz'min, 2004, Stenbacka, 2015). Similar observations are made in a study in Iran where women are found to be at a greater risk of suicidal behavior by burns than men (Lari et al., 2007).

Cultural attitudes toward death may influence the plan to attempt suicide. The way society's honored the dead determines the plan that individual chooses when they want to commit suicide. Assessing the link between choice of violent methods of suicide and race from the standpoint of differential socio-acceptability and differential availability, the study indicated that African-Americans are more likely than Caucasians to choose violent methods of suicide although they are less likely to own firearms (Stack & Wasserman, 2005). Intentional carbon monoxide poisoning by burning charcoal in a confined space, a relatively newer and popular method of suicide in Hong Kong is another example of cultural acceptability. Some survivors who had attempted suicide by charcoal burning in interviews with researchers indicated that they chose this method because it was easy and painless (Chung, 2001). Most popularly held theories explaining the gender differences in choice of suicide methods, are those related to lethality and violent nature of suicide method. Although often used simultaneously, these two terms differ from each other. A violent method may not necessarily be lethal and a lethal method may not necessarily be a violent one. Suicide methods vary in lethality as measured by case fatality rate. Firearms, drowning, and hanging are the

most lethal methods while the less lethal methods include drug overdose poison ingestion and cutting/ piercing. Fatality of poison ingestion is dose dependent. A higher case fatality in suicidal poisoning is reported when compared to accidental poisoning confirming the relation between the dose and fatality (Unnikrishnan, 2005). Fatality also depends on choice of agent. In developed countries, this choice protects women from dying because the agents used for overdose are often over the counter medications, which tend to be less lethal. However, in rural areas or developing countries women often overdose on readily available lethal pesticides and thereby, convert what would be an impulsive nonfatal suicide attempt in the west to a completed suicide (Conner et al., 2005, Beautrais, 2006).

Some authors suggest that the "less effectiveness" of suicide attempts undertaken by women may be associated with the methods of these attempts. Suicide plan made by males more frequently required intensive care and involved a higher risk of death (Stefanello et al., 2008). Males are relatively more likely to plan to use hanging (as in the present study) and poisoning, while females preferred drowning and self-immolation as the methods of suicide (Huisman & Robinson 2010). The gender-related differences in suicide plan are also noted among patients with psychopathological conditions: male patients with psychotic or substance-related disorders preferred hanging, while female patients with similar conditions chose self-poisoning (Huisman, 2010). As mentioned, the availability of the means is one of the most important factors for suicidal plan.

In Africa the predominant methods for suicide are hanging, poisoning and stabbing and although rates varied considerably across studies, firearms are common method in some African countries (Hjelmeland & Knizek, 2010). In Cameroon, Egypt, Malawi, Nigeria and Uganda most poisoning deaths were attributable to pesticides (typically organophosphorous, organochlorine and rodenticides) with low rates of medication overdose (Hjelmeland & Knizek, 2010,Hjelmeland et al, 2008, Baker., Hu, Wilcox, & Baker, 2013, Patel, Ramasundarahettige, Vijayakumar, Thakur, Gajalakshmi, Gururaj, & Million Death Study Collaborators. 2012). In comparison, studies from Senegal and the United Republic of Tanzania report higher rates of medicine overdose (Tumram, Bardale, Dixit, & Deshmukh, 2012) whilst similar rates of medicine overdose and pesticide poisoning were found in South Africa (Vipul et al, 2015).

In Ghana there are numerous methods individuals use to commit suicide and these are firearms, hanging poisoning, Drowning, Jumping from heights and Drug overdose (Osafo, et al, 2015). However emerging evidence from the print and electronic media in Ghana have shown that hanging is becoming a common method of suicide especially among young people in Ghana (Quarshie, et al, 2015, Knizek et al., 2010, Stark et al., 2004). Accra physchiatric Hospital report, (2017) stated that Methods mostly employed include hanging, drug overdose, jumping from a height, stabbing, shooting one's self, setting one's self ablaze, starvation and etc.

Factors That Influence Suicidal Ideation among In-School Adolescents

Researchers and authors have come out with factors that influence suicidal ideation among in-school adolescents. Some of the factors identified

are depression, bullying, anxiety, hopelessness, substance use, family and relationships issues, aggressive/impulsive behaviours, physical and sexual abuse, stressful life events, alcohol use, substance use, age, sex, exposure to suicide, low self-esteem, family discord, financial problems, personality, aggression, poor academic achievement and performance, and poor peer relationships (Cukrowicz, Wingate, Driscoll, & Joiner, 2004;Gutierrez, Osman, Kopper, Barrios, & Bagge, 2000;Konick& Gutierrez, 2005; Smith et al.,2006;Spirito& Esposito-Smythers, 2005; Stephenson, Pena-Shaff, & Quirk, 2006; Wilburn & Smith, 2005).

Bullying and Suicidal Ideation

Bullying is a unique but complex form of interpersonal aggression, which takes many forms, serves different functions, and is manifested in different patterns of individual's life. Bullying is not simply a dyadic problem between a bully and a victim, but is recognized as a group phenomenon, occurring in a social context in which various factors serve to promote, maintain, or suppress such behavior (Olweus, 2001; Rodkin & Hodges, 2003; Salmivalli, 2004). Researchers have argued for the utility of a social-ecological framework in understanding school bullying (Espelage, Rao, & de la Rue, 2013; Espelage & Swearer, 2010; Hong & Garbarino, 2012; Swearer & Espelage, 2004; Sawyer et al., 2012). Social ecological theory (Bronfenbrenner, 1979) conceptualizes human development as a bi directional interaction between individuals and the multiple systems in which they operate which includes home, neighborhood, school, community, and society. Thus, bullying behavior is not just the result of individual characteristics, but is

influenced by multiple relationships with peers, families; teachers, neighbors, and interactions with societal influences (e.g., media, technology).

Youth can observe bullying (i.e., bystanders), experience bullying (i.e., victims), and perpetrate bullying (i.e., bullies) across different situations and/or over time. Attention has focused on the association between bullying and suicidal ideation in adolescent students. Three categories of bullying include perpetration, victimization, and both (victimization and perpetration). Previous studies have found that all 3 types of bullying were related to increased risk of suicidal ideation with the strongest risks in victim perpetrators (Wu et al., 2015).Randall et al. (2014) carried out a study on suicidal behaviour and related risk factors among school-aged youth in the Republic of Benin and found that bullying is a predictor of suicide ideation among adolescents. This has also been confirmed in other studies by (Nock et al., 2008& WHO, 2012; Wichstrøm, 2000, Wilson, Viswanathan, & Bovet, 2012). Similar results have come out of the studies by Hepburn et al. 2012, Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007, & Bhatta, Shakya, and Jefferis, 2014). The studies found that there is an association between bullying and suicidal ideation. A meta-analysis of 47 studies also showed that involvement in bully was associated with suicidal ideation, and the risk in victim-perpetrators was highest Holt, Garnett, & Hudson, J. (2015)

Contrary to what have being reported by other researchers Park et al. (2006) reported no association between bullying and suicidal ideation. They stated that the most important predictors of suicidal ideation for males as a result of the multivariate analysis were history of suicidal attempt, depression, hostility, smoking, alcohol abuse, communication with friends, and self-

esteem. The most important predictors of suicidal ideation for females as a result of the multivariate analysis however included hostility, sexual orientation, and self-esteem.

The use of corporal punishment and other forms of maltreatments (usually, misconstrued as helping to correct wrong behaviours) still characterize the parent adolescent interaction in Ghana (Ananga, 2011). Traditionally, in the parental role of raising children in Ghana, parents are expected to discipline their children and be firm in dealing with them (Gyekye, 2003). However, some parents unnecessarily resort to the use of some dehumanizing measures (such as flogging, starving, refusing to pay school fees, etc.) as means of disciplining their adolescent children. The use of dialogue and parent adolescent conference hardly characterizes the resolution of parent adolescent conflict in Ghana. Another revelation in the former narrative is that one of the reasons why the adolescent commit suicide is because of the fear of being punished (Akyeampong, 2009).Corporal punishment and other forms of inhumane treatments of students still exist in many basic and second cycle schools in Ghana (Agbenyega, 2006; Ananga, 2011; Lewin & Akyeampong, 2009). The mode of meting out these punishments in the schools can be psychologically disturbing and traumatizing for children and teens because the culprit is usually given the punishments in the presence of an entire class or school with peers and mates sometimes required to lampoon the culprit in the process. This is a situation which has the potential of making the punished adolescent develop a sense of shame and dishonor, a phenomenon which characterizes suicidal behaviour in Ghana (Adinkrah, 2013).

Alcohol use and Suicidal Ideation

One of the more compelling reasons is the relationship of alcohol dependence (and to a lesser degree, alcohol abuse) to suicide and suicidal ideation. Although alcohol consumption among adults has fallen in developed countries since 1980, it has risen in developing countries, countries of the former Soviet Union, and the UK and Ireland (OECD Health Data, 2005). Ireland, in particular, has seen consumption double since 1970 (OECD Health Data, 2005). The relationship between per capita alcohol consumption and suicide mortality is complex and varies internationally. Stack, (2000) 55 studies from 89 done, in 17 countries, showed that the greater the alcohol consumption, the greater the suicide rate. The strength of the association varied considerably, with a one liter per capita increase in consumption associated with an increase in suicide of 2.6% in France and 16% in Norway. Ramstedt, (2001) also found wide regional differences in Europe, with the suicide rate being more responsive to changes in alcohol consumption in low-consumption countries (i.e. Scandinavia) than medium or high-consumption (i.e. Mediterranean) countries.

Since the period of adolescence constitute part of the most productive and energetic times of an individual's life characterized by risky behaviours, the intake of alcohol and other drugs are also found at this stage of their lives. By the time they are seniors, almost 70 percent of high school students would have tried alcohol, half would have taken an illegal drug, nearly 40 percent would have smoked a cigarette, and more than 20 percent would have used a prescription drug for a non-medical purpose (Johnston et al., 2013). In the study of Roberto et al. (2014), it was found that exposure to alcohol

consumption and smoking was associated with suicidal ideation in both sexes. The consumption of alcohol and drug use by adolescents was directly associated with indicators of psychosocial stress such as feelings of loneliness, sleeping problems, feeling of sadness, and suicidal ideation (Malta et al. 2010)

The study of Schilling et al. (2009) examined alcohol consumption as "light" and "high" and the behaviours of "thinking" and "attempting" suicide. The study found a strong association between alcohol consumption and "thinking" and "attempting" suicide even among adolescents who were not classified within a risk group for the involvement of these variables. This indicates that there is risk associated with alcohol consumption and thinking and attempting suicide. Multivariate logistic regression analysis showed that females, with alcohol consumption and smoking are significantly associated with increased risk of suicidal ideation (Sharma, Nam, Kim, & Kim, 2015) and the outcome is the same as that of Jason et al. (2014) who also said that alcohol misuse causes suicidal ideation among adolescents. In addition, Lamis (2006) conducted a study to examine suicidal ideation and reasons for living in college students with varying levels of risk for alcohol related problems. The study found that suicide ideators were significantly more likely than non-ideators to be at risk for alcohol related problems.

Contrary to the researchers who agree that there is a link between alcohol use and suicidal ideation, other studies suggest otherwise. Among individual level studies, Moller et al., (2013) showed that a fairly large fraction (a third) of studies reported no statistically significant association between alcohol consumption and suicidal behavior such as suicidal ideation from surveys among school/university students. Other researchers suggest that

certain alcoholic beverage leads to suicide and that alcohol cannot generally be said as a predictor of suicide (Norström, Stickley, & Shibuya, 2012). Further, studies of alcohol use in the general population show that there is no clear distinction between alcohol use and chronic heavy drinking (Johnstone & Rossow 2009). This suggests that exposure is of a continuous rather than dichotomous nature which calls for studies that address a possible dose response relationship between alcohol consumption and suicidal ideation.

According to the World Health Organization's [WHO] global status report on alcohol and health (2014), worldwide alcohol per capita consumption [APC] for those over the age of 15 is 6.2 litres. .In Canada, the figure is 10.2. Per cent whiles Ghana is between 2.5-4.9 liters of pure alcohol every year for alcohol consumption, Ghana scored 78 points out of 100 while suicide scored 58 points, indicating that suicide rates are getting worst (WHO, 2014). According to (Amegah, 2015) alcohol intake in Ghana had increased between 2000 and 2015while suicide had increased significantly between 2000 and 2015. "Suicide rates have increased from 8.3 per 100,000 to 9.68 per 100,000 of the population that is 2,100 suicide deaths in 2000 to 2,450 suicide deaths in 2015.

Depression and Suicidal Ideation

Major life transitions like the ones graduates experience exiting school, or undergraduates experience entering college can actually be detrimental to mental health, making it more likely to develop or exacerbate mental illnesses (Potter et al., 2004). Leaving ones formed social and support groups when entering a new environment with different, often more extreme social and academic pressures, can increase depression in students (Potter et al.,

2004).Emory University (2015) suggests that there are specific risk factors for students related to suicide, such as academic pressures, decreased social and familial network/support, experience of new environments, and feelings of isolation and alienation.

Although mental health treatments have increased within the US, sufficient evidence that treatments have been effective in decreasing the prevalence of depression and other psychological distress is absent (Mojtabai&Jorm, 2015). Mojtabai & Jorm (2015) explains this confounding relationship between an increase in mental health treatment and no observable positive effects as an unfortunate miss matching of actual treatment care and individual need for treatment. College students appear to have an increased need for mental health care due to increased risk depression (Pompeo, 2014). Where screening has been involved in students' health care centers, increased identification and treatment of depression and suicidal ideation has been achieved (Klein, Ciotoli, and Chung, 2011).Depression plagues an increasing percentage of the population each year, with research projections predicting depression to be the second most prevalent disease burden in the world in the next six years (Ohayon et al., 2014).

Ohayon et al. (2014) support the argument that the rates of depression in young adults are increasing. There are strong correlational relationships between the increased risk factors college students experience and the increased rates of suicidal ideation and depression: these relationships are most likely due to stressful life events, but can also be influenced or caused by an individual being predisposed to development of depression (Ohayon et al., 2014).Currently, within the United States it is estimated that every 38 seconds

someone attempts suicide, and over 1,000 of these attempts result in completed suicides on college campuses every year as a result of depression (Emory University, 2015).

The study of Fur (2001) indicated that 53% of the sample population he studied stated that they experienced depression since beginning college, with 9% reporting that they had thought of considering suicide since beginning college. It has also been found that affective disorders, specifically a depressive episode, are common psychiatric diagnoses among people who have completed the act of suicide (Houston, Hawton, &Shepperd, 2001). In support of this, Kisch, Leino, and Silverman (2005) found that a depressed mood is a risk factor for suicidal behaviour in college students. In addition, some studies have reported a significant relationship between depression and suicide ideation among college students, where high levels of depression are associated with high levels of suicide ideation (Garlow, Rosenberg, Moore, Haas, Koestner, Hendin, & Nemeroff, 2008, Singh & Joshi, 2008). Findings from studies over the past three decades have consistently implicated depressive symptoms as a predictor of suicidal ideation and as an important risk factor associated with suicide among college student populations (Farabaugh, Bitran, Nyer, Holt, Pedrelli, Shyu, & Petersen, 2012 & Furr, Westefeld, McConnell, & Jenkins, 2001) Multiple regression analysis of various researchers which like that of Gibb, Andover & Beach (2006) and several others also confirm this argument (Singh & Joshi, 2008; Stephenson et al., 2006; Jason et al. 2014).

Substance use and Suicidal Ideation

Suicidality and problematic substance use often emerge in adolescence, making this developmental period an important target for efforts in prevention and intervention (Daniel, 2009). Studies have consistently shown a relationship between adolescent substance abuse and suicidal ideation (Kelly, et al, 2004, Hallfors, 2004 & Epstein, & Spirito, 2009). Further, the rate of alcohol abuse was seven and a half times higher and illicit drug abuse was nine times higher among adolescents who died by suicide compared to community controls (Esposito, 2004). Substance use is also evident among those who attempt suicide. For example, adolescents who presented to an emergency room following a suicide attempt and who reported substance use were approximately three times more likely to make another attempt compared to those who reported no substance use (Stewart 2001). Additionally, in some studies rates of alcohol and other substance use disorders are as high as 50% among those who attempted suicide and those who were having suicidal ideation (Esposito & Spirito 2004). This data makes it clear that identifying ways to prevent suicide and suicidal ideation among those with substance use issues is critical to addressing the overall public health issue of suicide. The disinhibition caused by certain substances, "marijuana and wee" can facilitate suicidal ideation and increase the risk that individuals will act on suicidal thoughts (Sher, 2006 & Groholt, & Haldorsen, 2006).

Almost half of adolescents who have attempted suicide reported were those who had engaged in substance abuse (Méan, et al., 2005 & Groholt, & Haldorsen, 2006). The link between suicidal thought and other more widely used substances, such as cannabis, is less established. However, in a

longitudinal study among 1,265 youth ages 14–21 years, regular cannabis use was associated with an increased risk of suicidal ideation. Additionally, a 13-year longitudinal study among more than 2,000 young adults observed a significant relationship between cannabis use at age 21 and suicidal ideation and attempts when assessed at age 27, even after controlling for many confounding factors. Specifically, young adults who reported using cannabis eleven times or more in the past year at age 21, were close to three times more likely to report suicidal ideation and a previous attempt at age 27 (Pedersen, 2009). Among young adult men, heavy consumption of cannabis (greater than 50 occasions) was associated with four-time greater likelihood of suicide compared to the general population (Conason, 2003).

However, the strength of the association between cannabis and suicidal risk is unclear, and a large cohort study of approximately 50,000 males initially assessed during 1969–1970 at ages of about 18–20 years for cannabis use did not observe a later increased risk for suicide and suicidal ideation (up to the year 2003) once confounding factors were taken into account (Prince, 2009).

Sex and Suicidal Ideation

Men are three times more likely to die by suicide than women (NCI, 2013; 2006). Evidence highlights differences in the suicidal behaviour of women and men, with more men dying through suicide and more women having risk of suicidal ideation and engaging in self-harm (Payne, Swami, & Stanistreet, 2008, Schrijvers, Bollen, & Sabbe, 2012).They may also seek psychiatric or other medical intervention more than men (Oliver et al, 2005). However, there has been a marked increase of self-harm by young men and a

corresponding reduction in women which has led to the female: male ratio for self-harm becoming more equal over time (Cantor, 2000; Kapur and Gask, 2006).

As mentioned previously, suicidal ideation vary between genders generally speaking, suicide attempts are more frequent among females, but rates of completed suicides are higher among males. Typical male suicidal ideators usually fall into the following categories: unemployed, never married and those living alone (Hawton, 2000).

Many male attempters also have alcohol problems or dependence (Vörös, & Fekete, 2004). Female attempters also tend to be repeaters, exhibiting multiple unsuccessful attempts, especially using the method of self-poisoning, mostly with drugs (Voros et al, 2004). Studies suggest that the more frequent acts of deliberate self-harm in females are more often based on non-suicidal motivation. In females, the appeal function of deliberate self-harm, whereby deliberate self-harm in used to communicate distress or to modify the behavior and reactions of other people seems more common; in males, deliberate self-harm is more often associated with greater suicidal intent (Hawton, 2000, De Hert & Peuskens, 2000; Murphy, 2000). Compare to male fatal suicidal behavior, female self-harm and non-fatal suicidal behaviours are often not taken seriously or trivialized as attention seeking (Canneto, 2009; Beautriais, 2006; Jaworski, 2005).

Study by (Joe et al., 2008) indicates that One-third of women and 13% of men had previously had suicidal ideation or tried to commit suicide. This has also been confirmed in a study titled A mental health needs assessment of children found that high suicidal rate and suicide ideation among females

where Key informants perceived that youth displayed internalizing and externalizing symptoms and mental health-related functional impairment at home, school, work and in relationships with high percentage of these people being females (Agoub et al., 2006; Johnson et al., 2008,).

Despite the controversy of the differences between the rate of female and male suicide and suicidal ideation some other studies did not report any differences in the rate of suicide ideation among the two groups and some of these studies include that of (Dzamalala, 2006, Ikealumba, 2006 & Gureje, 2007) and they saw no significant difference between males and females suicidal ideation and suicide attempt. A study which compared adolescents who reported suicidal ideation (SI) and those who reported a plan to carry out a suicide attempt (SP) found out that 50 percent of those reporting (SP) were female(Dunlavy, Aquah, and Wilson, 2015).

Adjaottor and Ahorsu (2015) examined the views of Ghanaian and Western Foreign University students on attitudes toward suicide and it was revealed that although both groups had negative attitude towards suicide, Ghanaian individuals had significantly more females reporting the highest in relation to the intent to commit suicide.

Age and Suicidal Ideation

Adolescence is a period of multiple conflicts that results due to the developmental process, such as exploration and experimentation that needs adjustment to physical maturity, changing roles within families and with peers, and the emergence of a more independent lifestyle (Kim et al., 2015).Compared to adults, youth show higher stress levels and have fewer coping resources. The stressful process of differentiation and identity

consolidation can result in significant psychological distresses, which can later result in suicidal ideation *(*Harris *et al, 2015).* In 2011, middle-aged adults accounted for the largest proportion of suicides (56%) and from 1999-2010, the suicide rate among this group increased by nearly 30% (Sullivan, 2013 & CDC, 2013). Among adults aged 18-22 years in the United States, similar percentages of full-time college students and other adults in this age group had suicidal thoughts (8.0 and 8.7%, respectively) or made suicide plans (2.4 and 3.1%) (Substance Abuse and Mental Health Services Administration, (2013). Full-time college students aged 18-22 years are less likely to attempt suicide (0.9 vs. 1.9 percent) or receive medical attention as a result of a suicide attempt in the previous 12 months (0.3 vs. 0.7%) (Kann et al., 2013).

While in the UK, the highest rate is currently for males aged 40–44. (Statistical Bulletin,UK, 2016), according to the US Center for Disease Control and Prevention (CDC), suicidal thoughts and planning and actual suicide attempts are "significantly higher" in young adults (18–29) than in people over the age of 30 (CDC, 2015). Research in the United States has found that older teens (grade levels 9–12, ages 14–18) show a worrying fascination with suicide thus about one in six (17 percent) say they've considered suicide, one in seven (13.6 per cent) have made a suicide plan, and one in twelve (8 percent) have made an actual suicide attempt(CDC, 2015). These are relatively small numbers but still frighteningly high percentages. Only one in thirty or so (one person in every classroom) has actually injured, poisoned, or overdosed to the extent that they've needed medical attention (CDC, 2015).

In the Surgeon General's call to Action to Prevent Suicide,(1999) the rate of suicide among those 10–14 years of age was reported as having increased by 100% from 1980–1996, with a 14% increase for those ages 15–19. In this latter group, suicide was the fourth leading cause of death (DeMartino, 2003). Suicide is an epidemic as it is the third leading cause of death for teenagers 15–24 years old, and suicide ideation rates are increasing for children 14 years and younger (Nat Center Injury , 2016). The rate for suicidal ideation among children aged 10–14 was 1.6 per 100,000, for teenagers aged 15–19 was 9.7 per 100,000 (Surgeon General, 2016). Grunbaum et al., (2002) showed that almost 9% of high school students had attempted suicide at least once. In addition, 19% reported having seriously considered attempting suicide, with almost 15% of students having made a specific plan for how they would do it.

According to the children, adolescents, and young people in Ghana segment of the Ghana's 2010 Population and Housing Census Report (GSS, 2013), 6,467 deaths were recorded among young person's within the age range of 12–19 years, representing 35% of all deaths categorized under deaths by accident, violence, homicide, or suicide *a*mong young persons (between the ages of 12 and 34 years) within 12 months preceding the census.

Theoretical Framework

The study is founded on two main theories which are the Interpersonal Theory of Suicide and the Three Steps Theory.

The Interpersonal Theory of Suicide

This attempts to explain why individuals engage in suicidal behaviour and to identify individuals who are at risk. This theory was propounded by Thomas Joiner (2005). The interpersonal-psychological theory of suicidal behaviour proposes that an individual will not die by suicide unless she has both the desire to die by suicide and the ability to do so (Joiner, 2005). The theory attempts to answer two main questions. What is the desire for suicide, and what are its constituent parts? What is the ability to die by suicide and in whom and how does it develop?

In answer to the first question of who desires suicide, the theory asserts that when people hold two specific psychological states in their minds simultaneously, and when they do so for long enough, they develop the desire for death. The two psychological states are perceived burdensomeness and a sense of low belongingness or social alienation. In answer to the second question regarding capability for suicide, self-preservation is a powerful enough instinct that few can overcome it by force of will. The few have developed a fearlessness of pain, injury, and death, which, according to the theory, they acquire through a process of repeatedly experiencing painful and otherwise provocative events. These experiences often include previous self-injury, but can also include other experiences, such as repeated accidental injuries; numerous physical fights; and occupations like physician and front-line soldier in which exposure to pain and injury, either directly or vicariously, are common.

The three components of the theory are thwarted belongingness and perceived burdensomeness which produce the desire for suicide. However,

while the desire for suicide is necessary, it alone will not result in death by suicide. Rather, Joiner (2005) asserts that one must also have acquired capability which refers to the acquired ability to overcome one's natural fear of death.

Thwarted Belongingness

This talks about an individual's feelings of being accepted by others. This is confirmed in a study by Baumeister and Leary (1995) titled "The need to belong: Desire for interpersonal attachments as a fundamental human motivation". Baumeister and Leary noticed that feeling of being accepted by others is believed to be a fundamental need, something that is essential for an individual's psychological health and wellbeing. Increased social connectedness, more specifically, being married, having children, and having more friends are associated with a lower risk of suicidal behaviour. This thwarted belongingness therefore includes living alone, unmarried, few social supports especially from friends and family, lack of confidant, loneliness and social withdrawal.

Perceived Burdensomeness

This refers to the belief that one's existence burdens family, friends, and society. This view produces the idea that "my death will be worth more than my life to family, friends, society, etc" and that is exactly how Joiner (2009) describes it. Some empirical evidence of perceived burdensomeness includes suicide notes, psychological autopsy and non--lethal suicide attempt. According to Joiner (2005), the greater perceived burdensomeness the greater suicidal ideation.

Some past researchers have documented an association between higher level of perceived burdensomeness and suicidal ideation. DeCatanzaro (1995), for instance, found that perceived burdensomeness toward family was correlated with suicidal ideation among community participants and high-suicide-risk groups. Direct tests of the theory have been supportive as well. In two studies of suicide notes, Joiner et al. (2002) showed that raters detected more expressions of burdensomeness in the notes of people who had died by suicide compared to the notes of those who intended to die but survived. In a study of psychotherapy outpatients, Van Orden, Lynam, Hollar, and Joiner (2006) showed that a measure of perceived burdensomeness was a robust predictor of suicide attempt status and of current suicidal ideation.

Acquired Capability

While feelings of burdensomeness and low belongingness may persuade a desire for suicide, they are not sufficient to ensure that desire will lead to a suicide attempt. Indeed, in order for this to occur, the theory suggests a third element must be present: the acquired ability for lethal self-injury (American Psychological Association (APA), 2009). This aspect of the theory suggests that suicide entails a fight with self-preservation motives. Fear of death is a natural and powerful instinct. According to the theory, one's fear of death is weakened when one is exposed to physical pain or provocative life experiences as these experiences often lead to fearlessness and pain insensitivity. These experiences could include childhood trauma, witnessing a traumatic event, suffering from a severe illness, or engaging in self-harm behaviours (Joiner, 2005). These behaviours are thought to result in the

desensitization to painful stimuli and to increase one's ability to engage in suicidal behaviours.

I opted for this theory because number of risk factors have been linked to suicidal behavior, and there are theories of suicide that integrate these established risk factors, but few are capable of explaining all of the phenomena associated with suicidal behavior as the interpersonal theory of suicide does. Also this theory can be tested empirically. It is constructed in a way that allows for falsifiability. A systematic review of 66 studies using the interpersonal theory of suicide found that the effect of perceived burdensomeness on suicide ideation was the most tested and supported relationship (Van et al., 2010).

A survey study of a large population-based cohort provides support for the interpersonal theory in that the interaction between thwarted belongingness and perceived burdensomeness predicted suicidal ideation, and suicidal ideation and ability predicted plans to attempt suicide and actual attempts (Christensen et al., 2013). Since this study also deals with a large cohort it best fit for the study.

The Three-Step Theory (3ST)

The Three-Step Theory (3ST) is a new theory of suicide rooted in the "Ideation-to-Action" Framework. The theory was propounded by Klonsky and May (2014). The theory was follow-up on Joiner's Interpersonal theory of suicide. Klonsky and May (2014) argued that an "ideation-to-action" framework should guide suicide theory, research, and prevention. From this perspective, (a) the development of suicide ideation and (b) the progression

from ideation to suicide attempts are distinct processes with distinct explanations.

In Three-Step Theory (3ST), as the name suggests involves three main steps to suicide. First, the theory hypothesizes that suicide ideation results from the combination of pain (usually psychological pain) and hopelessness (Klonsky & May, 2015). Klonsky and May opined that different sources of pain can all lead to a decreased desire to live. These may include physical suffering (Ratcliffe, Enns, Belik, & Sareen, 2008), social isolation, burden someness and low belongingness (Joiner, 2005), defeat and entrapment (O'Connor, 2016), negative self-perceptions (Baumeister, 1990), and other aversive thoughts, emotions, sensations, and experiences. The first step toward suicidal ideation begins with pain, regardless of its source.

The second step toward potentially lethal suicidal behavior involves connectedness. Connectedness most often means connection to other people; however, in this theory, it is used more broadly to refer to one's attachment to a job, project, role, interest, or any sense of perceived purpose or meaning that keeps one invested in living (Klonsky & May, 2015).Connectedness matters, because even if someone feels pain and hopelessness and considers suicide, the suicidal ideation will remain moderate (e.g., "sometimes I think I might be better off dead") rather than strong (e.g., "I would kill myself if I had the chance") as long as one's connectedness to life is greater than one's pain. In this regard, connectedness is a key protective factor against escalating ideation among those experiencing both pain and hopelessness.

The Third step involves the progression from ideation to attempts. Once an individual has developed a desire to end his or her life, the next

question is whether the person will act on that desire and make an attempt. The key determinant is whether the individual has the capability to make a suicide attempt (Joiner, 2005). Joiner argues people are biologically and evolutionarily wired to avoid pain, injury, and death. It is therefore very difficult for people to attempt suicide, even in the presence of strong suicidal ideation. However, Klonsky & May (2015) expand on Joiner's notion of capability as covering dispositional, acquired, and practical contributors to the capacity to attempt suicide.

Dispositional refers to relevant variables that are driven largely by genetics, such as pain sensitivity (Young, Lariviere, & Belfer, 2012) or blood phobia (Czajkowski, Kendler, Tambs, Røysamb, & Reichborn-Kjennerud, 2011). Acquired refers to the habituation to experience associated with pain, injury, fear, and death can lead over time to higher capacity for a suicide attempt. Practical refers to concrete factors that make a suicide attempt easier. There are many kinds of practical factors. For example, someone with both knowledge of and access to lethal means, such as a firearm, will be more able to act on suicidal thoughts than someone who lacks knowledge of and access to lethal means.

The theory suggests that suicide rates are elevated because these individuals have both extensive knowledge of how to end one's life painlessly and easy access to the necessary drugs (Klonsky & May, 2015). Therefore, summarizing, Klonsky and May (2015) opined that dispositional, acquired, and practical factors contribute to the capacity for attempted suicide, and an individual with strong suicidal ideation will only make a suicide attempt if and when they have the capacity to do so. This theory is relevant because it covers

the various steps that it will take for suicidal ideation to turn into a real suicidal attempt.

Conceptual Framework

The conceptual framework upon which the current study is based is Bronfenbrenner's Ecological Systems Model. Adolescent suicide has been found to be multicausal and emerging out of the interplay of biological, psychological, developmental, psychiatric, social, cultural, and family environmental forces at work in the transition period of adolescence (Borowsky, Ireland, & Resnick, 2001; Bridge, Goldstein, & Brent, 2006).This implies that a more robust and multidisciplinary model is required to establish a thorough understanding of adolescent suicide (Bridge et al., 2006). In this regard, it has been recommended that Bronfenbrenner ecological model (1977, 1979) can help understand suicide related factors (Ayyash-Abdo, 2002).

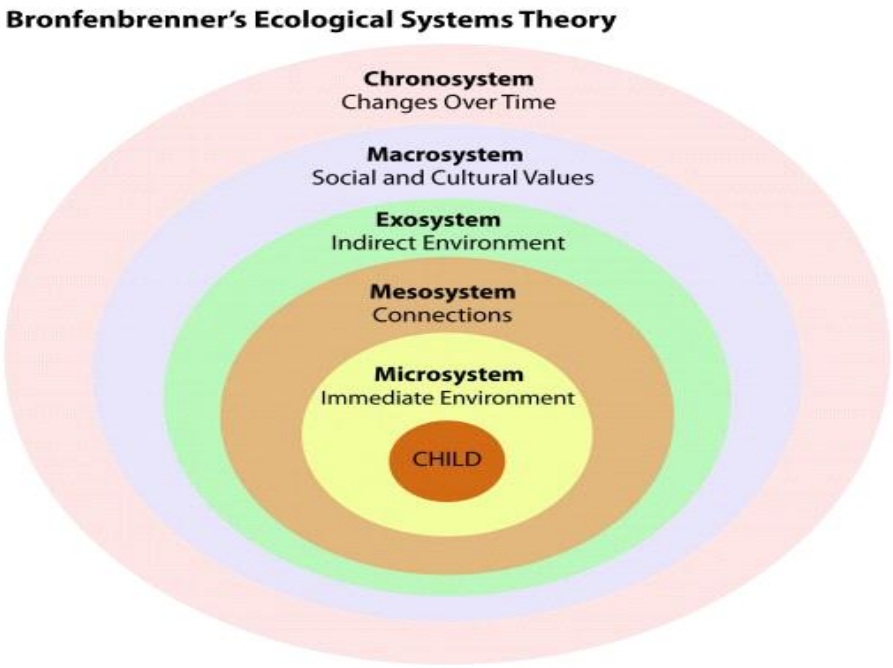

Figure 1: Ecological Systems Model

Source: Bronfenbrenner's (1979)

Bronfenbrenner's theory defines complex "layers" of environment, each having an effect on a child's development (Paquette & Ryan, 2008). Bronfenbrenner (1979) refers to the ecology of human development as involving "the progressive, mutual accommodation between an active, growing human being and the changing properties of the immediate settings in which the developing individual person lives" (p. 21). The environment is seen as series of nested structures, which include, but transcend, home, school, and the neighborhood settings within which developing individuals spend their daily lives (Quarshie et al., 2015). In this model, adolescent suicide is seen as emerging from the adolescent's interactions and interdependencies within the hierarchically arranged, multiple-level ecological contexts (Henry et al., 1993). The layers within the ecological model include the individual, microsystem, mesosystem, exosystem, macrosystem, and chronosystems, all in concentric circles (Bronfenbrenner & Morris, 2006). The issues at the individual level encompass the individual psychological and personal historical characteristics of the suicidal adolescent (e.g., depression and substance abuse).

Microsystem

This is the layer closest to the child and contains the structures with which the child has direct contact (Paquette & Ryan, 2008). The microsystem therefore encompasses the relationships and interactions a child has with her immediate surroundings (Berk, 2000). The structures in the microsystem include family, school or neighborhood. At this level, relationships have impact in two directions - both away from the adolescent and toward the adolescent. For instance, a child's parents may affect his beliefs and behavior;

however, the adolescent also affects the behaviour and beliefs of the parent. Bronfenbrenner calls these bi-directional influences, and he shows how they occur among all levels of environment (Paquette & Ryan, 2008). The interpersonal theory of suicide which talks about thwarted belongingness can been seen in this part of the framework. This is because at this stage the child has direct contact with the immediate surrounding and if there is less connection between the child and this immediate surrounding like family then the child is likely to contemplate suicide due to lack of support and other factors. This can also be seen in the three step theory of suicide where it has been indicated in the second step of the theory that connection is a factor that triggers suicide ideation and where there is high connection of the child to his/her immediate environment suicide ideation remain low.

Mesosystem

The layer of the mesosystem concerns the interactions among several microsystems within which adolescents shift among various roles as a result of moving between one microsystems to the other (Bronfenbrenner & Morris, 2006). This layer also provides the connection between the structures of the adolescent's micro system (Berk, 2000). For instance, the connection between the child's teacher and his or her parents or between his church and his neighborhood. This can be identified in the interpersonal theory of suicide which considers perceived burdensomeness as a factor that influences suicidal ideation among in-school adolescents' in Ghana. This is because when whatever the child does in school the parent gets to know as a result of the connections between the child's parent and his/her teachers then the child is likely to think that he/she is been a burden to the parent especially if whatever

information the parent get from the child's teacher are negative things about the child, the parent pressure on the child for him/her to leave a good life may make the child believe that he/she is becoming a burden and therefore is likely to contemplate suicide and vice versa.

Exosystem

The exosystem defines the larger social system in which the child does not function directly but impacts the adolescent's development by interacting with some structure in her microsystem (Berk, 2000). In other words, it is the social setting that indirectly affects adolescents when they interact with some structures in their microsystem (Quarshie et al., 2015). This implies that adolescents are not directly participating or involved in these social settings, but the process and experiences there affect their development. For instance, as parents' workplaces, their religious institutions, and health and welfare services in the community. The adolescent is not involved in the parent's place of work but events in the workplace of the parent can affect the relationship between the parent and the adolescent. This can be seen in the acquired capability of the interpersonal theory of suicide discussed above. This indicates that once fear of death increases when exposed to too much pain or provocative life experiences as these experiences could include trauma as a result of distance between the child and the parent due to longer hours spent at work place. The three step theory of suicide also talks about connection to people. When there is low connection between the child and the parent as a result of longer hours spent at work by the parent the child is likely to contemplate suicide.

Macrosystem

The macrosystem may be considered the outermost layer in the adolescent's environment comprising cultural values, customs, and laws (Berk, 2000). The priority this system gives to adolescents' needs affects the support they receive at inner levels of the environment (Berk, 2006). Thus, opportunity structures and life-course options for the child exist within this system (Muus, Velder, & Porton, 1996). For instance, if the culture in a particularly society does not encourage good parent and child interactions, children are likely to keep their feelings and challenges to themselves. This is a reflection of the interpersonal theory of suicide which talks about acquired capability that influences suicidal ideation. For example if a child's parent die, that child may develop psychological pain which according to the interpersonal theory of suicide when it happens the child can have suicidal ideation and also disconnection between the child and the parent can as well lead to that.

Chronosystem

The chronosystem covers the socio-historical conditions, transitions, and changes in individuals and their environment across time. Thus, it reflects the dynamic environmental transitions, encompassing entries, exits, milestones, and turning points over time in the life of the child (Bronfenbrenner & Morris, 2006). Elements within this system can be either external, such as the timing of a parent's death, or internal, such as the physiological changes that occur with the aging of a child. For instance, as children get older, they may react differently to environmental changes and may be more able to determine more how that change will influence them. As

children grow the psychological changes may at some point bring the feeling of hopelessness and this according to the first step in the three step theory of suicide can influence suicide ideation.

In summary, the ecological model appears to be a good fit for understanding of adolescent suicide because it is a framework that allows for the integration of the array of previous work on adolescent suicide and their families within a single model (Quarshie et al., 2015). Henry et al. (1993) also argued that, contrary to the traditional theories of adolescent suicide, the human ecological model being a multidisciplinary approach to understanding adolescent suicide integrates individual, family, and social system forces, which may be associated with adolescent suicidality within the broader environmental context. The model is again suitable for the study because it deviates from the tendency to concentrate solely on adolescent personal history (e.g., depression and hopelessness) and shows adolescent suicide as a consequence of an interaction among multiple factors (personal, interpersonal, and sociocultural), which are directly or indirectly connected to adolescents (Ayyash-Abdo, 2002).

Chapter Summary

This chapter reviewed literature related to the current study. The review covered issues relating to suicidal ideation, intentions to attempt suicide, suicidal behaviours, and factors influencing suicidal ideation among in-school adolescents. The conceptual framework upon which the study was based was Bronfenbrenner's Ecological Systems Model.

The study was based on two main theories. This included the Interpersonal theory of suicide and the three-step theory of suicide. The review however indicated that there was a dearth of local literature on adolescent suicidal ideation in Ghana.

CHAPTER THREE

RESEARCH METHODOLOGY

Introduction

This chapter discusses the research techniques and methods used in the study. It focuses on the following: data source, research design, and acquisition of data sampling design, target population, sample size, definition and description of variables, data analysis and limitations of the data.

Research Design

The research design employed for this study is a descriptive cross sectional survey. The philosophy underpinning this study is positivism. This method of research deals with obtaining quantifiable information systematically and presenting it in a numerical form and analyzing it statistically (Given, 2008).

Study Area

Ghana is a sub-Saharan African country. Ghana has a warm climatic condition because it is a few kilometers away from the equator on the north. It lies between latitudes 4°45'N and 11°N, and longitudes 1°15'E and 3°15'W. It is geographically note as closer to the center of the earth. Ghana is noted by the combination of grassland, shrub lands and forest. Lakes, hills, rivers waterfalls and plains also characterize it. Ghana, officially called the Republic of Ghana, is an independent state. It is situated on the Atlantic Ocean towards the west side of Africa. Ghana consists of ten defensive regions, including many islands. Its west border is delineated by the Ivory Coast, while to its north lies Burkina Faso. East of Ghana lies Togo, while the south is bordered

by the Atlantic and the Gulf of Guinea. In 2018, Ghana has an estimated population of 29.46 million (World Population Prospects, 2017), which ranks 48th in the world. The capital and largest city of Ghana is Accra, which has an urban population of 2.27 million.

In Ghana, most health care is provided by the government and is largely administered by the Ministry of Health and Ghana Health Services. The healthcare system has five levels of providers: health posts, health centers and clinics, district hospitals, regional hospitals and tertiary hospitals. Health posts are the first level of primary care for rural areas. These programs were funded by the government of Ghana, financial credits, Internally Generated Fund (IGF), and Donors-pooled Health Fund (Canagarajah, 2001). Hospitals and clinics run by Christian Health Association of Ghana also provide healthcare services.

Health care is very variable through Ghana. Urban centers are well served, and contain most hospitals, clinics, and pharmacies in the country. Rural areas often have no modern health care. Patients in these areas either rely on traditional African medicine, or travel distances for health care. In 2005, Ghana spent 6.2% of GDP on health care, or US$30 per capita. Of that, approximately 34% was government expenditure (Canagarajah, Sudharshan; Ye, & Xiao, 2001)

In 2015, life expectancy at birth was 66.18 years with males at 63.76 years and females at 68.66 years and Infant mortality was at 37.37 per 1000 live births (Afro.who.int, 2010).

Formal education in Ghana is divided into three phases: basic education (kindergarten, primary school, and lower secondary school),

secondary education (upper secondary school, technical and vocational education) and tertiary education (universities, polytechnics and colleges). Education is compulsory between the ages of four and 15 (basic education).

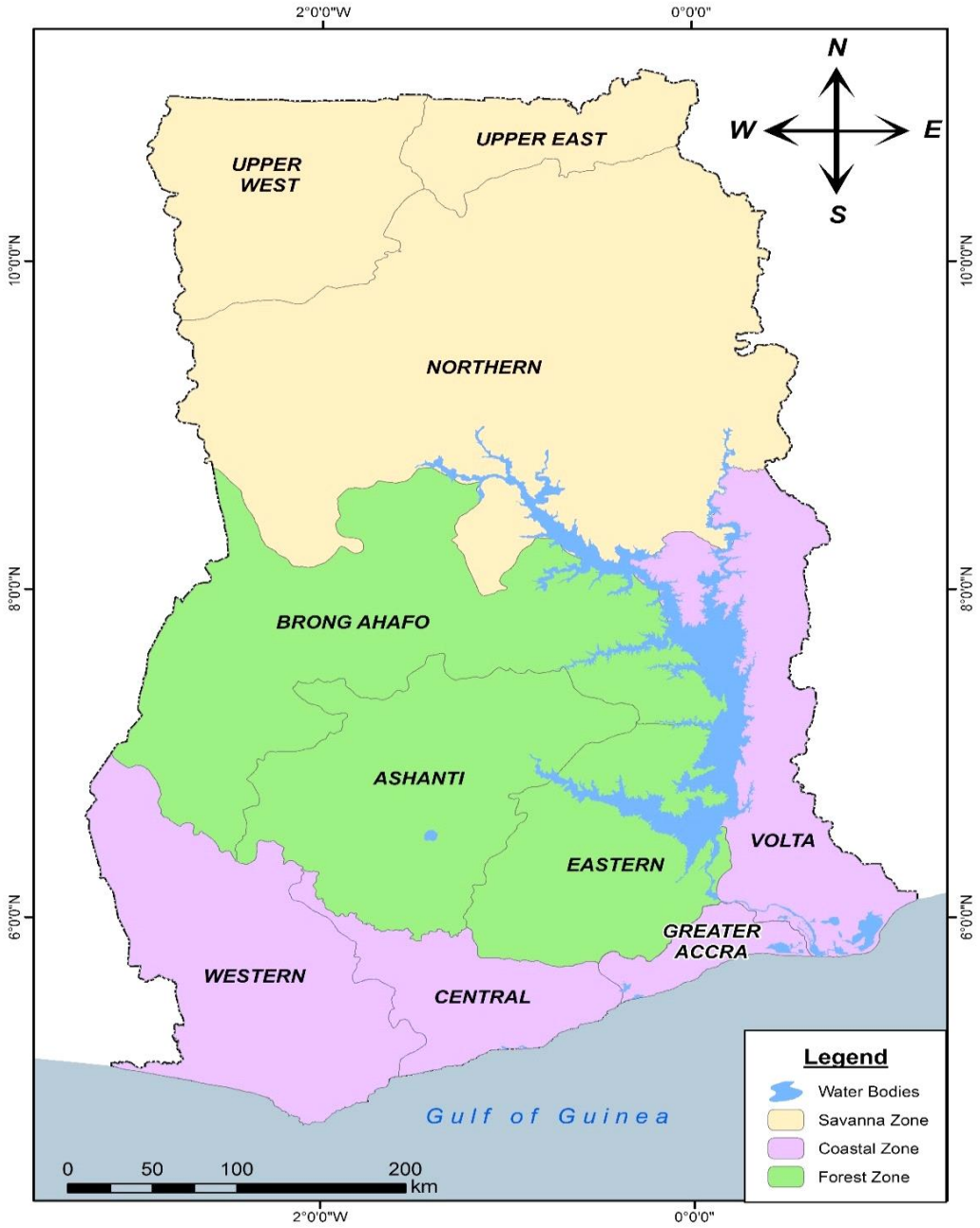

Figure 2: Map of Ghana

Source: Department Of Geography and Regional Planning University Of Cape Coast

Source of Data

The study used a secondary data and the data was obtained from the Ghana Global School Based Student Health Survey (GSHS) conducted in 2012 (WHO, 2014). Secondary data was used for the study because the researcher wanted to save time and also it been used by other researchers makes it easier to carry out further research. The Global School Health Survey was conducted through partnership among the World Health Organisation (WHO), Disease Control and Prevention (CDC), Middle Tennessee State University and the Ghana Education Service (GES). The data was collected using a cross-sectional survey design among WHO countries, which were interested in examining the behavioral risk factors and protective factors in several domains of functioning among the youth in schools. Data collection was done by the use of close-ended structured questionnaires administered to the students. This data is relevant to the study because as part of the study adolescents were asked questions in relation to suicide and these questions serve as the basis for this study.

Target Population

The 2012 Ghana Senior High GSHS was a school-based survey of students in Grades SHS 1-4, which were typically attended by students aged 13 - 17 years. Therefore, the population for the study is made up of students in senior high schools in Ghana (Lance, 2016). Participants for this study were sampled from selected senior high schools (SHS) in all the 10 administrative regions of Ghana.

Sampling Procedures

A two-stage cluster sample design was used to produce data representative of all students in Grades SHS 1, SHS 2, SHS 3, and SHS 4 in Ghana Senior High Schools. The 2012 Ghana GSHS employed a two-stage cluster sample design to produce a representative sample of students in senior high school (SHS) levels one, two and three. The first-stage sampling frame consisted of all schools containing any SHS class level. Schools were selected with probability proportional to school enrolment size. For sampling, Ghana was divided into three Zones representing all 10 geographic regions. The geographic regions within each zone were South Zone made up of Greater Accra, Central, Volta, Eastern, Central Zone made up of Brong-Ahafo, Ashanti, Western and North Zone made up of Northern, Upper East and Upper West. A total of 25 schools were selected for the Ghana survey. The second stage of sampling consisted of randomly selecting intact classrooms (using a random start) from each school to participate. All classrooms in each selected school were included in the sampling frame. All students in the sampled classrooms were eligible to participate in the GSHS. This sampling method used for the study is equally good for my work because it helped the researchers to obtain larger sample size and at the b same time information from all the regions of the country which can be representative enough for my study.

Description and definition of Variables

All variables were re-coded on dichotomous scale in this study as in other existing GSHS studies (e.g., Asante et al 2017; Arat& Wong, 2016; Ohene, et al., 2015; Randall, Doku, Wilson &Peltzer, 2014).

Dependent variable

The outcome variable was extracted from the data, namely, suicidal ideation. In this study, the outcome variable was measured with a single self-report question. It was obtained from the question "during the past 12 months, did you ever seriously consider attempting suicide?" The response was categorized as "Yes" (1) or "No" (0).

Independent Variables

A set of predictor variables including demographic characteristics of the participants, was used. The predictor variables for the study includes , age, sex, bullied, alcohol use, substance use, number of times one has attempted suicide and suicide plan. All these variables sum up to 6. The variables were dichotomously coded yes and No whiles others were not.

Age was coded into younger adolescents which is 14 to 17 years and 18 years old and above. Sex was coded as Male and female, grade was coded as SHS 1, SHS2, SHS3, SHS4, and .Number of days being bullied was coded as never and 1-19years and 20 to all 30days. Substance use was coded as never and other responses and depression was also coded as never or most of the times. Ever consider attempting suicide in the past 12 months and Plan to attempt suicide in the past 12 months were presented in a descriptive form.

Limitation of the Data

The secondary researcher was not involved in the data collection. Therefore, the secondary researcher does not know if the data is affected by problems such as respondent misunderstanding of specific survey questions. Also the data set contains a single variable for each of the first two research

questions which are what are the intentions of in-school adolescents to attempt suicide? And what is in-school adolescents' behavior towards suicide and this do not give enough evidence on the intention of in-school adolescents to commit suicide and the behavior of in-school adolescents to attempt suicide. The use of the secondary data did not permit further probing and interrogation of some of the findings arrived at.

Data Analysis

The statistical software STATA version 13 was used to process the data. Result of the data analysis was presented in simple frequency distributions. Multivariate logistic regression and bivariate logistic regression model was used to analyzed the data. Statistical significance of the predictor variables on the dependent variable was established using odds ratio and the associated (1-alpha) % confidence interval from the estimated model.

All missing responses were identified and removed for sensitivity analyses. The removing of these missing responses helped the secondary researcher to get an accurate result, preventing any biases, or misinterpretation, and to secure representativeness (Sterne et al., 2009). Other measures includes evaluation of the dataset to ensure its appropriateness for the research topic through determining the purpose of the original project that produced the data because this can influence many factors such as the targeted population, the sample selected, the wording of questions on the survey and the general context of the study. Also information that was actually collected was checked as well as the time the data was collected by the second researcher to avoid the use of information that is very old. All these put together made the data set useful for study by the second researcher.

In summary this chapter talks about the Research Design used for the study, the study population the study area, source of data, sampling procedure, Description and definition of Variables, limitation of the data and the data analysis method that was used.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

The purpose of this study was to investigate into suicidal ideation among in- school adolescents in Ghana. This chapter presents the results and discussion of the analyzed data. The chapter is in two main sections. The first section presents the results while the second section presents the discussion of the results.

Background Characteristics

This part presents the results of the analysis of the demographic data of the respondents. It covers their gender, age range and class level. The results are presented in Table 1.

Table 1: Background Characteristics of the Study

Variables	Male frequency Percent		Female Freq. percent		Total frequency (Male+Female)
	N=1050	100 %	N=897	100 %	
Age					
14-17	468	44.57	430	47.94	898
18 and above	582	55.43	467	52.06	1049
Grade					
SHS 1	300	28.57	272	30.32	572
SHS 2	204	19.43	175	19.51	379
SHS 3	345	32.86	267	29.77	612
SHS 4	201	19.14	183	20.4	384
Suicide plan					
Yes	209	20.27	220	24.89	429
No	822	79.73	664	75.11	1486
Number of times one has actually attempted suicide					
0 times	824	78.7	680	76.75	1504
1 time	106	10.12	111	12.53	217
2 or 3 t	76	7.26	57	6.43	133
4 or 5 t	18	1.72	21	2.37	39
6 or more	23	2.2	17	1.92	40
How many times were you bullied					
Never	567	57.68	440	53.72	1007
1-19 days	362	36.83	339	41.39	701
20-30 days	54	5.49	40	4.88	94
Alcohol					
Never	898	88.04	778	90.05	1676
1 or more times	122	11.96	86	9.95	208
Substance Use					
Never	819	83.91	735	88.98	1554
Ever use	157	16.09	91	11.02	248
Depression					
Never/rarely/sometimes	893	85.13	744	83.13	1637
Most of the time/always	156	14.87	151	16.87	307

Source: GSHS Data, (2012)

Table 1 shows the background characteristics of the respondents in the study. It can be seen that majority of the respondents 55.43 percent of the respondents were males 18 years and above and females recorded 52.06 percent. Those who were 14-17years recorded 44.57 males and 47.94 females

respectively. With the grade level the highest numbers of respondents were in SHS 3 with 32.86 percent of them being males and 29.77 percent being females and this shows that higher number of males have higher educational rate as compare females. With suicide plan 20.27 of the males have never made suicide plan whiles 24.89 of females have made a suicide plan indicating high suicide plan among females as compare to their male counterparts. With alcohol use 88.04 percent of the males never used alcohol whiles the number of females who have never use alcohol was recorded as 90.05. This is an indication that males at the senior high school have higher alcohol risk because they are those who use alcohol at the highest rate as compare to their female counterpart. Males have lower percentage of depression (14.87%) as compared to females who reported 16.5 percent.

Results of Analysis of Main Data

The Intentions of In-School Adolescents to Attempt Suicide.

The first research question sought to identify the intentions of in-school adolescents to attempt suicide. In answering this question, the respondents were asked to indicate if they had made plans for suicide in the past 12 months. The data obtained from the respondents was analyzed using cross tabulation with percentages and frequencies

The results are presented in table 2.

Table 2: In-School Adolescent's Intention to Attempt of Suicide

Variable	Male		Female		Total Freq (Male+Female)
	Freq N=1031	Percentage	Freq N=1031	Percentage	
Suicide plan					
Yes	209	20.27	220	24.89	429
No	822	79.73	664	75.11	1486

Source: GSHS Data, 2012

Table 2. Shows the in school-adolescents intention to attempt suicide.

The results show that majority of the respondents822 (79.73%) % males and 664(75.11%) of females did not make a plan about how they would attempt suicide with the remaining 209(20.27%) of males and 220(24.89%) of females who made a plan about how they would attempt suicide.

In-School Adolescents' Behaviours toward Suicide

The second research question was meant to identify the behaviours of in-school adolescents toward suicide. In answering this research question, the respondents were asked to indicate the number of times they had attempted suicide in the past 12 months. The responses of the respondents have been presented in Table 3.

Table 3 – Number of Times of Attempted Suicide

Variable	Male		Female		Total Freq (Male+Female)
	Freq N=1031	Percentage	Freq N=1031	Percentage	
Times attempted suicide					
0 Times	824	78.7	680	76.75	892
1 Time	106	10.12	111	12.53	217
2 Or 3 T	76	7.26	57	6.43	133
4 Or 5 T	18	1.72	21	2.37	39
6Or More	23	2.2	17	1.92	40

Source: GHS Data, 2012

Table 3 shows the number of times that the respondents had attempted suicide in the past 12 months. It can be seen that majority of the respondents824 (78.7%) and 680(76.75%) had not attempted suicide at all. Out of those who had attempted suicide, 10.12 percent of males and 12.53 percent of females had done so one time in the past 12 months. Males with the percentage of 7.26 and females with a percentage of 6.43 have attempted suicide 2 or 3 times. 1.72 percent of the male respondents have attempted suicide 4 or 5 times whiles 2.37 percent was reported among females. 2.2 percent of males reported attempted suicide 6 or more times with females reporting 1.92

percent. It can be inferred from the results that the frequency of attempting suicide among the respondents was low.

Factors That Influence Suicidal Ideation among In-School Adolescents

The 3rd research question sought to identify the factors that influence suicidal ideation among in-school adolescents. In answering this research question, multivariate logistic regression analyses were done by impulsively fitting all the variables in a multivariate logistic regression model to understand the factors that influence suicidal ideation among in-school adolescents in Ghana. Three sequential models were run and the results are presented in Table 4.

Table 4– Multivariate Logistic Regression of Factors Associated with suicidal ideation

Variables	Model 1	Model 2	Model 3
Age			
14-17 Years	Ref	Ref	Ref
18years And Above	1.066	1.078	1.049
	[0.845,1.346]	[0.820,1.417]	[0.796,1.383]
Sex			
Male	Ref	Ref	.Ref
Female	1.490***	1.520*	1.505**
	[1.181,1.879]	[1.161,1.988]	[1.148,1.974]
Bullying			
Never		Ref.	Ref
1-19 Days		1.776**	1.719***
		[1.335,2.362]	[1.289,2.291]
10 To All 30days		3.186**	2.983***
		[1.923,5.279]	[1.770,5.027]

Table 4 cont

Alcohol			
Never	Ref.	Ref	
1 Or More Times	1.462	1.432	
	[0.976,2.189]	[0.947,2.164]	
Substance Use			
Never	Ref	Ref	
Other Responses	1.597*	1.567*	
	[1.114,2.291]	[1.089,2.256]	
Depression			
Never		Ref	
Most Of The Times		2.235***	
		[1.612,3.100]	
N	1938	1636	1634
Pseudo R^2	0.006	0.038	0.053

Exponentiated Coefficients; 95% Confidence Intervals in Brackets

*P< 0.05, **P< 0.01, ***P< 0.001

OR=Odds Ratio

Ref= reference

P=Significance level

N=Frequency

Source: Computed from GSHS Data (2012)

The pseudo R^2 values for the three models considered in the analyses were Model 1 – 0.006, Model II – 0.038 and Model III – 0.054. The results indicate that Model III which consists of demographic and psychosocial factors (age, sex, alcohol use, bullying, substance use and depression) was the best predictor of suicidal ideation among in school adolescents in Ghana.

From model III, sex, bullying, substance use and depression were found to be significantly associated with suicidal ideation among in-school adolescents in Ghana. Regarding sex it was found that females have higher

likelihood of suicidal ideation as compared to males. As shown in Table 4, females have high likelihood (OR=1.505, CI=1.148, 1.974) to have suicidal ideation compared to their male counterparts. Regarding bullying, it was found that the likelihood of suicidal ideation was lesser among those who had lower frequency rate of being bullied as compared to those who had higher frequency rate of being bullied ranging from 1 to 19 days for lower frequency and 10 to 30 days for higher frequency 1-19 days (OR=1.719, CI=1.289, 2.291) and 10 to 30 (OR=2.983, CI=1.770, 5.027). Also, as shown in the Table 4, it was found that the likelihood of suicidal ideation among in school adolescents was higher among those who has used substance before as compared to those who has never used variable (OR=1.567, CI=1.089, 2.256) Further, depression was found out to be highly associated with suicidal ideation with (OR=2.235, CI=1.612, 3.100) as compared to those adolescents who were not depressed as reported in Table 4. The implication of the results in Table 4 implies that sex; bullying, substance use and depression are significantly associated with suicidal ideation among in-school adolescents in Ghana.`

Hypothesis 1:

H_0: There is no statistically significant association between demographic factors and suicidal ideation among in-school adolescents in Ghana.

This hypothesis was meant to identify the association between demographic factors (age and sex) and suicidal ideation. A bivariate analysis was carried out to assess the association between demographic factors (age and sex) and suicidal ideation. To know the association between the variables that are demographic and suicidal ideation the researcher run a binary logistic

regression. The results are shown in Table 5. The table contains the variables names, odds ratio and the confidence interval with ref being their reference period.

Table 5 Logistic Regression on Demographic Factors and Suicidal Ideation

Variables	Odds Ratio	(95%) Confidence Interval
Age		
14 -17 years	Ref	Ref
18 years and above	1.051	0.833,1.326
Sex		
Male	Ref	Ref
Females	1.486***	1.179,1.874

Source: Computed from GSHS Data (2012)

The bivariate logistic regression table showing the association between demographic factors and suicidal ideation indicate that sex influences suicidal ideation and specifically females have the higher suicidal ideation as compared to their male counter parts with an odds ratio of OR=1.486 (CI=1.179,1.874). The age of the adolescents was not seen as a factor that influences suicidal ideation among in school adolescents in the country. The bivariate logistic regression reported 1.051odds ratio among adolescents aged 18 years and above with reference years being 14-17 years which constitute younger adolescents. The findings imply that sex was a major factor influencing suicidal ideation among in-school adolescents compared to age. In this regard, the null hypothesis is rejected for sex but accepted for age.

Hypothesis 2:

H_0: There is no statistically significant association between psychosocial factors and suicidal ideation among in-school adolescents in Ghana.

This hypothesis was meant to identify the relationship between psychosocial factors and suicidal ideation among in-school adolescents in Ghana. In testing this hypothesis, a bivariate analysis was carried out to assess the association between psychosocial factors (bullying, alcohol use, substance use and depression) and suicidal ideation. The results are presented in Table 6. The table contains the variables names, odds ratio and the confidence interval with ref being their reference period.

Table 6- Logistic Regression on Psychosocial Factors and Suicidal Ideation

Variables	Odds Ratio	(95%) Confidence Interval
Bullying		
Never	Ref	Ref
• 19 Days	2.030***	1.567,2.629
20 – All 30 Days	3.464***	2.167,5.538
Alcohol		
Never	Ref	Ref
1 Or More Times	1.827***	1.305,2.559
Substance		
Never	Ref	Ref
Other Times	1.948***	1.424,2.665
Depression		
Never	Ref	Ref
Most Of The Times	2.165***	1.634,2.869

Source: Computed from GSHS Data (2012)

Table 6 shows the bivariate logistic regression shows the association between psychosocial factors and suicidal ideation. It can be seen that there is a very

strong association between the listed factors (bullying, alcohol, substance use and depression and suicidal ideation. For instance bullying shows a strong association between suicidal ideation with reference to the bivariate logistic regression in table 6.

Bullying has an odds ratio of OR=2.030***, *P*< 0.001among those who were bullied for about 1 to 19 times within the given period which is 30days with a confidence interval of 1.567,2.629 and as the number of times one is been bullied increases the association between bullying and suicidal ideation still remain significant. Again, with reference to the table 6, being bullied 20 to all 30 days reported an odds ratio of OR=3.464***, with a confidence interval of CI=2.167, 5.538. Not only was bullying significantly associated with suicidal ideation but also alcohol.

Further, Table 6.Shows that alcohol usage have an odds ratio of OR=1.827***, CI=1.305, 2.559which serves as an indication that alcohol usage is a factor that influences suicidal ideation among in-school adolescents. Substance use is also another factor that influences suicidal ideation among in-school adolescents. This is because Table 6 shows that substance use has a high association with suicidal ideation. The table shows an odds ratio of OR=1.948***, and a confidence interval of 1.424, 2.665.

Lastly, depression has also been seen as having a strong association between suicidal ideation with a report of an odds ratio of 2.165***, CI=1.634, 2.869. The implication of the results in Table 6 is that bullying, alcohol, substance use and depression are associated with suicidal ideation.

Discussion

Intentions of In-School Adolescents to Attempt Suicide

In answering the question on the intentions of in-school adolescents to attempt suicide, the study found that 20.27percentof the male respondent made a plan about how they will commit suicide whiles the remaining 79.73percent of the males did not make a plan about how they would attempt suicide. In relation to the females 24.89 percent made suicide plan and 75.11 percent did not make any suicide plan.

The finding of the current study contradicts other studies. For instance, some researchers have suggested that people make plans about the method they will use to attempt suicide before they actually do so and that there is age, sex and place of residence variability of method people plan to use (Schulberg, 2005, Freitas et al., 2008 & Huisma, 2010). O'Connell's, (2004) came out with stages individuals pass through before complete suicide occurs and these stages are suicidal ideation which comes along with suicide plan in his theory of suicide. Other studies have suggested that people make plans about the method they will use based on the things that are easily accessible. Firearms are readily available in many households and remain the most common method/plan of suicide in the United States (Conwel et al. 2002). For the fear of disfigurement among women according to lester (2000) & Conwel et al. (2000) they plan to use things that will not disfigure their faces and because of that the dominant method they use is poisoning themselves. Some survivors who had attempted suicide by charcoal burning have indicated that they planned to use this method because it was easy and painless (Chung, 2001).

However the reason for the difference in the result of this study can be from the fact that many of the studies were not done within the African continent and also the studies were not specifically based on adolescents as it has been done in this study. Also majority of the respondents are females and from literature and the result on Table 1 females have higher suicidal ideation (Grunbaum et al., 2001, Oliver et al, 2005, NCI, 2013; 2006) but lesser number progress to suicide attempt and therefore are less likely to make suicide plan.

In-School Adolescents' Behaviours toward Suicide

In terms of the behaviours of in-school adolescents toward suicide, the study revealed that 78.7 of the male respondents and 76.75percent of the respondents have never attempted suicide whiles 10.12percent of the males and 12.53 of the females have done so only one time. The highest frequency which is 6 or more times recorded only 2.2 percent among the males and 1.92percent among the females. The results imply that in terms of frequency of attempts, the rate was not high. Nevertheless, attempting suicide once, twice or trice in a year is dangerous and need to be dealt with. The finding in terms of frequency of attempt of suicide even though low, still appears greater than what happens in most societies. For instance, the CDC National Center for Injury Prevention and Control (NCIPC) (2012) reported that 7.8 percent of young people aged 15 to 19 years had made at least one suicide attempt in the past year. In a similar vein, Nock et al (2008) found that 3.1–8.8 percent of young people had attempted suicide in their lifetime.

Further, it has been found that in the United States, the results from the 2003 Youth Risk Behavior Surveillance System (YRBSS) revealed that about

8.5 percent of students between 9th and 12th graders self-reported having attempted suicide at least once during the previous year. Several other studies in the USA have found that between 3-9 percent of adolescent students attempt suicide each year (Borowsky, 2001; Grunbaum, 2004; National Center for Health Statistics, 2004). Grunbaum et al (2001) also showed that almost 9% of high school students had attempted suicide at least once. The implication is that the issue of suicidal behaviours is high among the respondents in the current study. The findings could be explained to be due to the fact that in Ghana, young people are not encouraged to speak about their worries and anxieties to others. As a result, their worries can bottle up and cause them to consider and attempt suicide. This could be the reason why suicide attempt was found to be high in the current study.

Factors that Influence Suicidal Ideation among In-School Adolescents

The results in relation to the factors that influence suicidal ideation among in-school adolescents showed that sex, bullying, substance use and depression are significantly associated with suicidal ideation among in-school adolescents in Ghana. The sex of respondents is associated with suicidal ideation, more specifically; females have about 1.505 odds ratio which indicates increased likelihood to have suicidal ideation compared to their male counterparts. This could probably be because females are more emotional and tend to be more worried about issues compared to males. Bullying also makes young people vulnerable to suicidal ideation most particularly among individuals with higher frequency rate of being bullied. Victims of bullying are likely to have suicidal ideation because they can be overwhelmed by the pain and emotions of suffering bullying. They are also likely to be alienated

and therefore are likely to contemplate suicide particularly when the situation becomes unbearable. Substance use and depression both influence suicidal ideation because they all put the individual in a situation where they are likely to feel alone and helpless and therefore develop the desire to commit suicide. These are in line with the interpersonal theory of suicide which proposes that perceived burdensomeness and a sense of low belongingness or social alienation lead to a desire for suicide (Joiner, 2005).

The findings are in line with the findings of Wilson et al (2012) that the occurrence of anxiety, loneliness and being bullied were found to be associated with increased occurrence of suicidal ideation and planning. The findings of the study confirm several other studies such as that of Hepburn et al (2012), Klomek, et al (2007) and Bhatta et al (2014). These studies found a strong association between bullying and suicidal ideation.

On the contrary, Park et al (2006) reported no association between bullying and suicidal ideation. Park et al however reported that the most important predictors of suicidal ideation for males as a result of the multivariate analysis were history of suicidal attempt, depression, hostility, smoking, alcohol abuse, communication with friends, and self-esteem. Marcel et al., (2003) reported that among boys no significant association exist between being bullied directly and depression, whereas among girls there was a strong association and the same applies to suicidal ideation. The contradictory findings to the study could be due to the fact that these studies separated males from females who were been bullied but the current study did not separate the two.

In addition, the findings of the current study support the findings of Jason et al (2014) that alcohol misuse can lead to suicidal ideation among adolescents. Stewart et al., (2001) also found that adolescents who reported substance use were approximately three times more likely to make suicidal attempt compared to those who reported no substance use. Ramstedt (2001) also found wide regional differences in Europe, with the suicide rate being more responsive to changes in alcohol consumption in low-consumption countries (i.e. Scandinavia) than medium or high-consumption (i.e. Mediterranean) countries. In studies on suicidal ideation and suicide bahaviour the researchers found that exposure to alcohol consumption and smoking was associated with suicidal ideation in both sexes (Roberto et al. 2014, Malta et al. 2010, Schilling et al. 2009, Sharma et al., 2015 &Lamis 2006) and all these studies confirms the findings of the study.

The similarities among all the findings imply that bullying, gender, alcohol and substance use as well as depression are all factors that influence suicidal ideation among in-school adolescents.

Association between Demographic Factors and Suicidal Ideation among In-School Adolescents

The first hypothesis meant to test the association between demographic factors and suicidal ideation among in-school adolescents revealed that sex was associated with suicidal ideation while age was not associated with suicidal ideation. In terms of sex, it had been identified females have higher suicidal ideation than males. In confirmation, Joe et al (2008) revealed that one-third of women and 13% of men had previously tried to commit suicide. Thus, sex is significantly associated with suicidal ideation. In other words, the

suicidal behaviours of males and females were different. This has been confirmed in several other studies that compared to male fatal suicidal behaviour, females engage in self-harm and non-fatal suicidal behaviours (Canneto, 2009; Beautriais, 2006; Jaworski, 2005). Thus, in females, the appeal function of deliberate self-harm is used to communicate distress or to modify the behaviour and reactions of other people while in males, deliberate self-harm is more often associated with greater suicidal intent (Hawton, 2000, De Hert & Peuskens, 2000; Murphy, 2000).

Further, the current study found no association between age and suicidal ideation which in contrast with several studies. For instance, the CDC (2011) and (2013) found that suicidal ideation and behaviour varied among individuals based on their age. Specifically, the CDC revealed that suicide is the third leading cause of death among persons aged 10-14, the second among persons aged 15-34 years, the fourth among persons aged 35-44 years, the fifth among persons aged 45-54 years, the eighth among person 55-64 years, and the seventeenth among persons 65 years and older. Among people 20 to 24 years of age, the suicide rate was 12.8 per 100,000 young adults, which is seven times as many deaths among men as among women (Kochanek et al. 2009). Skegg et al, (2005) reported on the high suicide rates and suicidal ideation in the 1980s of Māori and non-Māori males aged 15–24 years (about 24 and 28 per 100,000 respectively), but with progressively lower rates across the age-range among Māori males, contrasting with increasing rates across the age-range of non-Māori. The results of rural residents in Sichuan Province study brought out that age have an influence on suicidal ideation Dai, 2011 & Chiu et al., 2012). However the contradiction among the findings could be

because the sample in the current study was made up of individuals within the adolescence age period compared to other studies which compared individuals of varied age groups like adolescents and adults.

Association between Psychosocial Factors and Suicidal Ideation among In-School Adolescents in Ghana

The last and final hypothesis which was meant to identify the association between psychosocial factors and suicidal ideation among in-school adolescents in Ghana revealed that bullying, alcohol, substance use and depression are associated with suicidal ideation. These factors are all concerned with the psychological make-up of individuals as well as their social relations. When situations get too much for adolescents, they are more likely to contemplate suicide.

The findings of the study are in line with the findings of Malta et al. (2010) that the consumption of alcohol and drug use by adolescents was directly associated with indicators of psychosocial stress such as feelings of loneliness, sleeping problems, feeling of sadness, suicidal thoughts, and suicidal plans. In a similar vein, the findings of the current study support the findings of Garlow et al (2008) and Singh and Joshi (2008) that there was a significant relationship between depression and suicide ideation with high levels of depression associated with high levels of suicide ideation. There are strong correlational relationships between the increased risk factors college students experience and the increased rates of suicidal ideation and depression: these relationships are most likely due to stressful life events, but can also be influenced or caused by an individual being predisposed to development of depression (Ohayon et al., 2014 & Emory University, 2015).

Supported by the findings of Roberto et al (2014) that exposure to alcohol consumption and substance use was associated with suicidal ideation.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents the summary, conclusions and recommendations of the study. Suggestions for further research are also given in this chapter.

Summary

The purpose of this study was to investigate into suicidal ideation among in- school adolescents in Ghana. The study was guided by three research questions and two hypotheses. They are:

Research questions

- What are the intentions of in-school adolescents to attempt suicide?
- What is in-school adolescents' behavior towards suicide?
- What are the factors that influence suicidal ideation among in-school adolescents?

Hypotheses

- H_0: There is no statistically significant association between demographic (age and sex) factors and suicidal ideation among in-school adolescents in Ghana.
- H_0: There is no statistically significant association between psychosocial factors (bullying, alcohol use, substance use and depression) and suicidal ideation among in-school adolescents in Ghana

Literature was reviewed covering issues relating to suicidal ideation, intentions to attempt suicide, suicidal behaviors, and factors influencing

suicidal ideation among in-school adolescents. The conceptual framework upon which the study was based was Bronfenbrenner's Ecological Systems Model. The study was based on two main theories. This included the Interpersonal theory of suicide and the three-step theory of suicide. It was found from the literature reviewed that there was a dearth of local literature on adolescent suicidal ideation in Ghana.

Major findings

In answering the first research question on the intentions of in-school adolescents to attempt suicide, the study found that 20.27percent of the males and 24.89 percent of the female respondents made suicide plan in the past 12 months while 79.73percentof the males and 75.11 of the females did not make suicide plan in the past 12 months. Again, it was found in relation to in-school adolescents' behaviours toward suicide that78.7percent of the males' respondents and 76.75 percent of the female respondents had never attempted suicide in the past 12 months while 10.12percent of the males and 12.53 of the females had attempted suicide once in the past 12 months. Almost 7.26percent of the male respondents' and 6.43 percent of the female respondent had attempted suicide and they had done so 2 or 3 times with1.72percent of males and 2.37 percent of the females who had attempted suicide 4 or 5 times. Approximately 2 percent of the male respondent and 2 percent of the female respondent had also attempted suicide6 or more times in the past 12 months.

Further, the study revealed that sex; bullying, substance use and depression were major factors that influence suicidal ideation among in-school adolescents in Ghana. It was also found that there was a significant association between sex and suicidal ideation but not age and suicidal ideation. Finally,

there was an association between psychosocial factors such as bullying, alcohol, substance use and depression and suicidal ideation among in-school adolescents in Ghana.

Conclusions

In general, it can be concluded that suicidal ideation among in-school adolescents in Ghana is a cause for concern. Specifically, the following conclusions are drawn based on the findings of the study:

- It can be concluded from the study that the percentage of in-school adolescents in Ghana who had ever make suicide plan in the past 12 months was a cause for concern. Majority of in-school adolescents in Ghana had not make suicide plan suicide but those who had made suicide was significant enough to warrant identifying measures to help all young people.
- It is concluded from the study that few percentage of in-school adolescents in Ghana have attempted suicide in the past 12 months with most of such young people attempting suicide once, twice or three times. Thus, these people have failed in their attempt to take their own lives. However, they need to be helped to prevent any other attempt to take their lives in the future.
- It can be concluded from the study that sex, bullying, substance use and depression are major factors that influence suicidal ideation among in-school adolescents in Ghana.
- It also concluded that female in-school adolescents in Ghana are more likely to consider or contemplate suicide compared to their male

counterparts. However, the age of young people is likely not to affect their suicidal ideation.

- Finally, it can be concluded that being a victim of bullying, abusing alcohol and drugs and depression makes in-school adolescents in Ghana vulnerable to suicidal ideation. These psychosocial factors alienate young people, make them feel helpless and make them consider death as a better option than living.

Recommendations

The following recommendations are made based on the findings of the study:

- It is recommended that the Ghana Health Service, Ghana Education Service and other agencies responsible for the welfare of young people to intensify education on the avoidance of suicide among young people. Thus, all these stakeholders have to come on board to be able to reduce the incidence of suicidal ideation among in-school adolescents in Ghana.
- In planning educational programmes concerning suicide, agencies (Government of Ghana, Ghana Education Service, and Ghana health service, Ministry of women and children affairs) responsible should give more attention to female adolescents since it was found that they were more likely to contemplate suicide than their male counterparts.
- The Ghana Education Service should strengthening their policies on bullying to ensure that it is curbed to help reduce suicidal ideation since bullying was found to be one of the psychosocial factors responsible for suicidal ideation among in-school adolescents.

- The Ghana Education Service should ensure that schools organize guidance counseling programmes for their students on drug abuse and depression. This can help students adopt behaviours that can help reduce suicidal ideation.

Suggestions for further research

It is suggested that further research consider targeting adolescents who have made suicide plan or attempted suicide to get in-depth information from them concerning their actual reasons for doing so. In this sense, using a qualitative approach or mixed methods approach would give depth in the information obtained from the sample.

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