UNIVERSITY OF CAPE COAST

IMPACT OF BODY IMAGE AND SELF ESTEEM ON SUICIDAL IDEATION AMONG ADOLESCENTS WITH SICKLE CELL DISORDER: THE MEDIATING ROLE OF HOPELESSNESS

CECILIA AMENYIHE

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BY

CECILIA AMENYIHE

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MARCH 2021

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: ……

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: ……..……

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

Name: ……

ABSTRACT

Mental health of adolescents with chronic medical conditions has been a major focus of researchers and clinical psychologists over the years. The purpose of this study was to examine the body image and self-esteem as determinants of suicidal ideation with consideration to mediating role of hopelessness among adolescents with sickle cell disorder in Cape Coast, Ghana. The study was a quantitative study that employed the descriptive cross-sectional design. The census method was used to engage all 80 respondents in the study. The respondents were required to answer a questionnaire that comprised the BESAA, RSES, HPC and SBQ-R. Data was analysed using means and standard deviations while further statistical analysis was done using one-way ANOVA, regression and Hayes PROCESS. The results revealed significant association between body image and self-esteem of adolescents with SCD. Also, hopelessness mediated the association between body image and suicidal ideation. However, the association between self-esteem, hopelessness and suicidal ideation was not significant. Based on the results from the analysis, the researcher observed that the variables observed to be associated with suicidal ideation among adolescents with SCD were body image and hopelessness. It was concluded that adolescents with SCD are significantly affected by negative perception about themselves and that higher levels of hopelessness affects their mental health. It is thus recommended that health officers and school authorities pay attention to adolescents' psychological status in relation to their holistic healthcare. The study findings will lay the base for health experts to offer interventions that will meet specific needs of adolescents struggling with chronic conditions.

KEY WORDS

Body Image

Hopelessness

Self Esteem

Sickle Cell Disorder

Suicidal Ideation

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DEDICATION

To my family.

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CHAPTER ONE

INTRODUCTION

Background to the Study

Adolescence according to Laski (2015) is a critical developmental stage that life presents and is associated with rapid development emotionally, socially and biologically. Steinberg (2014) refers to adolescence as the period between the beginning of pubertal stage and the formation of social independence. The World Health Organisation (WHO) concurred that, an adolescent is an individual in the 10-19 years' age group (UNICEF Staff, 2011). Adolescence comprises three transitional stages namely early adolescence, middle adolescence and late adolescence (Sanders, 2013). WHO (2011) stated that during this transitional phase of life, adolescents develop the needed skills and competencies for a self-fulfilling, healthy and a life full of gratification. Likewise, during this period, adolescents are faced with many challenges that undermine their wellbeing and the presence of a lifelong disease further complicate the already existing physical, social, and psychological challenges of puberty (Kabiru, Izugbara, & Beguy, 2013; Suris, Michaud, & Viner, 2004). Evidence shows that in Sub-Saharan Africa (SSA) majority of adolescents grow up in abject poverty, they lack prospects for education, and face a rapid socio-cultural revolution as a result of failing social controls and collapse of customary norms (Blum, Bastos, Kabiru, & Le, 2012; Blum, 2007). These difficulties in life have adverse repercussions and debilitating effect on adolescents' health and wellbeing that is further complicated by the presence of lifelong health conditions such as sickle cell disorder.

Reports from global fronts and that from Ghana reveal that Sickle Cell Disorder (SCD) is among the major causes of death and psychopathology for many

adolescents (Gardner, 2018). Specifically, a study by Bhatt-Poulose, James, Reid, Harrison and Asnani (2016) revealed that sickle cell disease poses many dangers such as shortened life span, regular painful episodes, and risk of psychopathology. Ohene, Tettey, and Kumoji (2011) ranked SCD as the third (3rd) cause of death in a study that assessed the cause of death among adolescents in Ghana. SCD is regarded a predominant hereditary haemolytic condition that affects numerous people globally and is largely associated with substantial death and morbidity in endemic areas (Africa, Caribbean, and Arabia) (Centre for Disease Control, 2010 as cited in Forrester, Barton-Gooden, Pitter, & Lindo, 2015). This genetic disorder occurs due to an inherited haemoglobin S gene found within a homozygous state (Hb SS), or with the gene for another abnormal haemoglobin (e.g., Hb SC, Hb SB0) resulting in the production of abnormal 'sickle-shaped' red blood cells (Kings et al., 2007).

Symptoms, including painful joint and bone crises, the greater predisposition to varied infections, primary and secondary maturational problems, tendencies of being affected with stroke in later years of life, by end-organ complexities are experiences of SCD (Bhatt, Reid, Lewis, & Asnani, 2011; Cepeda, Allen, Cepeda, & Yang 2000; Serjeant, Singhal, & Hambleton, 2001). Asnani, Barton-Gooden, Grindley, Knight-Madden (2017) and Logan, Radcliffe, and Smith-Whitley (2002) opined that SCD causes significant havoc on the lives of affected persons, their caregivers, communities and the healthcare system at large. In schools, adolescents with SCD mostly record high absenteeism and thus their academic performance is affected (Epping et al., 2013). Aside the typical adolescent difficulties, young individuals battling with SCD experience various psychosocial morbidity and adjustment difficulties (Newland, 2008).

Globally, the unpleasant consequences of SCD are on the ascendancy and has transformed into health issue that needs urgent attention. Many black people have sickle cell because having the trait (i.e., only one copy of the mutated allele) makes people more resistant to malaria. Malaria is a huge problem in sub-Saharan Africa. This makes people with sickle cell trait better able to survive than people without the trait. To be more precise, malaria does not cause sickle cell anaemia but it does make the disease more common (Kings et al., 2007). The WHO as cited by Modell and Darlison (2008) reported that approximately 5.5% of people globally and over 7% of expectant mothers have the gene that causes SCD. It is estimated that between 2010 and 2050 the world will record 14, 242, 000 new-babies with SCD (Piel, Hay, Gupta, Weatherall, & Williams, 2013). Out of this estimation, Tluway and Makani (2017) indicated that 82% will come from Sub-Saharan Africa (SSA). Diallo and Tchernia (2002) reported that annually an estimated 200,000 babies born in Africa have SCD. The report revealed that Uganda, Ghana, Nigeria, Cameroon, Republic of Congo, and Gabon have a prevalence ranging from 20% to 45% (WHO, 2015; CDC, 2015). In Ghana, reports showed that 30% of the population are a carrier of SCD and 2% (14, 000) of annual new babies have the disease (Edwin, Edwin, & Etwire, 2011; Ohene-Frempong, Oduro, Tetteh, & Nkrumah, 2008).

Bhatt-Poulose et al. (2016) claimed that like other chronic diseases, SCD is associated with negative body perception among adolescents. Moreover, Cepeda et al. (2000) and Serjeant et al. (2001) contended that prominent challenge that individuals with SCD face are delays in physical growth and sexual maturation. This is because the condition is mostly accompanied by painful experiences, stroke, and poor eating habits and often leads to many maturational problems for sickle cell patients. Individuals with this health problem thus tend to have weight deficits at the

onset of age one and continue to adulthood (Adewoyin, 2015; Zemel, Kawchak, Ohene-Frempong, Schall, & Stallings, 2007). Oftentimes such developmental delays make adolescents with SCD easy targets of ridicule and bullying, consequently leading to body image dissatisfaction (Eaton, Have, Armstrong, Pegelow, & Thomas, 1995; Schwartz, Radcliffe, & Barakat, 2009; Tusuubira, Naggawa, & Nakamoga, 2019). Several studies reported that prevalence rates of body image dissatisfaction among adolescents' ranges between 20% to 77% (Ferrari, Petroski, & Silva, 2013; Pelegrini et al., 2014; Santana et al., 2013). In one comparative research, it was reported that close to 55% of adolescents with SCD had body image dissatisfactions, compared to 13% of their healthy peers (Kate, Olatunji, Edamisan, & Renner, 2011).

Alebachew and Ashagrie (2017) described body image as a multidimensional concept encompassing an individual's mental picture or perception of their body. It is formed based on the perception people holds about their physical self and their awareness of social standards of idle body image. Burrowes (2013) conceptualise body image as person's absolute or clear-cut idea of body size, shape and weight. According to Orbach, Stein, Shani-Sela and Har-Even (2001), an individual's body can be a basis of gratification meaning to life that increases the propensity to preserve one's existence from self-protection. A negative body image includes being obese as well as observing ideal body shapes by the society especially as portrayed in the media (Levine & Murnen, 2009). On the other hand, body image dissatisfaction may precipitate as underweight and a diminished self-esteem (Bhatt-Poulose et al., 2016). Koyuncu, Tok, Canpolat and Catikkas (2010) reported in their studies that most adolescents tend to use the bodies of models as standard against which to measure theirs as perfect or imperfect. This often result in dissatisfaction and are related with negative conditions. Research has established that adolescents living

with long-term health conditions are usually not content with their body compared to their peers who have no such condition to deal with (Pinquart, 2013).

Similarly, some research observations found a strong association among body image and self-esteem (Erskine, 2012; Huang, Norman, Zabinski, Calfas, & Patrick, 2007; Steg, Buunk & Rothengatter, 2008; Suris et al., 2004). Self-esteem refers to a positive or hostile behaviour for the self (Rosenberg, 1965 as cited in Mäkinen, Puukko-Viertomies, Lindberg, Siimes, & Aalberg, 2012). Seemingly, low self-esteem stems from dissatisfaction of oneself in terms of abilities, possessions, and relationships and mostly leads to feelings of unworthiness, inadequacies and deficiencies. Erermis (2004) revealed that adolescents with higher status of dissatisfaction towards their body are more likely to have a reduced status of self-esteem. The experience of impaired self-esteem as well as dissatisfied body image among young individuals with SCD are attributed to delayed maturation, underweight, small stature (Becker et al., 2007; Schwartz et al., 2009; Tusuubira et al., 2019). From the perspectives of Brown, Muhern, and Simonian (2002) and Casey and Brown (2003), adolescents battling with SCD have compromised negative body image and spend less time in social activities with the friends and families. Their physical fragility also excuses them from physical activities and social involvement. Inconsistent with these findings, Cepeda et al. (2000) reported that there are no significant variations among self-esteem and body image perception in adolescents living with SCD or those without SCD. However, Vanhalst, Luyckx, Scholte, Engels, and Goossens (2013) observed that low self-esteem among adolescents has a direct relationship with feelings of loneliness.

A significant consequence of having a dissatisfied body image and a diminished self-esteem is increased psychological distress (Duchesne et al., 2017;

Kilpela, Becker, Wesley, & Stewart, 2015). Individuals who negatively evaluate their body image develop psychosocial problems spanning from low self-esteem, increased rate of depression, anxiety, behaviour problems, impaired peer relationships, and repeated absence from school (McDermott et al., 2015). Stice and Bearman (2001) revealed that persons who are dissatisfied with their body often develop mood conditions including depressive symptoms, anxieties and dietary disorders. Similarly, teens with SCD were also found to be battling with mental health complications, particularly, depressive symptoms and anxieties (Jerrell, Tripathi, & McIntyre, 2011). Edwards et al. (2009) found that during the period of adolescence, the complications associated with SCD, the feelings of insufficiency, and the daily battle against the painful episodes are associated with low self-worth, little social engagement, low academic achievement, and hopelessness.

The construct of hopelessness can be described as negative outlooks that an individual holds about oneself or the occurrences of anticipated experiences of the future (Keeley, Wright, & Condit, 2009). Even though empirical investigations submit that hopelessness in the period of adolescence has significant impact on one's development in later years, only a handful of research attention has been given to the phenomenon (Levesque, 2011). Becker et al. (2007) found that aside the difficulties that individuals with SCD experience, there is also feelings of hopelessness due to frequent hospitalisations, consistent school absenteeism, and denial of enjoyment of normal life as an adolescent or child. Hopelessness in people mostly breed depression and suicidality (Abramson et al., 1998). In the view of Bhar Ghahramanlou-Holloway, Brown and Beck (2008), poor self-esteem, depression and hopelessness may significantly cause thoughts of suicide and attempts of suicidality. Likewise, McDermott et al. (2015) reported that suicidal ideations/attempts and poor

wellbeing of students are mostly a result of low self-esteem and mood disorders. It must be noted that adolescents with SCD must deal with or manage behavioural complications such as identity formation, physical and societal explorations, and heightened risk-taking behaviours that accompany this transitional phase of life (Patel, Flisher Hetrick, & McGorry, 2007) and at the same time cope with the devastating effects that the disease exposes them to. These overwhelming responsibilities may cause major psychological problems and lead to unhealthy behaviours such as suicidal ideation and suicide. Accordingly, Anie and Green (2015) asserted that reduced self-esteem and feelings of hopelessness are frequently identified by adults with SCD owing to repeated body aches or discomforts, hospitalisations, and resulting dismissal from job or employment.

Bhatt-Poulose et al. (2016) found that adolescents with SCD and those with negative body image dissatisfaction are more prone to experience depression and suicidal behaviour. Taking into account the high prevalence of lowered body image and low self-esteem of adolescence stage that is reported in the literature, its impact on mental health is important to consider among those with chronic SCD. The study aimed at examining the body perception and self-esteem and the influence on feelings of despair and suicidal ideation among adolescents with SCD.

Moreover, SCD condition generally affect appearances and energy preventing adolescents from doing physically demanding activities irrespective of their gender. Cepeda et al. (2000) in their work found no difference in body image perception between the study and the control groups. Cepeda et al. argued that although the result indicated that adolescent with SCD had impaired heights and weight when compared to their healthy peers, they were not outside the expected or normal variations.

Statement of the Problem

Globally, Sub-Saharan Africa (SSA) is ranked to have the highest prevalence (80% of global cases) of sickle cell disease (Rees, Williams, Gladwin, 2010; Angastiniotis & Modell, 1998; Elzouki, 2012). In Ghana, SCD was ranked the third (3rd) cause of morbidity among adolescents (Ohene et al., 2011). This means that the burden of this lifelong disease is felt greatly in Africa and Ghana is substantially affected as well. In Ghana, the condition is a significant cause of morbidity among adolescents and therefore various empirical investigations are warranted in fully appreciating the depth or extent of the identified burden. Sickle cell disease poses many dangers to the life of the individual from 5 to 6 months after birth (National Heart Lung, and Blood Institute [NHLBI], 2014), as these complications will likely worsen as they age. Several studies indicated that sickle cell can cause severe and life-threatening complications for affected individuals (Bellas, 2002; Edwards et al., 2005; O'Callaghan & Gold, 2012).

Previously SCD was labelled as a childhood condition with most individuals not living past their teens (WHO, 2015; Diggs, 1973 as cited in John-Olabode, Awodele, & Oni, 2015). Medical improvement in diagnosing and treating SCD has, however, turned it from a condition associated with very early morbidity and mortality into a chronic, life-long condition (Benton, Ifeagwu, & Smith-Whitley, 2007). With increase life expectancy currently, the gap that needs attention is how adolescents with SCD live their life or adapt to the condition, from a psychological perspective which has not been given the needed consideration in Ghana. Some studies suggested that to ensure that adolescents with SCD live a longer healthier life, they must develop psychological, personal and social skills to overcome the

challenges that the developmental period and condition presents (Thompson et al., 1999; Gil, Wilson, & Edens, 1997).

According to John-Olabode et al. (2015), findings from many studies have advocated that attention must be shifted to addressing the needs of adolescents with SCD because of the psychological, social and physical burden faced by these individuals, especially the stigma of categorising them as socially dysfunctional. It is well documented that the presence of chronic diseases undermines the wellbeing of individuals, more particularly adolescents since the transitional period is already characterised by many challenges (Kabiru et al., 2013; Suris et al., 2004). A significant problem during adolescence is an over-concern of physical appearance (Ata, Ludden, & Lally, 2007; Duchesne et al., 2017). During this developmental period, most adolescents tend to use professional models as a benchmark for as ideal body image and are dissatisfied with the outcome. Such inadequacies of body perception have an adverse implication on their wellbeing (Koyuncu, Tok, Canpolat & Catikkas, 2010).

The situation is further complicated by chronic disease like SCD which has adverse physical manifestations. According to Oyedeji (1995) and Bhatt-Poulose et al. (2016) adolescents with SCD have a considerable concern with regards to body image and weight perception because the condition negatively affects their growth and physical maturation. They also experience anorexia and reduced food intake in painful episodes, resulting in impaired development, poor nutritional status, and delayed maturation of the skeleton. As a result of the low body weight and delayed physical development, adolescents with SCD become victims of ridicule and bullying, consequently leading to having dissatisfied body image (Schwartz et al., 2009; Tusuubira et al., 2019). Despite the numerous shreds of evidence, studies on

the body image and weight perception among adolescents with chronic disease appear to be relatively scarce in Ghana to the best of my knowledge.

Additionally, Pinquart (2013) noted that adolescents with chronic disease usually experience low self-esteem because compared with healthy peers, they are unable to perform activities related to physical, social and academic functioning. Adolescents with SCD as a result of their physical fragility mostly do not engage in physical and social activities (Brown et al., 2002; Casey & Brown, 2003). This may have a consequence on their self- worth. Likewise, empirical investigations revealed that adolescents having body image dissatisfaction are likely to experience negative self-esteem (Bhatt-Poulose et al., 2016; Erskine, 2012; Huang et al., 2007; Steg et al., 2008; Suris et al., 2004). However, Cepeda et al. (2000) found no relationship among perception of self-esteem and body image in adolescents with SCD or those without SCD. According to Pinquart (2013), an understanding of the extent to which chronic diseases affect persons' self-esteem is essentially relevant for programmes or interventions that seek to improve psychological effectiveness of such individuals. It is imperative to examine the linkage among body image and self-esteem of young individuals or adolescents with chronic diseases.

Lastly, Greydanus, Patel and Pratt (2010) revealed that lifelong diseases are risk factors for psychological distresses in adolescents and could consequently prompt suicidal behaviours. Likewise, Kilpela et al.'s (2015) study revealed that negative body image and low self-esteem could trigger mental health conditions including depression, anxiety and dietary disorders. Undoubtedly, relatively younger individuals with long-term health ailments are extensively vulnerable and may have challenges handling societal misconceptions. Such instances may result in psychological challenges including reduced self-worth and desire for suicide.

Concerning these, few important questions to ask may include; does having a dissatisfied body image influence self-esteem and emotions? To what extent does hopelessness act as a mediator between the relationship of body image and suicidal ideation? Answers to these will be useful for clinicians including a clinical psychologist, health psychologist, suicidologists, counsellors and educators. Currently, there seem to be no adequate answers to these questions in Ghana although much information is available on sickle cell anaemia disorder as a hereditary blood disorder.

Dennis-Antwi et al. (2018) emphasised that much is not known regarding the experiences of individuals with or battling SCD. According to Dennis- Antwi et al., Ghana has a very high number of persons living with SCD yet the linkage among body image and weight perceptions as well as the association with complications of mental health like hopelessness and suicidal behaviours have not been previously studied. Medical improvements in diagnosing and treating sickle cell disorder has turned it from condition associated with very early morbidity and mortality into a chronic, lifelong condition. With increase life expectancy currently the gap that require attention is how adolescents with SCD adapt or cope with condition from the psychological perspective.

Purpose of the Study

The main purpose of this study is to examine the effects of body image and self-esteem on hopelessness and suicidal ideation among adolescents with sickle cell disorder.

Aims and Objectives

Specifically, the study seeks to address the following purposes:

1. Determine the body image of adolescents with sickle cell disorder.

2. Examine the differences between body image of male and female with sickle cell disorder.
3. Investigate the influence of body image on self-esteem among adolescents with sickle cell disorder.
4. Investigate the influence of hopelessness on suicidal ideation among adolescents with sickle cell disorder.
5. Ascertain the mediating role of hopelessness on the relationship between body image and suicidal ideation among adolescents with sickle cell disorder.
6. Ascertain and compare the mediating role of hopelessness in the relationship between self-esteem and suicidal ideation among adolescents with sickle cell disorder.

Research Question

There was only one research question answered:

1. What is the body image of adolescents with sickle cell disorder?

Research Hypotheses

Hypothesis One

Ho: There will be no significant difference in body image of adolescents with sickle cell disorder for males and females.

H1: There will be a significant difference in body image of adolescents with sickle cell disorder for males and females.

Hypothesis Two

Ho: There will be no significant influence of body image on the self-esteem of adolescents with sickle cell disease.

H_1: There will be a significant influence of body image on the self-esteem of adolescents with sickle cell disease.

Hypothesis Three

H_O: There will be no significant influence of hopelessness on suicidal ideation among adolescents with sickle cell disease.

H_1: There will be a significant influence of hopelessness on suicidal ideation among adolescents with sickle cell disease.

Hypothesis Four

H_O: Hopelessness will not mediate the relationship between body image and suicidal ideation among adolescents with sickle cell disease.

H_1: Hopelessness will mediate the relationship between body image and suicidal ideation among adolescents with sickle cell disease.

Hypothesis Five

H_O: Hopelessness will not mediate the relationship between self-esteem and suicidal ideation among adolescents with sickle cell disease.

H_1: Hopelessness will mediate the relationship between self-esteem and suicidal ideation among adolescents with sickle cell disease.

Significance of the Study

Findings of the current study is to provide up-to-date perspective which will aid in understanding the impact of psychosocial factors: body image, self-esteem, hopelessness as well as suicidal ideation on sickle cell disorder among adolescents. This in the long run will enable stakeholders, health practitioners such as clinical psychologists and physicians and the Ghana Health Service to adopt an integrative approach in the management of adolescents with SCD.

Findings from the study will benefit guardians and caregivers of young individuals battling with SCD since they will know how to effectively manage the psychological challenges that come with the disorder. Recommendations from the study will be beneficial to adolescents living with sickle cell diseases in the sense that it will help eliminate negative or dehumanising ideas and beliefs adolescents intermittently have about their situation while encouraging the achievement and maintenance of proper management options.

Lastly, findings from this study will add to the existing and growing body of literature explaining suicidal ideation as a response to self-esteem, hopelessness and body image dissatisfaction. Researchers could fall on this research work as reference material for further studies. In a nutshell, this study will contribute significantly to the existing body of knowledge regarding adolescents living with SCD by pointing out the impact of body image together with self-esteem on their state of hopelessness and suicidal ideations or attempts among adolescents with SCD.

Delimitation

The study was delimited to adolescents aged 10 to 21 years who were clinically diagnosed with sickle cell disorder within the Cape Coast Metropolis (CCM). Again, the only interaction among psychosocial variables such as body image, self-esteem, hopelessness and suicidal ideation of adolescents with sickle cell disorder was considered.

Limitation

The study adopted four foreign-based instruments. Although the instruments are validated in different populations, still presented the likelihood of respondents not fully understanding, especially when there is the need to translate items to some respondents.

Organisation of the Study

The whole study was structured under five different chapters. Chapter One outlines the general background information of the study. It further describes the statement of the problem, the purpose of the study, research question, and significance of the study, delimitations and organisation of the study. Chapter Two concerns the review of literature in line with the objectives of the study. The literature for the study reviewed existing work that has been done on body image, self-esteem, hopelessness and suicide ideation. The conceptual framework, theoretical frameworks, and empirical review of the study were also discussed in this chapter.

Chapter Three focuses on the methods that were employed in conducting the study. These include research design, study area, population, inclusion and exclusion criteria, procedures in sampling respondents, instruments for collecting relevant data, procedures employed in collecting data and conducting data analysis. Chapter Four outlines the research results together with the discussion of findings guided by reviewed literature. Lastly, Chapter Five summarises the study, provides relevant conclusions and recommendations based on research findings and offers suggestions for future research.

CHAPTER TWO

LITERATURE REVIEW

Introduction

The current chapter discusses and reviews literature related to this research. The literature for the study reviewed existing works that have previously been conducted on body image, self-esteem, hopelessness and suicide ideation. The theoretical framework that governs the study, as well as an empirical review of related studies are discussed. Lastly, the chapter provides a brief summary of the reviewed literature.

Conceptual Review

Sickle Cell Disorder (SCD)

SCD has been regarded as the commonest congenital or heritable disorder across the world (Howard & Telfer, 2015; WHO, 2011). This disorder comprises a collection of hereditary syndromes that affect the production of red blood cells (RBC) and its ability to transport oxygen to other parts of the body (Kings et al., 2007). The condition was originally described in 1910 by James B. Herrick (Serjeant, 2010). Among available categories of the disorder, the most commonest that affect people is sickle cell anaemia (SCA/ Hb.SS). Affected persons often experience shortage of blood due to the early death of the sickled cells. The sickle nature of RBC as well causes the blood cells to be stuck and clog when they are transported through small blood vessels. Ballas (2002) stated that in such instances, persons with SCD experience intense and lethal health problems, including painful vaso-occlusive crises, blood cell rupture, haemorrhaging, and stroke. The disease can also result in a greater propensity for severe infections, maturational delays and defects, by end-organ complications (Serjeant et al., 2001). Bhatt-Poulose et al. (2016) observed that

SCD poses many dangers such as shortened life span, regular painful episodes, and risk of psychopathology. Symptoms include anaemia with iron deficiency, swelling of hands and feet, episodes of pains, frequent infections, and vision problems. Signs and symptoms are mostly noticed between 5 months of age to a year old.

An elevation in the possibility of blood vessel pressure and collapse, cellular dehydration, persistent over-activation of an inflammatory response, pulmonary dysfunction, heightened vulnerability to contagion and cognitive/psychosocial damage are other complications that come with the disease. (Edwards et al., 2005; O'Callaghan & Gold, 2012). According to the NHLBI (2014), sickle cell conditions have an autosomal recessive pattern of inheritance from parents. A child is born with the disease provided both parents possess sickle cell traits or mutated gene. During pregnancy, neonatal screening can be conducted to detect if the unborn baby has the disease. This procedure is performed by taking a sample of the amniotic fluid for investigation. Lee, Davies and Dezatoux (2000) revealed that neonatal screening helps in early detection, effectively treating and managing the ailment in an individual.

WHO (2011) estimated that over 300,000 new-borns have SCD and nearly 6% of the world's total aggregate carry the gene of SCD. Again, The Global Burden of Disease Study estimated that approximately 4.4 million individuals live with SCD and over 43 million individuals carry the SCD gene (Vos et al., 2015; Wang et al., 2016). Approximately, 80% of global cases of SCD occur in Sub-Saharan Africa (Rees, Williams & Gladwin, 2010). The highest prevalence of this global phenomenon mostly occurs in Africans and less commonly in those of Mediterranean, Latino, East Indian, and Arab descent (Angastiniotis & Modell, 1998; Elzouki, 2012). Costa and Conran (2016) reported that the life expectancy of

people with SCD in the third world countries is unknown probably due to the absence of data and information in this part of the world. In the advance world, Wierenga, Hambleton, Lewis, and Unit (2001) estimated that the life expectancy of males is 53 years whilst that of women with homozygous SCD is 58 years.

Common means of treating and managing SCD include the use of hydroxyurea or blood transfusion therapy (Raphael, Oyeku, Kowalkowski, Mueller, & Ellison, 2013; Yawn, et al., 2014). NHLBI (2014) opined that infection control through vaccines and antibiotics, high fluid consumption, folic acid supplements, as well as pain relief are used in sickle cell disease treatment. Treatment and management are mostly towards complications and not to eradicate the disease. For instances, vaccine and antibodies are given to children with SCD to fight against infection due to damaged spleen. During anemic crises, individual may be given blood transfusion, Iron chelation therapy and other medical interventions. Ingestion of more water and pain removal medicines can be used in effectively treating swellings in the upper and lower appendages (i.e., hands and feet).

Concept of Adolescence

Adolescence is seen as a developmental stage which is subsequent to the beginning of puberty through which young people develop from being a child to an adult. Essentially, adolescence is thus seen as a transitioning period between childhood and adulthood. Mohabey and Sonber (2018) described multiple transitions in life to encompass activities such as school and occupational training, work, and joblessness, as well as shifts from one living condition to another.

In Arnett's (2007) view, adolescence can be defined in two ways; biologically and cognitively. Biologically, adolescence is the physiological transition characterised by the point of starting puberty as well as the determination of bodily

development while in cognitive terms, it is described as the alteration in thinking prowess (concrete thinking versus abstract thinking), or in social terms, the period where an individual prepares to take up mature roles. Physical changes including the development of both primary and advanced sexual traits such as, production of sperms, facial hair and an intense desire for sexual engagements in boys, and extraordinary breast formation and more body curvature and increased hips in girls physical changes.

Moreover, Sanders (2013) revealed three (3) stages of adolescence namely early adolescence, middle adolescence and late adolescence. To Sanders, *early adolescence* starts from ages 10 or 11 to 14 years and is characterised by a strive to become emotionally and economically autonomous from parents and guardians. During such period, adolescents are more interested in same-sex groups as it seems to have strong influence on their development thus decreasing family activities and parental advice. They become more concerned about their appearance to others. This may inform adolescents to align to certain clothing, hairdo and gadgets that will make peers to see them as friends. Similarly, during this time, teenagers who have no associates may have serious mental health issues. According to Sanders, *middle adolescence* (ages 15 – 17 years) is the stage where adolescents form groups with the opposite sex and create social duties for adolescents. They begin to engage in short-lived affairs in search for a perfect companion. Family conflict may rise to the peak at this stage. Adolescents analyse their own activities and relate it to others', and grow in affection for others as the autonomous functioning of adolescents increases. According to Sanders, during *late adolescence* (18-21) adolescent develop a favourite identity from parents and often move from their parents to strive for adult's

status. At this stage, conflict with parents and siblings may decline. They also develop responsible behaviours as they form permanent relationships.

Similarly, the 2016 recommendation of American Academy of Paediatrics (AAP) as cited in Guram and Heinz (2018) indicated that adolescence is divided into 3 age groups – early (ages 11-14), middle (ages 15-17), and late (ages 18-21). These phases are accompanied with their own specific characteristics and tasks. The numerous developmental alterations that occur during this stage, in their view, will cause children anticipation and anxiety. Thus, knowing what to expect at various stages will facilitate healthy growth during adolescence and into early adulthood. It can be stated that individual differences in characteristics such as sensation seeking and impulsivity in adolescence contribute to risk behaviours that are exhibited. It is for such concept which defines adolescence to be generally thought of in 3 phases that the operational definition of adolescent in this present study involved individuals aged 10 to 21.

Adolescence and Body Image

Adolescence brings to the individual many changes, including physical and mental changes. Ata et al. (2007) argued that owing to rapid bodily changes that characterised adolescence, individuals at this stage mostly are preoccupied with body shape and weight. Duchesne (2017) also emphasised that body image becomes a priority for adolescents. The phrase *'Body Image'* was introduced in 1935 by Pual Schilder as a means describing an individual's general perception of their external or anatomical look and body function. (McDermott et al., 2015). Body image is a personal or subjective perception of the attractiveness and the attitude that an individual has towards their body (Nezlek, 1999). It is how people perceive their body when compared with predetermined societal standards.

Bhatt-Poulose et al. (2016) revealed that sense of appealing and fame are two foremost social indicators that todays' society promotes, probably due to the benefits that come with its possession (Olson & Marshuetz, 2005). According to Lanzkron, Carroll and Haywood (2013) people have the ambition to assess themselves. In terms of body image perception, people often compare themselves with what the society acknowledge as the ideal body type. Dissatisfaction often comes, when their image mismatches this standard (Lewallen & Behm-Morawitz, 2016). This self-evaluation process has been highly associated with external stimuli including the idealistic expectations of attractiveness by peers, parents and the society at large. Again, adolescents are rampantly exposed to more social media that promotes many representations of ideal modern beauty and body image (Derenne & Beresin, 2006). These experiences and exposure may sprout feelings of inadequacies or unhappiness for those whose bodies do not match such ideal body images.

Few studies reported that negative body image perception causes disordered eating, anxiety and depression (Dooley, Fitzgerald, & Giollabhui, 2015; Huang et al., 2007). The presence of chronic disease in the life of adolescents often cause negative body image perception, especially if the condition has debilitating effects on the physical body (Olmsted, Colton, Daneman, Rydall, & Rodin, 2008). Several studies found that persons with SCD often have delayed development, low nutritional status, and delayed skeletal and sexual growth due to the painful episodes and anorexia they experienced (Cepeda et al., 2000; Serjeant et al., 2001). They tend to have weight deficits which make them dissatisfied with their body (Adewoyin, 2015; Tusuubira, Naggawa, & Nakamoga, 2019; Zemel et al., 2007). Kate et al. (2011) established that young individuals with SCD have a high prevalence in body image displeasure but did not relate this dissatisfaction to a mental condition such as depression or suicidal

behaviours. In a study, Oyedeji (1995) recommended that body image and weight perception must be of the paramount importance of clinical consideration concerning adolescents with SCD due to maturational and other complications.

The associations of the ideal body size with beliefs show that promoting the normal-sized body as healthy might be a good way to influence ideals in this population. In a cross sectional study involving 370 adolescents from the Greater Accra Metropolitan Area in Ghana, although 64% adolescents preferred the normal weight ideal, the traditional preference for the overweight ideal was still present. Body size dissatisfaction was higher in adolescents who preferred overweight or underweight ideal. Both underweight and overweight adolescents reported teasing. Sexual attractiveness and health beliefs were predictors of body ideals, but beliefs on the role of lifestyle were not (Amenyah & Michels, 2016).

In a nutshell, literature points to the fact that adolescence is a period where an individual goes through many changes in life particularly physically, cognitively and socially. In this regard, this research seeks to identify mental conditions or challenges that adolescents must overcome for successful development. The presence of a chronic disease like SCD is likely to contribute to difficulties with this transitional phase of life. In Ghana, where there are abundant influence of western culture and young people are brainwashed to misleading acceptable appearance and look, it is deemed expedient to assess the body image among adolescents with sickle cell disorder. This is important especially as SCD takes much toll on the physical growth leading to negative body evaluation and consequent body dissatisfaction.

Self-Esteem among Adolescents

Self-esteem is a concept that is traced to a Scottish Philosopher, David Hume during the 18th Century. He was the first to show the idea that a person needs to value

and think well of him/herself as it motivates the person to aspire and achieve more (Morris & Brown, 2019). Self-esteem, a psychological construct, was published in the work of William James in 1892. In 1965, Morris Rosenberg, a social psychologist, explained self-esteem as a feeling of self-worth and the favourable and unfavourable attitude one has towards the self (Rosenberg, 1965). According to Adler and Stewart (2004), self-esteem describes how much a person values, approves of, appreciates, prizes, or likes him or herself. Wang and Ollendick (2001) stated that self-esteem involves an assessment of oneself followed by an emotional reaction towards oneself. Self-esteem has two aspects namely positive self-esteem and negative self-esteem. Negative self-esteem reflects an unfavourable judgement of oneself or self-rejection. In other words, it connotes the lack of satisfaction for oneself and the desire to be someone else (Rosenberg, 1989).

Essentially, self-esteem is a very important domain of psychology as it forecasts many outcomes such as academic achievement, happiness in life, marriage and work-related satisfaction (Baumeister, Campbell, Krueger, & Vohs, 2003; Orth & Robbins, 2014). Lin et al. (2008) revealed that an important period for developing self-esteem and self-identity is the adolescence stage and that low self-esteem can deteriorate adolescents' emotional regulation. Some studies reported that adolescents with low self-esteem exhibit negative health behaviours such as suicidal ideation, risky behaviours and early pregnancy (Asnani et al., 2014; Jaccard, Dogde & Guilamo-Ramos, 2005; Mahat & Scoloveno, 2001). Adolescents having poor self-esteem also have stronger sense of no or little hope and a lower level of resilience (Karatas & Cakar, 2011).

According to Morris and Brown (2019), high self-esteem among adolescent is associated with the ability to positively influence others, confidence to meet and deal

with new tasks, high tolerance level, low frustrations, acceptance early of responsibilities, correct assessment situations; ability to communicate positive feelings about themselves; good self-control and the belief that whatever happens to them are a direct result of their behaviour. A study observed that high self-esteem is a resilience towards life or positive adaptation (Moksnes & Espnes, 2012). A significant determinant of self-esteem among adolescents is body image perception (Duchesne et al., 2017). In other words, adolescents with above average self-esteem are mostly happy or delighted about the image of their body.

Mostly, chronic illnesses result in maturational delays and thus significantly impact body dissatisfaction and reduced self-esteem (Erskine, 2012). Adolescents with SCD are more likely to have low self-esteem because of the delayed physical growth and maturation. According to Sandstrom and Schanberg (2004), children with a chronic disease feel different from their peers and are often rejected by their peers. In such instances their self-worth may be affected, Pinquart (2013) reported that children with chronic disease protect their self-esteem by engaging in risky behaviours. In this study older adolescents are included in order to get a broader perspective to how body image affects their self-esteem. It is assumed that low self-esteem among adolescents will be closely associated with body dissatisfaction.

Conceptual Framework

The model below depicts the conceptual framework that guides the study.

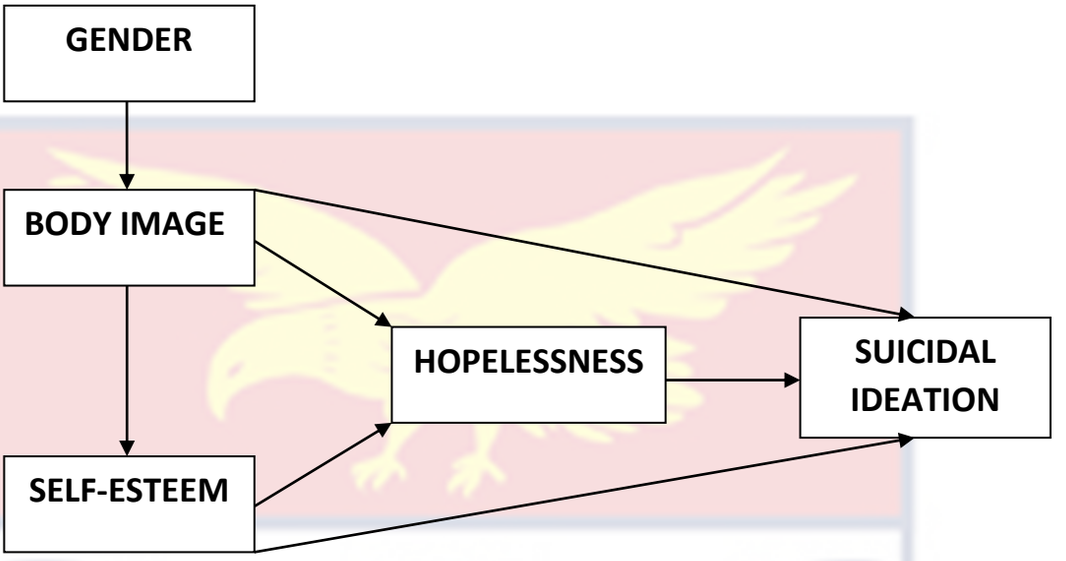

Figure 1: Hypothetical model showing the assumed relationship among Body Image, Self-esteem, Hopelessness and Suicidal Ideation.

Adolescents with sickle cell disorder are the target population. Figure 1 depicts the expected linkage among the study variables namely body image, self-esteem, hopelessness and suicidal ideation. In the study, body image is expected to have a direct relationship with self-esteem and suicidal ideation. Another expectation is that self-esteem will predict hopelessness. It is also assumed that hopelessness will mediate between the relation between body image and suicidal ideation. Lastly, gender is predicted to influence body image.

Theoretical Framework

Four theories/models guided this study and are discussed below.

1. Interpersonal Theory of Suicide (IPTS) (Joiner, 2007)
2. Erikson's Theory of Psychosocial Development (Erikson, 1963)
3. Ideal Self Discrepancy Theory (Higgins, 1987).
4. Biopsychosocial Model (Engel, 1977).

Interpersonal Theory of Suicide (IPTS) (Thomas Joiner, 2007)

IPTS was put forward by Thomas Joiner in 2005 (Joiner, 2007). Barzilay et al. (2015) reported that the model among the promising models founded in the last two decades. According to this theory, people attempt suicide because they are capable and have the will power. This theory posits that dangerous suicidal desire stems from three distinguished constructs namely: "*perceived burdensomeness, thwarted belongingness and capability for suicide".* In other words, the perception of being overburdened with bad events coupled with and lack of hope, leads to a dangerous desire for suicide. And the presence of such desires will warrant either lethal or near-lethal and fatal suicide.

According to Joiner (2007), *perceived burdensomeness* is the belief that an individual is extremely unproductive or useless such that the incompetence adversely distresses other people and society at large. Perceived burdensomeness includes incarceration, family conflict, unemployment and health problems as predictive factors of suicidal behaviour (Smith et al., 2012). It must be noted that this burdensomeness is perceived and maybe a false belief or exaggeration of the actual circumstances. These three negative life events are some of the experiences associated with restrictions and discomforts associated with sickle cell disorder. With these instances, an adolescent with SCD may become frustrated about such circumstance and engage in suicidal behaviour with the perceptions that they are a burden and incapable. Van Orden et al. (2010) proposed that the perceptions of burdensomeness stems from factors such as unstable family, unemployment, and disease. When left unresolved this burden may result in suicidal behaviours.

The construct of *thwarted belongingness* explains that lack of relationship and involvement highly predicts suicide thoughts and behaviour across the lifespan.

Humans are social beings and have a fundamental need to belong and be accepted. Consequently, when these basic needs are not met, they result in the desire and thoughts of suicide attempts, and fatalities across the lifespan (Cacioppo & Cacioppo, 2014; Turecki & Brent, 2016). In Van Orden et al.'s (2010) view, factors such as feelings of loneliness the absence of reciprocal human love and attention, lack of friends, unstable family, social isolation, and non-intact family are some dimensions of *thwarted belongingness.*

Acquired capability is developed after frequent experiences of painful occasions which lower our fear for death. Thus, when perceived burdensomeness and thwarted belongingness persist for an extensive period in an individual's life, their desire and ability of committing suicide heightens. Again, one's capacity to engage in suicidal behaviour is as a result of exposure to life experiences and not an innate tendency because naturally, humans fear death.

Based on these assertions, it could be deduced that adolescents with SCD may isolate themselves because of their perceived ideal appearance does not match their imagined or idealized person. As the condition may come with delayed growth or late maturation, anxiety over personal body image may crop up. In situations where negative verbal commentary and teasing are lashed out by family, peers or other valued social contacts such adolescents may experience low self-esteem and thwarted belongingness. The constructs of thwarted belongingness focus on social connectedness and as such loneliness may be a predictor of lethal suicidal behaviour. According to Baumeister and Leary (1995), if the fundamental human need for attachment is unmet, the individual's health is endangered including adjustment and wellbeing challenges. Belongingness has a strong impact on emotional patterns and

cognitive processes. Thus, social integration is relevant in improving one's wellbeing.

Van Orden et al. (2010) indicate that the acquired capability construct assumes that the possibility for suicidal behaviours arises because of an increased desire for suicide. The theory stipulates that people exhibit suicidal behaviours due to the development of suicidal ability. Such abilities are made up of increased physical pain tolerance and decreased fear of death, by habituation and activation of opponent processes, in response to repeated exposure to physically painful and fear-inducing experiences. Adolescents with SCD experience frequent painful crisis, hospitalizations as well as reported job loss. Additionally, growth and maturational delays are circumstances which they have no control over but have to live with, despite the discomfort contributing to body image dissatisfaction and increased hopelessness about their situation. The transition from childhood to adolescents and adulthood is accompanied by changes in body shapes and appearances affect body image satisfaction. As peers seek to fix the societal perception of an idealistic body propagated by the media, adolescent living with SCD likely to be affected. Living with the situation may toughen the adolescent's tolerance to physical and psychological pain while increasing their vulnerability and capability to ultimately commit suicide. Several studies that adopted the IPTS found that a significant relationship existed among feelings of incompetence and adverse life events on suicidal ideation (Joiner, Van Orden, Witte, & Rudd, 2009; Van Orden, Lynam, Hollar, & Joiner, 2006).

Erikson's Theory of Psychosocial Development (ETPD)

ETPD is one of the best-known theories of personality in psychology (Cherry, 2018). Erikson (1963) argued that the development of an individual depends

on eight interrelated psychosocial stages. The psychosocial theory of development argues that development of personality is largely influenced by social interactions throughout our lifetime. Each stage requires that the individual successfully makes efforts to deal with the crises presented (Greene, 2008). According to Greene, Graham and Morano (2010), the term crisis is not used in the usual sense, but rather refers to a time that fosters development by expanding the interconnections between self and the environment.

Erikson (1963) contended that people become masters or controllers of their immediate environment as they manage or eliminate the difficulties of each developmental stage of life. Between birth and one year of age, the first stage of ETPD takes place and it is the most fundamental stage in life which focuses on the issue of trust versus mistrust, the cornerstone of the healthy personality. (Erikson, 1956). If a child develops trust successfully, he or she will feel safe and secure in the world. Inconsistent, emotionally inaccessible, or rejecting caregivers contribute to feelings of mistrust in the children they care for. The inability of a child to gain the trust of families or caregivers makes them form beliefs of inconsistency and unpredictability of the world. Moreover, holding to such belief may lead to self-esteem challenges in the future as well as consequent thoughts of self-harm.

According to Sokol (2009), one of the main elements of Erikson's psychosocial stage theory is the development of ego identity. Ego identity is the conscious sense of self that we develop through social interaction (Adams & Marshall, 1996). Ego identity is constantly changing due to new experiences and information we acquire in our daily interactions with others. Adolescents explore their independence in varying roles, activities and behaviour to form or discover their identity or a sense of self. However, social relationships play important role in this

formation. Among the adolescent with sickle cell anemia, body image disturbances may arise from interactions between puberty and maturational timing. Similarly teasing by peers in developmentally sensitive periods may have a lasting effect on the adolescent thus affecting his/her identity. For instance, delay growth and restrictions in carrying out activities may pose a physical and psychological challenge. At each stage of development, ability to resolve the challenge that comes with the stage can help further improve or hinder the development of identity. Erik Erikson suggested that adolescents must adequately solve the crisis of identity versus role confusion. Rageliene (2016) asserted that a good stability of sense of identity is needed for the mental wellbeing of adolescents.

Furthermore, Cherry (2018) refers to identity as all of the values, principles, and standards which mold and direct peoples' actions. Cherry elucidated that the identity of a person arises from childhood experiences and reaches its peak during adolescence. Nevertheless, Erikson is of the view that identity formation is a continual process from cradle to the grave. In other words, one's identity serves as a guide to his living and subsequent experiences continue to shape the identity as he or she ages. Like Collings and Beautrais (2005), there is a possibility then that adolescents with SCD experience high risk for suicide thought because of the impact of the condition on their body thus negatively affecting the evaluation of their body. This coupled with the stress that they encounter while trying to forge their own identity may adversely affect them. DeHart (2019) believes that adolescents with SCD during the identity versus role confusion are at greater risk of suicidal thoughts owing to the loss of sense of their role and importance in their environment. The theory practically permits clinical health and mental workers to understand an

individual's life course and to decide the ways by which the person has navigated through these transitional periods.

Self-Discrepancy Theory (SDT) (Higgins, 1987)

SDT was propounded in 1987 by Edward Tory Higgins. SDT postulates that discrepancies between an individual's actual self and ideal or internalised self (created from experiences) are associated with emotional discomforts. The theory also explained the experience of distress as a result of inconsistencies or conflicting beliefs. Such unrealistic beliefs have the potential to result in adverse consequences on the person's well-being since the individual will end up belittling themselves and their capabilities. Self-discrepancy is the gap between an ideal and actual self that leads to negative emotions.

The self-discrepancy theory describes three basic domains of the self namely: actual self (the actual attributes of an individual and what that person believes he/she possesses*)*, ideal self (this is a representation of what the person wishes to possess or someone or wish you possess), and the ought self (this is a representation of what the person believes or someone believes they should possess). Ideally, people, prefer to close the gap between their actual self and their ideal or ought beliefs. If they fall short, any discrepancies may lead to specific emotional and motivational consequences.

The existing discrepancies in an individual's life may cause two major types of outcome. The first is the non-existence of positive consequences and linked with dejection-related sentiments. The other is the existence of negative consequences which has a linkage with emotions of agitation. According to Tangney, Niedenthal, Covert, and Barlow (1998), SDT has extensively been used in the treatment of

people with many psychological disorders as a result of undesired self-image and to researches and understanding of shame and guilt.

In the study, it is believed that dissimilarity between adolescents' real body image, preferred or ideal body image and unrealistic expectation of peers, parent and the society may affect self-esteem and lead to undesirable feelings like hopelessness and suicidal ideation. Having an elevated self-esteem is the crux of human's psychological structure may yield constructive consequences (Bahrami & Bahrami, 2015). Conversely, low self-esteem may yield meagre results in the life of an individual. This theory provides an understanding of how negative self-image or body image and the attitudes of close persons can affect one's self-esteem and cause psychological distresses.

Biopsychosocial Model (Engel, 1977)

Biopsychosocial model of health and illness is a comprehensive integrative approach that posits that the treatment and management of diseases and disorders should not solely focus on biological etiology of the condition. Santrock (2007) describes the model as a medical approach that associates the outcome of disease to the complex relationship among biological factors (genetic, biochemical, among others), psychological factors (mood, personality, behaviour, among others) and social factors (cultural, families, socioeconomic, medical, among others). According to Melchert (2007), these three dimensions of humans are not independent of each other but work interrelated. It is also based on the ideology that physical wellbeing is significantly affected by emotional and social factors. This model by Engel (1977) does not nullify the ancient belief that diseases and illness are largely caused by bacteria, fungi and viruses, but also advocate for the study of influential role of psychological and social influences on health and wellbeing.

Schonfeld and Dreyer (2008) indicated that the biopsychosocial model highlights the balancing influences that exist among hereditary, ecological factors, and attitude development. This model is a realistic model due to its consideration of the role of lifestyle in the onset and treatment of diseases. It has widened the narrow previously held view, medical model, that health and illness solely result from biological makeup. A biopsychosocial physician, during treatment aimed at understanding and treating illness from the patient's understanding of how the disease has impacted his/her life, instead of confining the diagnostic strategies to the disease and its pathological or biological cause (Hyman & Fleisher, 2011). A biopsychosocial practitioner recognises that the presence of symptoms stems from different factors. Instead of simply allotting symptoms to pathophysiology, the model expands the cause to interaction among biological, interpersonal, and environmental levels.

This implies that treatment and management of chronic disease such as sickle cell disease require the health practitioners to tackle the biological, psychological, and social impacts on patient's functioning. Lanzkron, Carroll and Haywood (2013) and Hamideh and Alvarez (2013) emphasised that patients with SCD now have improved lifespan but their mortality rate has reduced drastically. A critical period in the life of these individuals is a positive life transition from paediatric to adult care (Jordan, Swerdlow, & Coates, 2013). Given this, Crosby, Quinn, and Kalinyak (2015) reported that a well-coordinated transition to adulthood is required and thus a robust approach to the management of persons with SCD is required. This approach demands that health practitioners from different background related to SCD come together to devise proper management plan for SCD patients and adolescence. This is to ensure that the physical, mental and social influences associated with the disease

are appropriately captured in the management of SCD patients (Livingston, 1994; Taylor, Stotts, Humphreys, Treadwell, & Miaskowski, 2013). According to Armitage and Conner (2000) the biopsychosocial model fails to outline a direct, testable approach to clarify the relationship or causal effects by the biological, psychological, or social factors. However, it is worth noting that the model is a broad structure to guide theoretical and empirical exploration.

Empirical Review of Related Studies

In an attempt to understand the variables in the study, various studies were reviewed to obtain an in-depth knowledge of the relationship that has been established among these variables. The studies outcome and results will emanate from the research objectives, instrument and analyses of data. The review was categorised into sub-sections namely; body image among adolescents with SCD, influence of body image on self-esteem among adolescents with SCD, the influence of hopelessness on suicidal ideation among adolescents, and hopelessness, adolescents' body image and suicidal ideation.

Body Image among Adolescents with Sickle Cell Disorder

One challenge that adolescents face is body image dissatisfaction. This is further compounded if an adolescent is affected by a chronic disease that has physical manifestation such as Sickle Cell Disease (Ata et al., 2007; Olmsted et al., 2008). Bhatt-Poulose et al. (2016) conducted a study to identify the association among body image, weight perception, depression and suicidal attempts in SCD adolescents and their healthy peers in Jamaica. In the comparative study, 122 adolescents with SCD and 1,317 adolescents without SCD were involved. Findings revealed that no differences in terms of perceived and desired body images in the two

groups. Nonetheless, SCD adolescents scored less on body satisfaction when compared with those without the condition.

Another study by Kate et al. (2011) explored the perception of body image and its relationship with mental disorder (i.e., psychopathology) of adolescents with SCD in Nigeria. In the cross-sectional study survey, 136 adolescents with Sickle Cell Anaemia (SCA) and a control group were studied. Data were collected using questionnaires. In the study, it was found that as many as 55% (75) of adolescents with SCA were dissatisfied with their body. Only 13% (17) of the control group reported body image dissatisfaction.

In a similar vein, Pinquart (2013) conducted a meta-analysis to examine the body image of young people living with long-term health conditions. The study integrated results from 330 empirical investigations on body image of young people who have been diagnosed of a long-term ailment and those who do not have any disease of such. It was established that young people who were diagnosed of long-term diseases were dissatisfied with their body image compared to those with no ailment, however, the observed variation was very insignificant. Although Pinquart's study was not on an adolescent with SCD, the study provides relevant knowledge on body image perception among adolescents.

On the contrary, Cepeda et al. (2000) evaluated the linkage among maturational delays, self-esteem and body image in the United States. In the study, 30 adolescents battling with SCD and 30 control group or those with no SCD were engaged. Participants answered self-report questionnaires. Results of the study failed to establish a difference in body image perception between the study and the control group. Cepeda et al. argued that although the result indicated that adolescent with

SCD had impaired heights and weight when compared to their healthy peers, they were not outside the expected or normal variations.

Pelegrini et al. (2014) determined the body image displeasure, accompanying factors and dietary status of Brazilian adolescents. Findings revealed a very high prevalence of negative body image (71.4%). Though the study participants had no chronic disease, the results provide an insight to the views of adolescents concerning their body. One can deduce that majority of research argued that body image displeasure is very prevalent among adolescent with chronic disease when compared to their healthy peers. However, this assertion is subject to further empirical investigations in Ghana as few studies have been conducted on this relevant topic. This study, therefore, sought to assess body image satisfaction among adolescents with SCD in Ghana, where there is a paucity of studies on this phenomenon.

Influence of Body Image and Self-Esteem among Adolescents with SCD

Physical appearance is found to be an important determinant of confidence (Coyl, 2009). According to Clay, Vignoles and Dittmar (2005), dissatisfaction of one's body often diminish their self-worth and confidence. It is known that physical appearance is an important issue to adolescents' development of self-confidence (McCabe & Ricciardelli, 2005). Put differently, when adolescents are displeased or unhappy about their body, their self-esteem is more likely to be affected. Seligman (2006) opined that Erikson psychosocial theory emphasised that self-worth become prominent during adolescence. Gatti, Ionio, Traficante, and Confalonieri (2014) assessed the extent to which body image perception and gratification impact self-esteem of Italian adolescents. In the cross-sectional study, 242 adolescents between the ages 11 to 17 years completed a self-report scales on each of the variables. SEM

analyses showed that among the participants a good body image satisfaction predicted a level of self-esteem.

Another study by Duchesne et al. (2017) assessed the mediatory role of self-esteem on the linkage among body dissatisfaction and psychological distress in adolescents among French-speaking adolescents in Canada. A total of 409 adolescents (females = 58.4%) were involved in the study. Multiple regression analyses revealed that self-esteem mediate the relationship among body displeasure and indicators of both despair and anxiety were fully mediated by self-esteem. This means that, an undesirable thought that individuals have about their own body image has the propensity to lessen their self-esteem, and this also affects emotional distress. In essence, body image satisfaction has an impact on self-esteem.

Also, Szabó (2015) studied the link between body image and self-esteem. Szabó adopted the Figure Rating Scale and the Rosenberg Self-Esteem Scale (RSES) for data collection. Szabó's study revealed a significant positive correlation between body image and self-esteem. Again, the participants' whose perceived body image did not match their ideal body had a lower level of self-esteem. A similar study was conducted by Tiunova (2015) among Ukrainian adolescents. The cross-sectional study employed 250 adolescents from five middle schools. The results showed that body image among adolescents was a significant determinant of level or self-esteem and personal characteristics.

Notwithstanding these findings, Cepeda et al. (2000) found that no difference in body image perception and self-esteem existed among individuals with SCD and those without the condition. In the study, 60 participants (30 individuals having SCD and 30 control group) were engaged. Their ages ranged from 8-19 years. The Body Cathexis Inventory and Piers-Harris Self-Concept Scale were completed by the

participants. For all subjects, height, weight and Tanner's sexual development stage were obtained. It is probable that the small sample of 60 (30 adolescents with SCD and 30 without SCD) may have caused such results. The present study has considerations for a greater sample to ensure that the results represent the entire population to provide suitable recommendations that will improve the conditions of adolescents with SCD.

Influence of Hopelessness on Suicidal Ideation among Adolescents with SCD

According to Karatas and Cakar (2011) hopelessness and suicidal behaviours among adolescents is mostly caused by low self-worth and dissatisfaction of self. Baryshnikov et al. (2020) evaluated how feelings of hopelessness leads to suicidal thoughts among patients with mood disorders. The study enrolled 406 participants. Result indicated that suicidal thoughts is largely influenced by feelings of less hope. However, the authors found that severity of depressive symptoms may predict suicidal ideation more accurately than hopelessness.

In a related study, Stewart et al. (2005) conducted a cross-sectional and longitudinal study to examine hopelessness and suicidal behaviours of young individuals from two Asian contexts. A total of 2044 adolescents aged 14-18 years provided information regarding their suicidal ideation, depressive symptoms, and cognitions (self-efficacy, cognitive errors and hopelessness) at two surveys, six months apart. Using bivariate and multivariate models, results indicated that hopelessness was strongly associated with suicidal ideation. Similarly, Ahookhosh, Bahmani, Asgari, and Moghaddam (2017) examined the relationship among anxiety, depression, and hopelessness on family relationships and suicide ideation among adolescent suicidal attempters in Iran. In the study 120 adolescent with multiple

suicidal attempters were assessed. Results indicated that hopelessness, depression and anxiety were positively correlated with suicide ideation.

Whaling and Sharkey (2019) examined differences in prevalence rates of hopelessness and suicidal ideation of United States adolescents. Two random samples were created out of 1000 participants. It was established that hopelessness was related to suicidal ideation. In another review, Greydanus et al. (2010) explored suicide risk in adolescents with long-term diseases. The study focused on literature search carried out from 1999 to 2010. Results indicated that the presence of life long diseases result in depression among adolescents and predicts suicidal attitude in adolescents. Again, when the underlying factors of depression (disease) is not handled appropriately suicidal behaviours often increases. Similarly, Molock, Puri, Matlin and Barksdale (2006) found that hopelessness and depression significantly predict suicidal ideation and attempts among adolescents. Additionally, religious coping correlated with increased motives for existing.

Hopelessness, Body Image and Suicidal Ideation among Adolescents with SCD

Recently, empirical studies on the linkage among perceived body image and suicidal behaviours among adolescents has risen despite numerous risk factors documented. Several studies have found that hopelessness predicts suicide and suicidal ideations or behaviours (Baryshnikov et al., 2020; Stewart et al., 2005; Ahookhosh et al., 2017).

Li, Li, Wang and Bao (2016) examined the exceptional interconnection between three dimensions of parenting (parental warmth, behavioural and psychological controls) and suicidality among adolescents, and how hopelessness mediate these relationships. In all, 1529 Chinese adolescents answered the questionnaires. Results indicated that parental warmth was a negative predictor of

suicidality of adolescents, while psychological control positively predicted suicidality of adolescents. Also, parental warmth was a negative predictor of hopelessness, while psychological control predicted adolescent hopelessness negatively, and this improved adolescent suicidality. Even though behavioural control had no predictive effect on adolescent suicidality, it was a negative predictor of respondents' hopelessness, which enhanced their suicidality. All these findings indicate the differing roles of dimensions of parenting on adolescent suicidality as hopelessness mediated the relationship between parenting and adolescent suicidality.

Miranda, Tsypes, Gallagher and Rajappa (2013) studied the linkage between dysregulation and suicidal ideation, as well as whether ruminative thinking and hopelessness mediated the relationship. Young adults aged 18-25 years who have (n = 32) and do not have (n = 111) history of suicidal attempt answered a baseline measure of emotion dysregulation together with measures of rumination, hopelessness, depressive symptoms, and suicidal ideation after 2 or 3 years. Findings revealed that the strategies dimension, assessed at baseline, was significantly associated with both rumination and hopelessness at follow-up, and with higher ideation at follow-up. Rumination and hopelessness mediated the relation between Strategies and ideation, even when adjusting for depressive symptoms. This implies that perceived inability to access emotion regulation strategies may increase vulnerability to suicidal ideation through its effects on rumination and hopelessness.

Brausch and Muehlenkamp (2007) evaluated the linkage among body image and suicidal ideation. Participants were 231 adolescents from public schools in the United States. Regression analyses indicated that hopelessness, depression and body image were significant predictors of current suicidal behaviours for everyone in the sample. In the study, it was found that body image dissatisfaction predicted suicidal

ideation above the effects of depression, hopelessness and past suicidal behaviour. Likewise, Brausch and Gutierrez (2009) examined the role of body image and disordered eating as risk factors for depression and suicidal ideation in adolescents. In the study, 392 high school students were employed. Findings from Chi-square analyses indicated that body image satisfaction is indirectly associated with suicide ideation. Put differently, the linkage among body image perception and suicidal ideation was partially mediated by depressive symptoms.

The studies considered revealed a significant linkage among body image perception, psychological distress and suicidal ideation. According to Baryshnikov et al. (2020), hopelessness is an essential precondition for suicidal ideation in patients with depressive disorder**.** This study will consider the mediating effects of psychological distress (hopelessness) on the relationship between body image and suicidal ideation in order to find results representative enough to ensure improved quality of lives of adolescents with SCD.

Hopelessness, Self-Esteem and Suicidal Ideation among Adolescents with SCD

Few empirical investigations have found that hopelessness mediate self-esteem as well as other psychological variables, and suicidal ideation. For instance, Smith, Alloy and Abramson (2006) examined the relationship among cognitive styles, rumination, hopelessness and dysfunctional attitudes and suicidal ideation. Smith et al. employed a longitudinal approach to study 127 university students in the Cognitive Vulnerability to Depression (CVD) project over 24 months. In the CVD project, students without depression but who were at risk of depression were initially followed to forecast the beginning and future events of the disorder. Results indicated that rumination and hopelessness were predictors of suicidal ideation, and hopelessness partially mediated the relationship between rumination and suicidal

ideation. Also, hopelessness completely mediated the relationship between rumination and duration of suicidal ideation.

Vass et al. (2015) examined the concurrent and longitudinal influence of stigmatisation on recovery from psychosis, and the mediation effect of self-esteem and hopelessness in the relationship between stigmatisation and outcomes. Eighty psychotic service-users answered symptom (Positive and Negative Syndrome Scale [PANSS]) and subjective recovery measures (Process of Recovery Questionnaire) before and after six months, as well as the King Stigma Scale, the Self-Esteem Rating Scale and the Beck Hopelessness Scale at baseline. The results indicated that stigma was a predictor of symptomatic and subjective recovery, and the effects of stigma on the products were mediated by hopelessness and self-esteem. Vass et al. recommended that self-esteem and hopelessness need urgent consideration in interventions to lessen the effects of stigma, since interventions that address the current and enduring effects of stigma may positively affect outcome for psychotic individuals.

Chapter Summary

A review was performed to identify materials published in the last decade describing approaches and viewpoint in understanding adolescents with lingering illness such as SCD. Concept of adolescent and the linkage among adolescent and constructs including body image, self-esteem, hopelessness and suicidal ideation were relevant literature support. Theories propounded by pioneers of psychology and sociology including Thomas Joiner (2007), Erik Erikson (1963), Edward Tory Higgins (1987) and Engel (1977) on Interpersonal Theory, Psychosocial Development Theory, Ideal Self Discrepancy Theory and Biopsychosocial Theory

respectively. These theories give varying perspectives to expanding knowledge on adolescents and the bearing SCD presents on affected individuals' life.

CHAPTER THREE

RESEARCH METHODS

Introduction

This chapter discusses the methods and approaches used in conducting the study. These methods and approaches are discussed under sub-sections in this chapter. The sub-sections are research design, study area, population, inclusion and exclusion criteria, sample and sampling procedure, research instruments, pilot testing, ethical consideration, procedures for collecting data, validity and reliability, and data analysis.

Research Design

A research design is an overall strategy a researcher uses concerning the manner in which data will be collected, how and where to collect the information, and the approach or method for analysis the data taken (Babbie, 2007). It provides the structure that specifies the type of data to be gathered, the sources, data collection procedure and the statistical tools for analysis (Tobi & Kampen, 2018). It describes clearly the objectives derived from the research questions or hypotheses that specify the source, from which data will be collected, considering the constraints as well as the ethical issues. This study adopted a quantitative research approach. In essence, the study aimed at explaining the desired phenomenon under study through the collection of numerical data and analyzing them using mathematically or numerically based methods (Bacon-Shone, 2015).

More, specifically, the study's motive is addressing the impact of body image perception and self-esteem on hopelessness and suicidal ideation among adolescents with SCD in Cape Coast Metropolis. The cross-sectional survey design was adopted. A cross-sectional survey design measures and describes a phenomenon among a

population in a specific period of time (Wang & Cheng, 2020). Data is taken from a sample chosen to represent a population that a researcher wants to investigate. The aim is to determine the prevailing characteristics in that universal set at a time.

The cross-sectional study design was very suitable since the data enabled the researcher to determine the prevalence of body image dissatisfaction, its impact on self-esteem, hopelessness, and suicidal thoughts among adolescents with SCD. More specifically, the design is useful in estimating the burden of health conditions or disorders on a population and to facilitate decisions and strategies to alleviate such burden. This study aims to determine the psychological burden associated with body perception of adolescents with SCD. Additionally, the design was selected because of its ability to measure the relationship between variables. It enabled the recognition of trends and patterns in data collected.

Satia (2016) argued that a cross-sectional survey design has the advantage of being easy and faster to conduct and thus it is useful for planning, monitoring and evaluating public policies on a particular issue. The obvious advantages of cross-sectional study are the fact that prevalence of outcome of interest can be estimated and many risk factors and outcomes can be assessed at the same time. However, there are inherent disadvantages to the use of cross-sectional studies. Zangirolami-Raimundo, Echeimberg and Leone (2018) revealed that because the data in this survey method are collected in a specific moment, it is difficult to analyse associations and establish possible causal inference. Causal inference is impossible because the population is influenced by the time frame of the study.

Study Area

The study was conducted at the Cape Coast Teaching Hospital (CCTH) in Cape Coast Metropolis, Ghana. The CCTH is an ultra-modern health facility in the

central region and serves as a referral centre for varied chronic, infectious and other forms of diseases. With its quest to be countered among world-class and leading health care hubs, CCTH provides services such as general clinical consultations, specialized clinic care including sickle cell clinic, dermatology clinic, public health services, rehabilitation services, surgical services, etc. CCTH is located at the northern part of Cape Coast and shares boarders to the north, south, east and west by Abura, Pedu, Nkafua, and Pedu Estate respectively. Currently the Hospital has a bed capacity of 400 with over 600 health professionals. This health facility was chosen because of the availability of sickle cell clinic as well as serving as a referral centre where many cases of sickle cell patients can be obtained for the study.

Population

According to Majid (2018), a population of a study involves the target or universal group that an investigator expects to engage or gather information for the study. It is also a mass or the entirety of cases, items or collections complying with a specific study. According to Denscombe (2014), any group of people having one or more prevalent features of concern to the researcher may also be referred to as a population. All people of a specific sort or a more limited portion of that group may be the population.

The present study's target population was the set of SCD patients without any trace of other chronic diseases in the CCTH. This hospital was selected because the hospital serves as a referral centre for most cases of chronic diseases including sickle cell disease. Additionally, it has a separate clinic that cares for the needs of patients with SCD. According to the CCTH Statistical Unit (2020), the estimated number of adolescence (10 – 21 years) with SCD and receiving treatment at the hospital was 80 as of July 2020.

Inclusion and Exclusion Criteria

The study engaged adolescents with SCD from ages 10 and 21 years. Some studies (Duchesne et al., 2017; Ata et al., 2007) argued that body image is a serious public health issue that confront adolescents because of the quick physical alterations that characterise adolescence. For this reason, the study involved adolescents with SCD. Adolescents with no SCD and other forms of diseases were excluded from the study. This is because the presence of other long-lasting chronic ailments may contribute significantly to the experiences of psychological problem. This will confound result of the study and may reduce its authenticity. In order to avoid this, adolescents with SCD only were chosen.

Sample and Sampling Procedure

The smaller set taken out of the entire or universal group is known as a sample which in most cases, intended in a research study to represent the population (Gravetter & Forzano, 2009). Sample relates to the real number of elements chosen from the target population or people or instances. The sample is basically a population's subset, chosen as a representative of the bigger population (Acharya, Prakash, Saxena & Nigam, 2013).

Denscombe (2014) submitted that there are some instances where deriving a sample from the entire population is possible. According to Denscombe, it is advisable for researchers to obtain a sample when it is difficult to have a complete coverage of the population. Denscombe further stated that when the population is extremely large, it is economically sensible to obtain a sample from the population to minimize cost and utilization of experts (research assistants) required for the study. Based on this guidance and considering the size of the target population of 80 adolescents with SCD, engaging all the respondents was possible. This is because it

could increase the statistical power of the study. Moreover, it is possible to generalize the findings with a relatively small margin of error. Hence, the census method was employed to engage all adolescents with SCD receiving treatment at the CCTH. This method was appropriate because no sampling error could be detected since everybody was used.

Data Collection Instrument

A questionnaire was used in gathering data from participants in the study. The instrument consisted of five sections.

Demographic Characteristics

The researcher designed questions to gather data on respondents' demographic characteristics including age, gender and disorder genotype. Participants indicated the level at which each of these variables apply to them.

Body Esteem Scale for Adolescents and Adults (BESAA) (Mendelson, Mendelson, & White, 2001)

Body image perception of adolescents with SCD was assessed with the Body Esteem Scale for Adolescents and Adults (BESAA) developed by Mendelson et al. (2001). This scale was adopted. It is a 23-item self-report scale which followed a 5-point Likert type scale of measurement: 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Neither Agree or Disagree (N), 4 = Agree (A), and 5 = Strongly Agree (SA). Mendelson et al. (2001) indicated that the scale has three subscales namely Attribution, Weight, and Appearance. The Attribution subscale consists of 5 items, the Weight subscale has 8 items, and the Appearance contains 10 items.

A high score for the subscales showed a good or positive body image perceptions. When scoring all negative items are reversed scored. The subscales showed a very

high internal consistency. Cronbach's alpha is as follows: Appearance (0.92), Weight (0.81), and Attribution (0.94).

Rosenberg Self Esteem Scale (RSES) (Rosenberg, 1965)

The RSES was used to determine the adolescents' self-esteem. The RSES was adopted for this study. The self-report scale is made up of 10-item. Responses followed a 4-point Likert scale ranging from 1 (SD) to 4 (SD). Raw scores varied between 10 and 40. A score of 40 indicates that an individual has a high self-esteem whilst a mark of 10 suggests a significantly lower rating of self-esteem. Some studies (Damji, Clément, & Noels, 1996; Mimura & Griffiths, 2007; Rizwan, Aftab, Shah, & Dharwarwala, 2012). have reported that the RSES has a Cronbach alpha ranging from 0.71 – 0.99.

Hopelessness Scale for Children (HSC) (Kazdin, Rogers & Colbus, 1986)

This section examined hopelessness among adolescents. The Hopelessness Scale for Children (HSC) was adopted to accomplish this goal. The scale was originally developed by Kazdin, Rogers and Colbus (1986). The HSC is a 17-item self-report which consist of 17 interviewer-administered true-false items. The scale is a model on the Beck Hopelessness Scale and captures emotional state about the future, loss of motivation, and future expectations. "True" responses to the following items are scored as "1": For items 2, 8, 9, 10, 12, 13, 14, 15, and 17, "True" responses are scored as "1." For items 1, 3, 4, 5, 6, 7, 11, and 16, "False" responses are scored as "0." The higher the total score, the greater the hopelessness for the future. Again, the Hopelessness Scale for Children had adequate internal consistency (Cronbach's alpha = .97) as well as test-retest reliability (r = .52) following a 6-week interval has been previously reported with children (Kazdin et al., 1986). Spirito,

Williams, Stark, and Hart (1988) evaluated the scale among adolescent aged 13 to 17 and reported a good Cronbach alpha (.84).

Suicide Behaviour Questionnaire-Revised (SBQ-R) (Osman et al., 2001)

SCD adolescents' suicidal intentions were measured using the SBQ-R developed by Osman et al. (2001). It is a psychological self-report scale for identifying risk factors for suicide in young individuals. Amini-Tehrani et al. (2020) found that the scale is a reliable instrument for measuring suicidal risk among young people. This abridged scale contains four (4) items on suicidal behaviours and ideations over the past 12 months, suicide-related communication, and self-reported likelihood of any future suicidal behaviour. The first item measures the presence of suicidal thoughts and attempts; the second item measures the frequency of suicidal thoughts; the next item focuses on the level of threat of suicidal attempts, while the last item measures the probability of future suicidal attempts. The total score of SBQ-R ranges from 3 to 18, with higher scores indicating a higher risk of suicide. A score of less than 3 indicates non-suicidality. Osman et al (2001) reported 0.88 Cronbach's alpha reliability coefficient.

Pilot Testing

The instrument was piloted among adolescents with SCD who visited the Tema Teaching Hospital for sickle cell disorder review. Thirty adolescents were considered for the study. This is because the adolescents selected for the pilot testing had the same characteristics such as age, and clinically diagnosed with sickle cell disorder. Adolescents considered for the pilot study did not take part in the actual study.

The instruments in the study were adopted, the instruments are standardized measure for the target age group and no changes were made to the instruments. Prior

to the pilot testing, the instruments were given to colleagues to read through for any possible errors as a way of ensuring the instrument's face validity. Also, the instruments were vetted by my supervisors who are experts in the field for their views to ensure content validity of instruments. All suggestions that emerged before and after the pilot testing were incorporated in ensuring the appropriateness of the instruments for the actual study.

Table 1 shows the internal consistency estimates of the various scales that were used in the data collection. The results comprise that of the pilot test, and the main study. A sample of 30 sickle cell patients in the Tema Teaching Hospital participated.

Table 1- *Reliability Estimates of Scales/Sub-scales of the Questionnaire*

		Cronbach's Alpha Reliability	
Scale/sub-scale	No. of items	Pilot	Main study
Body Esteem Scale			
Appearance	10	.78	.76
Attribution	5	.81	.81
Weight	8	.90	.58
Overall	*23*	*.93*	*.83*
Self-esteem	10	.86	.81
Hopelessness	17	.88	.85
Suicidal Ideation	4	.74	.78

Source: Field survey (2020)

From Table 1, for the pilot test, the Cronbach alpha estimates for the various sub-scales of the questionnaire ranged from .74 to .93. With regard to the main study, the internal consistency estimates ranged from .58 to .85, with the Weight dimension of Body Esteem Scale having the least reliability. Pallant (2010), however, indicated that Cronbach value such as .50 is common where scales have fewer than 10 items. In line with the Weight dimension of Body Esteem Scale which has 8 items, an

internal reliability of .58 is deemed acceptable. Generally, it can be said that the reliability estimates of the scales were above .70 which show that there was less error emerging from among the items.

Ethical Consideration

Research ethics usually relates to the right laws or norms which distinguish acceptable from unacceptable behaviour in conducting a study. Researchers are responsible for safeguarding participants in their studies against damage (Resnik, Elliott & Miller, 2015). Ethical issues that guided the study are discussed below. I applied and sought for ethical clearance from the Institutional Review Board (IRB) in the University of Cape Coast (UCC) (see Appendix C). The clearance spelt out the entire protocol to be followed in the study.

Informed consent was sought from each participant. This was achieved by explaining the study's intent to them. Before the study, I described what the research is about to the participants and at the same time to seek their consent (i.e., permission) to participate in the study. By signing the consent form, the participant agreed to engage in the research (see Appendix D). They were also informed that they can halt or disengage themselves from the study due to any unforeseen circumstances. Since participants include minors' permission was taken from their respective parents or caregivers before they participated in the study. With every visit, the purpose of the study was discussed and other concerns of parents or guardian were resolved. With their permission and that of their child or ward, data collection was undertaken as well as those in their late adolescence.

The anonymity of respondents was highly considered in the study. This allowed the participants to have their identity concealed. Names and other details of participants that would be easily used to identify them were not taken. Additionally,

an ardent effort was carried out in maintaining the secrecy and privacy of participants' responses. Respondents were given the greatest assurance that their responses would be concealed and under no circumstances would their information be given to a third party without their concern. The data gathered from the questionnaire were translated to a softcopy and kept on a flash drive with a security code. Questionnaires were also kept under lock with keys which are kept securely by researcher in order to ensure data protection. Questionnaires will be kept till all necessary conditions of the study are fulfilled at UCC for the award of certificate. The flash drive data will be stored for a maximum period of five (5) years.

Data Collection Procedures

Permission to conduct the study was sought from the CCTH with an introductory letter from the Department of Education and Psychology (see Appendix B) and ethical clearance from the IRB of UCC. Upon approval, respondents were recruited from the sickle cell clinic where adolescents aged 10 to 21 were allowed to participate after signing to the form willingly. Permission was sought from the parents and guardians of minors (adolescents below 18 years) before they were engaged in the study.

The questionnaires were given to respondents to complete. Respondents who were unable to read were assisted by reading and explaining the questions to them. This was done professionally to avoid interfering with their answers. Informed consent and a participation leaflet, explaining the purpose of the study and assurance of confidentiality and anonymity were provided to respondents before the start of administration of questionnaires. The respondents used 15 minutes to complete the questionnaire. Approximately three months were used for data collection because of the time interval participants report for review. Participants were contacted on a

different range of time on their review days. After collecting the data, a response rate of 71 representing 88.75% of the total population was achieved.

Data Processing and Analysis

The data analysis employed the quantitative approach. First, the questionnaires were edited and coded by assigning numbers to each instrument of participants. This was to ensure accurate data entry. The intent of the preliminary screening was to ensure that respondents had adequately adhered to the instructions given and whether or every single item on the instrument have been answered appropriately to the researcher's satisfaction. Moreover, I numbered all the questionnaires that were to be used for the analysis for purpose of identifying them in case of any mistake. Operations from questionnaires were tabulated and processed using SPSS software version 25. Section A which gathered data on demographic characteristics was analysed descriptively using frequencies and percentages. These included the respondents' age, sex, religion and employment status.

Research question one was analysed using the descriptive statistics with responses of participants on the body esteem scale. Research hypothesis 1 was analysed using the one-way analysis of variance (one-way ANOVA). Research hypothesis 2 was analysed using simultaneous multiple linear regression while research hypothesis 3 was tested using simple linear regression analysis. Lastly, research hypotheses 4 and 5 were tested using mediation with Hayes PROCESS.

Chapter Summary

The theoretical and philosophical assumptions underlying the research methodology have been examined in this chapter. A discussion of the procedure, study participants, data collection and questionnaires outlined the specifics of how the study was conducted. A quantitative grounded methodology was used to develop

theory on the relationship between body image, self-esteem, hopelessness and suicidal ideation among adolescents with SCD. The purpose of Chapter 4 is to provide the study results of the analysis and demonstrate that the methodology described in Chapter 3 was followed.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

This study is to examine the effects of body image and self-esteem on hopelessness and suicidal ideation among adolescents with SCD. The focus of this chapter is the presentation of the results and its discussion. The chapter was organised into two folds. The foremost part outlines respondents' background information, whereas the next part presents the main results.

Demographic Characteristics of Respondents

The demographic information covered in this study include gender, age, marital status, level of education, and sickle cell disorder type. Table 2 outlines the results of respondents' demographic information.

Table 2: Distribution of Respondents based on Demographic Characteristics (N = 71)

Variable	Frequency	Percentage (%)
Gender		
Male	25	35.2
Female	46	64.8
Age		
10 – 14 years	12	16.9
15 – 17 years	18	25.4
18 – 21 years	41	57.7
Marital status		
Single	69	97.2
Cohabitation	1	1.4
Not applicable	1	1.4
Level of education		
Basic	14	19.7
Secondary	50	70.4
Tertiary	7	9.9
Type of sickle cell disorder		
Sickle Cell Anaemia (SS)	60	84.5
Sickle Hemoglobin-C (SC)	10	14.1
Others	1	1.4

Source: Field survey (2020)

Table 2, shows that 64.8% of the respondents were females while 35.2% were males. Additionally, 57.7% of the respondents were 18 – 21 years old. 25.4% were 15 -17 years old while 16.9% of the respondents were 10 – 14 years old. These age groups represent late, middle, and early adolescents, respectively. Nearly all the respondents; 97.2% were single while 1.4% of the respondents indicated that they are in cohabitations. The majority of the respondents (70.4%) reported to have had secondary education, 19.7% have had basic education, whereas, 9.9% have also had tertiary education. The results further indicate that majority (84.5%) of the respondents had Sickle Cell Anaemia (SS), 14.1% of respondents also had Sickle Hemoglobin-C (SC) disorder, 1.4% had other sickle cell condition.

Main Results

This part presents the main results. The results are presented in the order of the research questions and hypotheses. The study has one research question and five hypotheses.

Research Question

What is the body image of adolescents with sickle cell disorder?

This research question sought to determine the body image esteem of adolescents with sickle cell disorder. Body was assessed using the body esteem scale. Table 3 outlines the analysis of the results of the respondents on the dimensions of body image esteem.

Table 3: Dimensions of Body Image Esteem

Dimension	Score range	M	SD
Appearance	1 – 5	1.95	0.66
Attribution	1 – 5	2.05	0.84
Weight	1 – 5	2.03	1.09
Overall body esteem	1 – 5	2.01	0.75

Source: Field survey (2020)

Table 3 reveals that the respondents appear to have highest body esteem in terms of attribution (*M* = 2.05, *SD* = 0.84); followed by weight (*M* = 2.03, *SD* = 1.09); then appearance (*M* = 1.95, *SD* = 0.66). The overall body esteem was categorised into three, namely low, moderate, and high body esteem. Analysis of the results of respondents are presented in Table 4.

Table 4: Level of Body Image Esteem

Level	Range	Frequency	Percentage (%)
Low	0 – 1.99	35	47.3
Moderate	2.0 – 2.99	30	42.3
High	3.0 – 4.0	6	8.4
Total			100.0

Source: Field survey (2020)

Table 4 shows that the majority (47.3%) of the respondents had low level of body esteem, followed by those with moderate level (42.3%) and then high body esteem (8.4%). This indicates that the respondents in general are not satisfied with the body hence, the results reported.

Hypothesis 1

H_O: There will be no difference in body image of adolescents with sickle cell disorder for males and females.

H_1: There will be a significant difference in body image of adolescents with sickle cell disorder for males and females

This hypothesis purposed to examine the difference in body image with respect to male and female adolescents. Data on this research question were analysed using one-way multivariate analysis of variance (one-way ANOVA). The independent variable was gender, and it had two levels: male and female. The dependent variable, body image was in three-fold, which were the dimensions of body image esteem, namely, appearance, attribution, and weight. Prior to the

analyses, normality of body image esteem data was checked (see Appendix E). The normal Q-Q plots in Appendix E suggest the data were normally distributed in terms of appearance, attribution, and weight. Having assumed normality, the homogeneity of variance-covariance matrices assumption was checked. The results of Box's M test for variance-covariance was statistically significant, Box's M = 29.10, $F(6, 15907.36) = 4.59$, $p < .001$. This shows a violation of the assumption. Having violated this assumption, Pillai's Trace instead of Wilks's Lambda test was used. Table 5 presents the multivariate results.

Table 5: Multivariate Tests for Gender Difference in Body Image Esteem

	Value	F	df1	df2	Sig.	Partial Eta Squared
Intercept						
Pillai's Trace	.890	180.48	3	67	.000	.890
Wilks' Lambda	.110	180.48	3	67	.000	.890
Hotelling's Trace	8.081	180.48	3	67	.000	.890
Roy's Largest Root	8.081	180.48	3	67	.000	.890
Gender						
Pillai's Trace	.044	1.02	3	67	.391	.044
Wilks' Lambda	.956	1.02	3	67	.391	.044
Hotelling's Trace	.046	1.02	3	67	.391	.044
Roy's Largest Root	.046	1.02	3	67	.391	.044

Source: Field survey (2020)

Table 5, shows that there is no significant gender difference in the scores of the combined body image esteem for male and female adolescents with sickle cell disorder, Pillai's Trace V = .04, $F(3, 67) = 1.02$, $p = .391$, partial eta squared = .04. The Implication is that 4% of the variance in the combine body image esteem is attributed to gender. Individual univariate ANOVAs were performed using Bonferroni's alpha of .025. Table 6 outlines the results.

Table 6: Univariate Tests for Gender Difference in Body Image Esteem

Source	Dependent Variable	Df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	Appearance	1	243.668	552.565	.000	.889
	Attribution	1	260.074	372.970	.000	.844
	Weight	1	263.991	220.551	.000	.762
Gender	Appearance	1	.081	.183	.670	.003
	Attribution	1	1.410	2.023	.159	.028
	Weight	1	.073	.061	.806	.001
Error	Appearance	69	.441			
	Attribution	69	.697			
	Weight	69	1.197			
Total	Appearance	71				
	Attribution	71				
	Weight	71				

Source: Field survey (2020)

Using Bonferroni's alpha of .025, the data in Table 6 shows that there is no statistically significant gender difference in each of the dimensions of body image esteem: appearance, $F(1, 69) = 0.18$, $p = .670$, partial eta squared = .003; attribution, $F(1, 69) = 2.02$, $p = .159$, partial eta squared = .028; and weight, $F(1, 69) = 0.06$, $p = .806$, partial eta squared = .001. The results imply that 0.3%, 2.8%, and 0.1% of the variances in appearance, attribution, and weight are attributable to gender.

It can be said that male and female adolescents with SCD do not necessarily differ in their level of body image esteem. In other words, they perceive their body image in a similar manner. In this regard, the alternate hypothesis is rejected while the null hypothesis is maintained.

Descriptive Information on Self-esteem, Hopelessness, and Suicidal Ideation

This section provides a description information on levels of self-esteem, hopelessness, and suicidal ideation among adolescents with sickle cell disorder. Table 7 presents information on the results of the analysis of respondents on self-esteem.

Table 7: Level of Self-esteem

Level	Score range	Frequency	Percentage (%)
Low	0 – 14	51	71.8
Moderate	15 – 25	14	19.7
High	26 – 30	-	-
Not applicable		6	8.5
Total		71	100.0

Source: Field survey (2020)

Table 7 shows that 71.8% of the respondents had low level of self-esteem while 19.7% of the respondents had moderate level of self-esteem. Table 8 presents respondents' level of hopelessness. The scores of hopelessness ranged from 0 – 17, where higher scores depict higher level of hopelessness. The levels of hopelessness were further classified as low, moderate, and high. Table 8 highlights the results of the analysis of the respondents' hopelessness.

Table 8: Level of Hopelessness

Level	Score range	Frequency	Percentage (%)
Low	0 – 4	23	32.4
Moderate	5 – 8	13	18.3
High	9 – 17	31	43.7
Not applicable		4	5.6
Total		71	100.0

Source: Field survey (2020)

The results in Table 8 show that 43.7% of the respondents had high level of hopelessness, followed by those with low level of hopelessness (32.4%), then those of moderate level (18.3%). The results generally imply that the respondents think ill and perceive negative happenings about their future. Table 9 presents the results on suicidal ideation.

Table 9: Level of Suicidal Ideation

Level	Score range	Frequency	Percentage (%)
Low sensitivity	3 – 6	33	46.5
High sensitivity	9 – 18	37	52.1
Not applicable		1	1.4
Total		71	100.0

Source: Field survey (2020)

The scores on the suicidal ideation scale range from 3 – 18. It is evident from Table 9 that majority (52.1%) of the respondents have high sensitivity in terms of suicidal ideation. These results imply that the adolescents with SCD have a higher tendency in either committing suicide or attempting to commit suicide.

Subsequent hypotheses had self-esteem and suicidal ideation as dependent variables; therefore, it was necessary to test the normality of the aforementioned. Table 10 shows the results on the normality test.

Table 10: Test for Normality

Parameters	Self-esteem	Suicidal Ideation
Mean	22.73	7.06
Standard deviation	3.04	3.06
5% Trimmed mean	22.58	6.85
Median	23.0	7.0
Skewness	.958	.684
Std. Error	.299	.299
$Z_{skewness}$	3.20	2.29

Table 10 shows that the mean, median, and 5% trimmed mean of self-esteem and suicidal ideation are approximately the same, suggesting normality of the distributions for self-esteem and suicidal ideation. In addition, the Zskewness for self-esteem and suicidal ideation were within the ranges of ± 3.29. This also suggest the data were normally distributed. Further, the normal Q-Q plots of self-esteem and

suicidal ideation suggest they were normally distributed (see Appendix F). Having met the normality assumption, subjected to meeting other specific assumptions various statistical procedures, parametric test tools were employed to test the hypotheses.

Hypothesis 2

H_O: There will be no significant influence of body image on self-esteem of adolescents with sickle cell disorder.

H_1: There will be a significant influence of body image on self-esteem of adolescents with sickle cell disorder.

This hypothesis sought to examine the influence body image has on the self-esteem of adolescents with sickle cell disorder. Basically, this hypothesis tested the contribution of each of the dimensions of body image on self-esteem of the respondents. This hypothesis was tested using simultaneous multiple linear regression analysis. The predictor variables were the three dimensions of body image: appearance, attribution, and weight. The criterion variable was respondents' score on self-esteem. Table 11 presents the regression model summary.

Table 11: Overall Model Summary for Body Image and Self-esteem

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.383	.146	.104	2.85154	2.148

$F(3, 61) = 3.49$, $p = .021$

Table 11 shows that the overall regression model was statistically significant, $F(3, 61) = 3.49$, $p = .021$, Adjusted $R^2 = .104$. The result implies that appearance, attribution, and weight accounted for 10.4% of the variations in self-esteem. The Durbin-Watson's value was greater than 1.4 but less than 2.4, suggesting no auto correlation. Assumptions such as normality and linearity of residuals, and

homoscedasticity were adhered to (see Appendix G). Table 12 shows the regression coefficients for appearance, attribution, and weight.

Table 12: Influence of Body Image on Self-esteem

	Unst. Coef.		Std. Coef.			
Parameter	B	Std. Error	Beta (β)	T	Sig.	VIF
Constant	22.174	1.146		19.351	.000	
Appearance	-1.662	1.026	-.364	-1.620	.110	3.598
Attribution	2.125	.682	.590*	3.115	.003	2.564
Weight	-.295	.828	-.082	-.357	.723	3.789

*Significant, $p < .05$

The VIFs as shown in Table 12, were less than 10, and these indicate no violation of multicollinearity. The results further showed that among the three dimensions of body image, attribution was the only significant predictor of self-esteem, β = .59, p = .003. The result implies that the more adolescents with sickle cell make positive evaluations of their body and appearance based on what others say, their self-esteem enhances and becomes better. The results, however, showed that respondents' feelings about their appearance, β = -.36, p = .110; and satisfaction with body weight, β = -.08, p = .723; though were negative predictors, they were not statistically significant.

On the basis of the results, the working hypothesis that "There will be statistically significant influence of body image on self-esteem of adolescents with SCD was partially supported.

Hypothesis 3

H_O: There will be no significant influence of hopelessness on suicidal ideation among adolescents with sickle cell disease.

H_1: There will be a significant influence of hopelessness on suicidal ideation among adolescents with sickle cell disease.

The aim of this hypothesis was to determine the influence hopelessness has on suicidal ideation among adolescents with sickle cell disorder. This hypothesis was tested using simple linear regression analysis. The predictor variable was respondents' score on the hopelessness scale. The criterion variable was respondents' score on suicidal ideation. Both variables were measured on continuous bases. In addition, the normality of the distribution was met (see Table 10 & Appendix F). Table 13 shows the model summary.

Table 13: Overall Model Summary for Hopelessness and Suicidal Ideation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.593[a]	.352	.342	2.49965

$F(1, 64) = 34.73$, $p < .001$

The model containing hopelessness and suicidal ideation was statistically significant, $F(1, 64) = 34.73$, $p < .001$, adjusted $R^2 = .342$. The implication of the results is that, 34.2% of the variations in suicidal ideation is attributable to hopelessness. Table 14 presents the regression coefficient of hopelessness.

Table 14: Influence of Hopelessness on Suicidal Ideation

	Unstandardized Coefficients		Standardized Coefficients		
Parameter	B	Std. Error	Beta	T	Sig.
Constant	3.908	.615		6.354	<.001
Hopelessness	.419	.071	.593*	5.893	<.001

*Significant, $p < .05$

The results in Table 14 show that hopelessness is a significant positive predictor of suicidal ideation, $\beta = .42$, $p < .001$. That is, a standard deviation unit increase in hopelessness would lead to .59 standard deviation increase in suicidal ideation. The result shows a positive relationship between hopelessness and suicidal ideation. This generally implies that as patients with SCD have more negative

expectations about the future, the more likely they are to have suicidal ideations. Following the results, the null hypothesis that says "There will be no statistically significant influence of hopelessness on suicidal ideation among adolescents with sickle cell disease" was rejected in favour of its alternative hypothesis.

Hypothesis 4

H_0: Hopelessness will not mediate the relationship between body image and suicidal ideation among adolescents with sickle cell disorder.

H_1: Hopelessness will mediate the relationship between body image and suicidal ideation among adolescents with sickle cell disorder.

The focus of this hypothesis was to examine the mediating role of hopelessness in the relationship between body image and suicidal ideation. The predictor variable was body image. The criterion variable was suicidal ideation, and the mediator variable was hopelessness. All the variables were measured on continuous bases. This hypothesis was tested using the simple mediation with PROCESS by Hayes. The analysis was performed using 5000 bootstrap samples for percentile bootstrap confidence intervals. Table 15 presents details of the results.

Table 15: Regression Coefficients for Body Image and Hopelessness

		B	*SE*	*LLCI*	*ULCI*	Model Summary				
Model	Parameter					R^2	*F*	df1	df2	*p*
1	Constant	15.35	1.07	13.21	17.49	.49	61.88	1	64	<.001
	Body Image	-3.94*	.50	-4.94	-2.94					
2	Constant	7.68	1.69	4.29	11.06	.41	21.44	2	63	<.001
	Body Image	-1.29*	.54	-2.37	-.20					
	Hopelessness	.26*	.10	.07	.45					
3	Constant	11.65	.87	9.92	13.38	.34	32.51	1	64	<.001
	Body Image	-2.31*	.40	-3.12	-1.50					

Criterion: Model 1- Hopelessness; Model 2- Suicidal Ideation; Mode 3- Suicidal Ideation
*Significant, $p < .05$

Table 15 shows that the model 1, body image was statistically significant, $F(1, 64) = 61.88$, $p < .001$. Body image was a significant predictor of hopelessness, B = -3.94, *Boot 95%CI* [-4.94, -2.94]. In model 2, both body image, B = -1.29, *Boot 95%CI* [-2.37, -.20]; and hopelessness, B = -3.94, *Boot 95%CI* [-4.94, -2.94] are significant predictors of suicidal ideation. In model 3, body image was a significant predictor of suicidal ideation, B = -2.31, *Boot 95%CI* [-3.12, -1.50]. Table 16 presents the indirect effect (mediation).

Table 16: Indirect Effect, Direct Effect, and Total Effect of Body Image on Suicidal Ideation through Hopelessness

				Confidence Interval	
				Lower	Upper
	Effect	SE	*P*	Limit	Limit
Total effect of X on Y	-2.31*	.40	<.001	-1.50	-.75
Direct effect of X on Y	-1.29*	.54	.021	-2.37	-.20
Indirect effect of X on Y	Effect	*SE*	*BootLLCI*	*BootULCI*	
Hopelessness	-1.02*	.47	-2.10	-.22	

X-Body Image; Y- Suicidal Ideation
*Significant, $p < .05$

Table 16 shows that the direct effect of body image on suicidal ideation was statistically significant, B = -1.29, *Boot 95%CI* [-2.37, -.20]. Also, the indirect effect of body image on suicidal ideation through hopelessness was statistically significant, B = -1.02, *Boot 95%CI* [-2.10, -.22]. It was noticed that with the introduction of the hopelessness, the total effect of body image on suicidal ideation decreased further. The results generally imply that hopelessness mediates the relationship between body image and suicidal ideation. This therefore led to a decision of rejecting the null hypothesis which states that "Hopelessness will not statistically mediate the

relationship between body image and suicidal ideation among adolescents with sickle cell disease".

Hypothesis 5

H_0: Hopelessness will not mediate the relationship between self-esteem and suicidal ideation among adolescents with sickle cell disease.

H_1: Hopelessness will mediate the relationship between self-esteem and suicidal ideation among adolescents with sickle cell disease.

This hypothesis sought to determine whether hopelessness would mediate the relationship between self-esteem and suicidal ideation. This hypothesis was tested using the simple mediation with PROCESS by Hayes. The analysis was performed using 5000 bootstrap samples for percentile bootstrap confidence intervals. The criterion variable in the model was suicidal ideation, whereas the mediator variable was hopelessness. Self-esteem served as the predictor variable. All the variables were measured on continuous bases. Table 17 presents the results.

Table 17: Regression Coefficients for Self-esteem and Hopelessness

		B	*SE*	*LLCI*	*ULCI*	Model Summary				
Model	Parameter					R^2	*F*	df1	df2	*p*
1	Constant	5.47	4.19	-2.92	13.85	.004	.23	1	59	.631
	Self-esteem	.09	.18	-.28	.45					
2	Constant	7.77	2.39	2.99	12.54	.38	17.74	2	58	<.001
	Self-esteem	-.17	.10	-.38	.04					
	Hopelessness	.43*	.07	.28	.57					
3	Constant	10.09	2.93	4.22	15.96	.02	1.06	1	59	<.001
	Self-esteem	-.13	.13	-.39	.12					

Criterion: Model 1- Hopelessness; Model 2- Suicidal Ideation; Mode 3- Suicidal Ideation
*Significant, $p < .05$

Table 17 shows that the result in model 1 was not statistically significant, $F(1, 59) = .23$, $p = .631$. Self-esteem did not significantly predict hopelessness, B = .09, *Boot 95%CI* [-.28, .45]. In model 2, only hopelessness significantly predicted suicidal ideation, B = .43, *Boot 95%CI* [.28, .57]. In model 3, self-esteem was not a significant predictor of suicidal ideation, B = -.13, *Boot 95%CI* [-.39, .12]. Table 18 presents the results on the indirect effect (mediation).

Table 18: Indirect Effect, Direct Effect, and Total Effect of Self-esteem on Suicidal Ideation through Hopelessness

				Confidence Interval	
	Effect	SE	*P*	Lower Limit	Upper Limit
Total effect of X on Y	-.13	.13	.308	-.39	.12
Direct effect of X on Y	-.17	.10	.105	-.38	.04
Indirect effect of X on Y	Effect	*SE*	*BootLLCI*	*BootULCI*	
Hopelessness	.04	.07	-.09	.18	

X-Self-esteem; Y- Suicidal Ideation

Table 18 shows that the direct effect of self-esteem on suicidal ideation was not statistically significant, B = -.17, *Boot 95%CI* [-.38, .04]. The indirect effect of self-esteem on suicidal ideation, through hopelessness was not statistically significant, B = .04, *Boot 95%CI* [-.09, .18]. Further the total effect of self-esteem on suicidal ideation was not statistically significant, B = -.13, *Boot 95%CI* [-.39, .12]. Generally, the results imply that hopelessness did not mediate the relationship between self-esteem and suicidal ideation. Based on this, the null hypothesis that "Hopelessness will not statistically mediate the relationship between self-esteem and suicidal ideation among adolescents with sickle cell disorder" is upheld.

Discussion

The first part of this chapter presented the results of the study. This section provides the discussion of the results based on the research question and hypotheses.

Body Image of Adolescents with SCD

Research Question 1 sought to examine the body image of adolescents with SCD. Findings from this present study revealed that, respondents generally had low level of body image. This implies that adolescents with SCD were not satisfied with their body image. This is evident in their responses as they indicated that they did not like how they appear in pictures. Respondents were also of the view that their outlook would play significant role in their search for a job, suggesting that their maturity delays such as their small stature will make it difficult to secure a well-paying job irrespective of their capabilities. Moreover, adolescents with SCD indicated that their peers think that they have a bad outlook. Thus, such assertions contribute to their having bad or ill-thoughts about their own body. Practically, having low body image may predispose a person with SCD to have thoughts of committing harmful acts to self.

Even though, respondents were dissatisfied with their general body image, they appeared to have highest body esteem in terms of attribution; followed by weight; then appearance. Respondents' appearance and weight contributed greatly to their low body image. For instance, since adolescents with SCD usually have low weight, they think they do not have the desired looks that people of their age have and this may likely trigger the thoughts of having suicide and other unwelcoming ideas. The finding corroborates the findings of other previous studies (Kate et al., 2011; Pinquart, 2013, Pelegrini et al., 2014; Bhatt-Poulose et al., 2016).

For instance, Kate et al. (2011) found that more than half of the adolescents with SCA were dissatisfied with their body, with only a handful stating that they are satisfied with their body and how they looked. In a similar vein, Pinquart (2013) found that young people who were diagnosed of long-term diseases were dissatisfied with their body image compared to those with no ailment, however, the observed variation was very insignificant. Although Pinquart study was not on an adolescent with SCD, the study provides relevant knowledge on body image perception among adolescents.

Bhatt-Poulose et al., (2016) also found that adolescents with SCD scored less on body satisfaction when compared with those without the condition. A study by Pelegrini et al. (2014) also revealed a very high prevalence of negative body image among Brazilian adolescents. Though the study participants had no chronic disease, the results provide an insight to the views of adolescents concerning their body. A plausible reason for this finding where adolescents with SCD had low body image could be as a result of their age. Adolescents may lack the full mental capacity for handling psychological distresses that confront them unless they have counsellors or psychologists that they trust in order to confide in on any issue that may pose as challenges to them. Another explanation that could be given for this finding could be that, adolescents are most of the time moved by what their peers or age mates say than what other persons say. Essentially, what their peers say may be a true reflection of their body than what other group of people may submit.

Differences in Body Image of Male and Female Adolescents with SCD

Research Hypothesis 1 sought to examine whether any significant gender difference existed in body image of adolescents with SCD. Finding of the study revealed that there was no significant gender difference in the scores of the combined body image esteem for male and female adolescents with SCD. This implies that male and female adolescents with SCD do not necessarily vary in terms of their level of body image esteem. In other words, they both perceive their body image in a similar manner. A person having a health condition such as SCD may possess negative feelings or experiences in appraising their bodies irrespective of gender. For instance, just as a male adolescent with SCD may receive or interpret comments on his look from peers as demeaning so it is with a female adolescent with SCD. Finding of this study agrees with observations of some previous studies (Bhatt-Poulose et al., 2016; Cepeda et al., 2000).

For instance, Bhatt-Poulose et al., (2016) found that no difference in terms of perceived and desired body images in adolescents with SCD and those without SCD existed. Nonetheless, SCD adolescents score less on body satisfaction when compared with those without the condition. Cepeda et al. (2000) also found no difference in body image perception between the study and the control groups. Cepeda et al. argued that although the result indicated that adolescent with SCD had impaired heights and weight when compared to their healthy peers, they were not outside the expected or normal variations.

A possible reason that could be attributed to this finding is that, gender may not play any significant part in the way people who live with certain health conditions think about the way they look, especially those living with SCD. The SCD condition generally affects appearances and energy preventing adolescents from

doing physically demanding activities irrespective of their gender. Therefore, male and female adolescents with SCD having a similar low body image is highly probable.

Influence of Body Image on Self-Esteem of Adolescents with SCD

Hypothesis 2 sought to examine whether or not there was a significant influence of body image on self-esteem of adolescents with SCD. Finding of this study revealed that among the three dimensions of body image, attribution was the only significant predictor of self-esteem. The three dimensions of body image (appearance, attribution, and weight) accounted for 10.4% of the variations in self-esteem. This implies that the more adolescents with SCD make positive evaluations of their body and appearance based on what others say, their self-esteem enhances and becomes better. Respondents' feelings about their appearance and satisfaction with body weight although were negative predictors, they were not statistically significant. On a whole, since only one of the dimensions of body image (attribution) significantly predicted self-esteem, it can be deduced that body image is not a significant predictor of self-esteem. This finding is in disagreement with finding of other previous studies (Gatti et al., 2014; Duchesne et al., 2017; Szabó, 2015; Tiunova, 2015)

For instance, Gatti et al. (2014) found that a good body image satisfaction predicted a high level of self-esteem among Italian adolescents. Another study by Duchesne et al. (2017) also found that self-esteem was entirely mediated by the linkage among body displeasure as well as the manifestations of both depressive symptoms and anxiety disorder. Thus, one consequence of reducing self-esteem is having an undesirable view or thought about one's own body image, which in turn

affects psychological health. In essence, body image satisfaction has an impact on self-esteem of Canadian adolescents who speak French.

Szabó (2015) also found that there was a significant positive correlation between body image and self-esteem. Again, the participants whose perceived body image did not match their ideal body had a lower level of self-esteem. A similar study conducted by Tiunova (2015) also found that the body image among Ukrainian adolescents was a significant determinant of level of self-esteem and personal characteristics. The geographical locations or cultural contexts in which the aforementioned studies were conducted may have played significant roles in the findings. Culture may have possibly influenced the finding of this current study since the Ghanaian culture may differ from that of the studies reported. Another possible reason for the finding of this present study could be that, even though adolescents with SCD may have low body image resulting from negative perception about how others view them, their self-esteem or self-respect may not be affected in any way. This may be because, their self-esteem may not be an attribute that can be seen with the eyes by their peers or other people who may want to comment on it, unless they interact with them. And even if they interact with them, despite their having low body image they may still have high level of respect for themselves with total disregard to the body image or how they are seen by others.

Influence of Hopelessness on Suicidal Ideation of Adolescents with SCD

Hypothesis 3 sought to examine whether there will be any statistical influence of hopelessness on suicidal ideation among adolescents with SCD. Findings of the study revealed that hopelessness was a significant positive predictor of suicidal ideation and accounted for 34.2% of the variations in suicidal ideation. This implies that there was a positive relationship between hopelessness and suicidal ideation.

This practically suggests that as patients with SCD have more negative expectations about the future, the more likely they are to have suicidal ideations. Similarly, as adolescents with SCD have more positive life expectations, they tend to have less thoughts about committing suicide or self-damaging acts. For instance, if a person with SCD hopes that life will be better in the few years ahead, it is less likely that they will think of committing suicide. However, if an adolescent with SCD has no hope about getting what they strive to achieve in the future, then there will be a higher likelihood for them to consider committing suicide as an option.

Finding of this study is in congruence with other previous studies (Baryshnikov et al., 2020; Stewart et al., 2005; Ahookhosh et al., 2017; Whaling & Sharkey, 2019; Greydanus et al., 2010; Molock et al., 2006). For instance, Baryshnikov et al. found that suicidal thoughts are largely influenced by feelings of less hope. However, Baryshnikov et al. found that severity of depressive symptoms may predict suicidal ideation more accurately than hopelessness. Similarly, Stewart et al. (2005) found that hopelessness was strongly associated with suicidal ideation.

Ahookhosh et al. (2017) found that hopelessness, depression and anxiety were positively correlated with suicidal ideation among Iranian adolescents who attempted suicide. Moreover, Whaling and Sharkey (2019) found that hopelessness was associated with suicidal ideation of United States adolescents. Greydanus et al. (2010) also found that the presence of life long diseases results in depression among adolescents and predicts suicidal attitude in adolescents. Similarly, Molock et al. (2006) found that hopelessness and depression significantly predict suicidal ideation and attempts among adolescents.

The acceptable explanation that could be given to this finding could be that hopelessness may cause people with chronic health conditions such as SCD which

has no cure the thought of committing suicide as their last option. To such individual, committing suicide will end the psychological trauma, stigmatisations and the humiliations they go through daily. Taking a cue from this finding, perhaps psychological interventions that are designed to empower and provide coping skills will help effectively deal with hopelessness as it positively affects suicidal ideation among adolescents with SCD.

Mediating Effect of Hopelessness in the Relationship between Body Image and Suicidal Ideation of Adolescents with SCD

Hypothesis 4 sought to examine whether hopelessness will mediate the relationship among body image and suicidal ideation of adolescents with SCD. Findings of the study revealed that hopelessness mediated the relationship between body image and suicidal ideation. This means that with the introduction of the hopelessness, the total effect of body image on suicidal ideation decreased further. In other words, hopelessness further compounds the negative effect of body image which indirectly affect suicidal ideation. It can also be said that with the presence of hopelessness, an individual with negative perception about others finding him attractive may have a high self-harm ideation. An example of this is depicted in a scenario where individuals think their appearance will not help them get a job and feels that there is no hope that their appearance will improve in the future or anytime soon. Subsequently, the individual will have more suicidal thought as a result of the experiences of despair than when compared to the suicidal thought they could have had with only low body image resulting from negative attributions. Finding of the present study is similar to other previous studies (Li et al., 2016; Miranda et al., 2013; Brausch & Gutierrez, 2009).

Li et al. (2016) found that parental warmth was a negative predictor of suicidality of adolescents, while psychological control positively predicted suicidality of adolescents. Also, parental warmth was a negative predictor of hopelessness, while psychological control predicted adolescent hopelessness negatively, and this improved adolescent suicidality. Even though behavioural control had no predictive effect on adolescent suicidality, it was a negative predictor of respondents' hopelessness, which enhanced their suicidality. This finding indicates the differing roles or dimensions of parenting on adolescent suicidality as hopelessness mediated the relationship between parenting and adolescent suicidality.

Miranda et al. (2013) also found that rumination and hopelessness mediated the linkage among strategies and ideation, even after manipulating the effect of depressive symptoms. This implies that perceived failure to access emotion regulation strategies can increase susceptibility to suicidal ideation by its effects on rumination and hopelessness. Brausch and Gutierrez (2009) also found that body image satisfaction is indirectly associated with suicide ideation. In other words, the relationship between body image perception and suicidal ideation was partially mediated by depressive symptoms.

A possible reason that may have accounted for this finding of the present study could be the detrimental effect that low body image(attribtion) and hopelessness have on the suicidal ideation of people with SCD. When adolescents with SCD have the thought that other people do not consider them good looking and at the same time are hopeless about the situation improving, they are inclined to have thoughts of harming themselves or committing suicide.

Mediating Effect of Hopelessness in the Relationship Between Self-Esteem and Suicidal Ideation of Adolescents with SCD

Hypothesis 5 sought to examine whether the existence of no hope will mediate the relationship between self-esteem and suicidal ideation of the adolescents with SCD. Finding of the study revealed that hopelessness did not mediate the relationship between self-esteem and suicidal ideation. This implies that with the introduction of hopelessness, self-esteem had no indirect effect on suicidal ideation. This finding contradicts the finding of other studies (Smith et al., 2006; Vass et al., 2015).

For instance, Smith et al. (2006) found that rumination and hopelessness were predictors of suicidal ideation, and hopelessness partially mediated the relationship between rumination and suicidal ideation. Also, hopelessness fully mediated the relationship between rumination and duration of suicidal ideation. Vass et al. (2015) also found that stigma was a predictor of suggestive and independent recovery, and the effects of humiliation on the products were facilitated by having no hope and self-esteem. Vass et al. recommended that self-esteem and hopelessness need urgent consideration in interventions to lessen the effects of humiliation, since interventions or programmes that address the current and enduring effects of stigma may constructively affect consequences for psychotic individuals.

An acceptable explanation for this finding could be that the self-esteem of adolescents with SCD does not lead to having suicidal thoughts even if they feel hopeless about certain situation or happenings in their lives.

Chapter Summary

Findings of the present study revealed that, respondents generally had low level of body image. They however, appeared to have highest body esteem in terms

of attribution; followed by weight; then appearance. There was no significant gender difference in the scores of the combined body image esteem for male and female adolescents with SCD. This implies that male and female adolescents with SCD do not necessarily differ in their level of body image esteem. In other words, they perceive their body image in a similar manner.

The study further revealed that, among the three dimensions of body image, attribution was the only significant predictor of self-esteem. The three dimensions of body image (appearance, attribution, and weight) accounted for 10.4% of the variations in self-esteem. This implies that the more adolescents with SCD make positive evaluations of their body and appearance based on what others say, their self-esteem enhances and becomes better. Respondents' feelings about their appearance and satisfaction with body weight although were negative predictors, they were not statistically significant.

Moreover, hopelessness was a significant positive predictor of suicidal ideation and accounted for 34.2% of the variations in suicidal ideation. This implies that there was a positive relationship between hopelessness and suicidal ideation. This practically implies that as patients with SCD have more negative expectations about the future, the more likely they are to have suicidal ideations. Additionally, hopelessness mediated the relationship between body image and suicidal ideation. This means that with the introduction of the hopelessness, the total effect of body image on suicidal ideation decreased further. Finally, hopelessness did not act as a mediator in the relationship between self-esteem and suicidal ideation.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter consists of the summary, conclusions and recommendations for further research. The summary segment briefly describes the processes that were used in conducting this research. Discussions and conclusions drawn based on the result of the study are given. Researcher recommendations are discussed including suggestions on how to improve the body image of adolescents with sickle cell disorder which in turn influences the hopelessness and suicidal ideations.

Summary

Overview of the Study

The study examined the effect of body image and self-esteem on the state of hopelessness and suicidal ideation among adolescents with SCD in Cape Coast Metropolis, Ghana. A descriptive survey design approach was used for the study. Using census, all 80 adolescents diagnosed of sickle cell anaemia who were receiving treatments at the Cape Coast Teaching Hospital were considered for the study. Statistical procedures adopted in the data analysis were frequencies and percentages. Also, inferential statistics of one-way ANOVA, regression and mediation with PROCESS by Hayes were used.

Key Findings

The following were realised as the study's key findings:

1. Respondents generally had low level of body image. They however, appeared to have highest body esteem in terms of attribution; followed by weight; then appearance.

2. There was no significant gender difference in the scores of the combined body image esteem for male and female adolescents with SCD. This implies that male and female adolescents with SCD do not necessarily differ in their level of body image esteem. In other words, they perceive their body image in a similar manner.
3. Among the three dimensions of body image, attribution was the only significant predictor of self-esteem. The three dimensions of body image (appearance, attribution, and weight) accounted for 10.4% of the variations in self-esteem. This implies that the more adolescents with SCD make positive evaluations of their body and appearance based on what others say, their self-esteem enhances and becomes better. Respondents' feelings about their appearance and satisfaction with body weight though were negative predictors, they were not statistically significant.
4. Hopelessness was a significant positive predictor of suicidal ideation and accounted for 34.2% of the variations in suicidal ideation. This implies that there was a positive relationship between hopelessness and suicidal ideation. This practically implies that as patients with SCD have more negative expectations about the future, the more likely they are to have suicidal ideations.
5. Hopelessness mediated the relationship between body image and suicidal ideation. This means that with the introduction of the hopelessness, the total effect of body image on suicidal ideation decreased further.
6. Hopelessness did not act as a mediator of the relationship between self-esteem and suicidal ideation.

Figure 2 below shows the final framework based on the finding of the study.

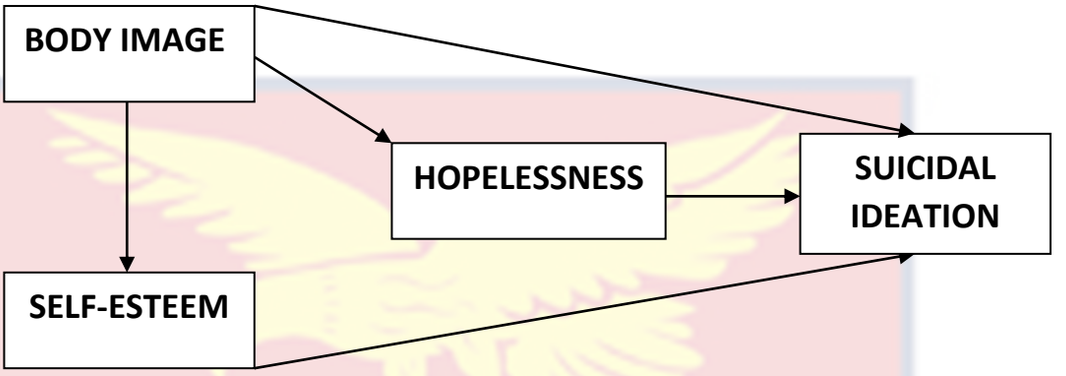

Figure 2: Final model showing the relationship among Body Image, Self-esteem, Hopelessness and Suicidal Ideation.

Conclusions

Subsequent to the findings from this study, it can be concluded that adolescents who have SCD were not pleased or happy about their body image as they have poor personal thought about how they look and how others perceive their appearance. Moreover, both male and female adolescents with SCD perceived their body image in similar way. There was no significant difference in body image among adolescents with SCD in terms of gender. I further deduce from the findings that as adolescents with SCD make more positive evaluations of their body and appearance based on what others say, their self-esteem enhances and becomes better.

Again, as adolescents with SCD have more negative expectations about their future, the more likely they are to have suicidal ideations. Similarly, as adolescents with SCD have more positive expectations about the future, they tend to have less thoughts about committing suicide or engaging in self-damaging acts. Thus, with the presence of hopelessness, an individual with negative body image may have suicidal ideation. However, self-esteem among adolescents with SCD does not lead to having

suicidal thoughts even if they feel hopeless about other life situations or happenings in their lives.

Recommendations

As a follow up to the findings of the present study, I recommend the following:

1. There should be increased training by the Cape Coast Teaching Hospital (CCTH) to equip counsellors and clinical health psychologists in order to adequately provide counselling services. Such services that will help adolescents with chronic conditions such as SCD develop healthier adaptive skills to thrive in the turbulent period that adolescence is presented with. Communicating with trusted adults about their emotional distress and sharing suicidal thoughts is a way of finding support for teenagers at risk of suicide. Such an effort will lead to life saving intervention provided by well-trained health expert.
2. Psychological intervention programmes and policies that target the reduction or elimination of low body image among adolescents living with chronic health conditions such as SCD should take into consideration their gender, since such individuals may have similar characteristics or perceptions.
3. Health experts such as clinical health psychologists should provide interventions that are tailored at increasing the coping skills of adolescents with SCD and other long-term health conditions. They should relentlessly consider empowering adolescents with skills or strategies that fit in our Ghanaian culture with the awareness that they are not merely bodies but also they have many other valuable attributes that are intrinsic to their self-image.
4. Psychological interventions that are being designed to improve the suicidal ideations of adolescents with SCD should consider empowering them to deal

effectively with hopelessness as it positively affects suicidal ideation among adolescents with SCD.

5. It would be important to include family and peer group education due to their strong influence on the formation of ideal body type among adolescents. Knowledge of their contribution to the unhealthy thought pattern of adolescents with SCD will help improve their attitude towards such adolescents.
6. Administrators of CCTH are encouraged to intensify access to holistic healthcare by engaging expertise of other clinical fields such as clinical health psychologists who will address social and psychological triggers to mental health conditions. Such effort will help to reduce the burden on the limited physicians in health care provision. The collective work of health experts will help reduce suicidal thoughts among young individuals with SCD including those with other long-term health conditions.

Suggestion for Further Studies

1. Future studies should include adolescents with SCD from other hospitals in other geographical locations in Ghana to further understand the phenomena from a geographical context.
2. Future studies should consider employing a qualitative method in exploring the linkage among body image distortion, hopelessness and suicidal ideation in deriving a richer and deeper understanding regarding the lived experiences of adolescents who have SCD. This will increase having a first-hand experience of the individual with sickle cell disorder.
3. Also, future studies should use a nationally representative data for a more robust finding.

4. Furthermore, future studies should explore other psychological variables (such as loneliness, depression and anxiety) that could potentially influence the suicidal ideation among adolescents with SCD.

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APPENDICES

APPENDIX A

UNIVERSITY OF CAPE COAST

SCHOOL OF GRADUATE STUDIES AND RESEARCH

RESEARCH QUESTIONNAIRE

This questionnaire is part of **a study assessing the impact of body image and self-esteem on hopelessness and suicidal ideation among adolescents in the Cape Coast Metropolis.** The results of this research, based on your responses will be presented to the School of Graduate Studies, University of Cape Coast. This exercise is mainly for academic purpose and your anonymity and confidentiality is strictly assured. You will be contributing immensely towards the success of the research and knowledge if you answer these questions as frankly as possible. Thank you for your assistance.

Researcher Contact Number: 0246663886

E-mail Address: amenyihececilia@gmail.com

SECTION A

DEMOGRAPHIC VARIABLES

Please tick (√) the correct answer to the following questions as they apply to you.

1. Gender: Male [ ] Female [ ]
2. What is your age?.....
3. Marital status

   Single [ ] Married [ ] Separated [ ] Divorced [ ]

   Cohabitation [ ]
4. Educational level of the respondent

   None [ ] Basic [ ] Secondary [ ] Tertiary [ ]

5. Place of Residence ……

6. Respondent sickle cell disorder type

Sickle Cell Anaemia (SS) [ ] Sickle Hemoglobin-C (SC) [ ]others (specify).....

SECTION B

The Body Esteem Scale for Adolescents and Adults (BESAA)

Please tick (√) in the box under the column that is descriptive of the extent to which you agree or disagree to the following statements using the following: 0=Never; 1=Rarely; 2= Often; 3=Everytime; 4= Always

No.	ITEMS	0	1	2	3	4
1.	I like what I look like in pictures.					
2.	Other people consider me good looking.					
3.	I'm proud of my body.					
4.	I am preoccupied with trying to change my body weight.					
5.	I think my appearance would help me get a job.					
6.	I like what I see when I look in the mirror.					
7.	There are lots of things I'd change about my looks if I could.					
8.	I am satisfied with my weight.					
9.	I wish I looked better.					
10.	I really like what I weigh.					
11.	I wish I looked like someone else.					
12.	People my own age like my looks.					
13.	My looks upset me.					
14.	I'm as nice looking as most people.					
15.	I'm pretty happy about the way I look.					

16.	I feel I weight the right amount for my height					
17.	I feel ashamed of how I look.					
18.	Weighing myself depresses me.					
19.	My weight makes me unhappy.					
20.	My looks help me to get dates.					
21.	I worry about the way I look.					
22.	I think I have a good body.					
23.	I look as nice as I would like to.					

SECTION C

The Rosenberg Self Esteem Scale (RSES)

Please tick (√) in the box under the column that is descriptive of the extent to which you agree or disagree to the following statements using the following: 0=Strongly Disagree (SD); 1= Disagree (D); 2=Agree (A); 3= Strongly Agree (SA).

No.	ITEMS	SD	D	A	SA
1.	On the whole, I am satisfied with myself.				
2.	At times I think I am no good at all.				
3.	I feel that I have a number of good qualities.				
4.	I am able to do things as well as most other people				
5.	I feel I do not have much to be proud of.				
6.	I certainly feel useless at times.				
7.	I feel that I'm a person of worth, at least on an equal plane with others.				
8.	I wish I could have more respect for myself.				
9.	All in all, I am inclined to feel that I am a failure.				
10.	I take a positive attitude toward myself.				

SECTION D

The Hopelessness Scale for Children (HSC)

Please tick (√) in the box under the column the extent to which the following statements is true or false about you.

No.	ITEMS	TRUE	FALSE
1.	I want to grow up because I think things will be better.		
2.	I might as well give up because I cannot make things better for myself.		
3.	When things are going badly, I know they will not be as bad all of the time.		
4.	I can imagine what my life will be like when I am grown up		
5.	I have enough time to finish the things I really want to do		
6.	Someday, I will be good at doing the things that I really care about.		
7.	I will get more of the good things in life than most other kids.		
8.	I do not have good luck and there is no reason to think I will when I grow up		
9.	All I can see ahead of me are bad things, not good things.		
10.	I do not think I will get what I really want.		
11.	When I grow up, I think I will be happier than I am now.		
12.	Things just will not work out the way I want them to.		
13.	I never get what I want, so it is dumb to want anything.		
14.	I do not think I will have any real fun when I grow up.		
15.	Tomorrow seems unclear and confusing to me.		
16.	I will have more good times than bad times.		
17.	There is no use in really trying to get something I want because I probably will not get it.		

SECTION E

Suicide Behaviour Questionnaire—Revised (SBQ-R)

Instructions: Please **Circle** the number beside the statement or phrase that best applies to you.

A. Have you ever thought about or attempted to kill yourself? (Circle one only)

1. Never

2. It was just a brief passing thought

3a. I have had a plan at least once to kill myself but did not try to do it

3b. I have had a plan at least once to kill myself and really wanted to die

4a. I have attempted to kill myself, but did not want to die

4b. I have attempted to kill myself, and really hoped to die

B. How often have you thought about killing yourself in the past year? (Circle one only)

1. Never

2. Rarely (1 time)

3. Sometimes (2 times)

4. Often (3-4 times)

5. Very Often (5 or more times)

C. Have you ever told someone that you were going to commit suicide, or that you might do it? (Circle one only)

1. No

2a Yes, at one time, but did not really want to die

2b Yes, at one time, and really wanted to die

3a Yes, more than once, but did not want to do it

3b Yes, more than once, and really wanted to do it

D. How likely is it that you will attempt suicide someday? (Circle one only)

0. Never

1. No chance at all

2. Rather unlikely

3. Unlikely

4. Likely

5. Rather likely

6. Very likely

APPENDIX B

INTRODUCTORY LETTER

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF EDUCATIONAL FOUNDATIONS
DEPARTMENT OF EDUCATION AND PSYCHOLOGY

Telephone: 0332091697
Email:dep@ucc.edu.gh

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref:

Your Ref:

13th August, 2020

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

LETTER OF ATTESTATION: MS. CECILIA AMENYIHE

We introduce to you Ms. Amenyihe, a student from the Department of Education and Psychology, University of Cape Coast. She is pursuing a Master of Philosophy Degree in Clinical Health Psychology.

Ms. Amenyihe is researching on the topic: **THE IMPACT OF BODY IMAGE AND SELF-ESTEEM ON SUICIDAL IDEATION AMONG YOUNG PEOPLE WITH SICKLE CELL DISORDER: THE MEDIATING ROLE OF HOPELESSNESS.**

Ms. Amenyihe has a pleasant disposition, her relationship with her colleagues and lecturers is very good. She is morally up right and displays high emotional intelligence.

We request that she is given the maximum assistance and support.

Thank you.

Yours faithfully,

Dr Mark Owusu Amponsah
HEAD

APPENDIX C

ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
ETHICAL REVIEW BOARD

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: CES-ERB/ucc.edu/V4/20-45

Date: 6th July, 2020

Your Ref: .....

Dear Sir/Madam,

ETHICAL REQUIREMENTS CLEARANCE FOR RESEARCH STUDY

The bearer, Cecilia Amenyihe ..., Reg. No EF/CHP/18/0008... is an M.Phil. / ~~Ph.D~~. student in the Department of Education and Psychology ... in the College of Education Studies, University of Cape Coast, Cape Coast, Ghana. ~~He~~ / She wishes to undertake a research study on the topic:

Impact of body image and self-esteem on suicidal ideation among adolescents with sickle cell disorder: Mediating role of hopelessness

The Ethical Review Board (ERB) of the College of Education Studies (CES) has assessed ~~his~~/her proposal and confirm that the proposal satisfies the College's ethical requirements for the conduct of the study.

In view of the above, the researcher has been cleared and given approval to commence ~~his~~/her study. The ERB would be grateful if you would give ~~him~~/her the necessary assistance to facilitate the conduct of the said research.

Thank you.
Yours faithfully,

Prof. Linda Dzama Forde
(Secretary, CES-ERB)

Chairman, CES-ERB
Prof. J. A. Omotosho
jomotosho@ucc.edu.gh
0243784739

Vice-Chairman, CES-ERB
Prof. K. Edjah
kedjah@ucc.edu.gh
0244742357

Secretary, CES-ERB
Prof. Linda Dzama Forde
lforde@ucc.edu.gh
0244786680

In case of reply the reference number and the date of this Letter should be quoted

Our Ref.: CCTH

Your Ref.:

P. O. Box CT.1363
Cape Coast
CC-071-9967
Tel: 03321-34010-14
Fax: 03321-34016
Website: www.ccthghana.org
email: info@ccthghana.com

23rd July, 2020

Cecilia Amenyihe
Department of Education and Psychology
University of Cape Coast
Cape Coast

Dear Madam,

ETHICAL CLEARANCE – REF: CCTHERC/EC/2020/069

The Cape Coast Teaching Hospital Ethical Review Committee (CCTHERC) have reviewed your research protocol titled, "***Impact Of Body Image And Self Esteem On Suicidal Ideation Among Adolescents With Sickle Cell Disorder: Mediating Role Of Hopelessness***" which was submitted for Ethical Clearance. The ERC is glad to inform you that you have been granted provisional approval for implementation of your research protocol.

The CCTHERC requires that you submit periodic review of the protocol and a final full review to the ERC on completion of the research. The CCTHERC may observe or cause to be observed procedures and records of the research during and after implementation.

Please note that any modification of the project must be submitted to the CCTHERC for review and approval before its implementation.

You are required to report all serious adverse events related to this study to the CCTHERC within ten (10) days in writing. Also note that you are to submit a copy of your final report to the CCTHERC Office.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours sincerely

Prof. Ganiyu Rahman
Chairman, ERC

APPENDIX D

INFORMED CONSENT FOR RESEARCH

Title: Impact of body image and self-esteem on suicidal ideation among adolescent with sickle cell disorder: mediating role of hopelessness.

Principal Investigator: Cecilia Amenyihe

Department of Education and Psychology

University of Cape Coast

amenyihececilia@gmail.com, 0246663886

PURPOSE OF STUDY

The study aims to examine the association between body image and self-esteem and their ability to predict suicidal ideation among adolescents with sickle cell disorder in the Cape Coast Teaching Hospital.

Possible Benefits

There may be no direct physical benefit for your participation. However, results of the study will provide a new perspective to aid in our understanding of the influences of psychosocial factors such as body image, self-esteem, hopelessness and suicidal ideation on sickle cell disease among adolescents.

Findings of the study will provide relevant information to enable stakeholders, health practitioners as well as the Ghana Health Service to adopt an integrative approach in the management of adolescents with SCD.

Again, findings of the study will help to expand the knowledge-base of the discipline of psychology.

Confidentiality

Your responses to this survey will be anonymous. Every information about you will be protected and you will not be named in any reports or journal or magazine. Effort will be made by the researcher to preserve anonymity including:

- assigning numbers on research questionnaires as well as codes on notes and documents of research
- keeping questionnaires or notes and any other identifying participant information under lock and key, and in the personal possession of the researcher.

Data will be safeguarded and kept confidential except in certain circumstances where the researcher is legally obligated to report specific incidents. These incidents include, but may not be limited to, incidents of abuse or danger to self and/or others.

Contacts for Additional Information

If you have questions at any point in time about this research, you may contact the researcher whose contact information is provided on the first page. If you have questions regarding your rights as a research participant, or if problems arise which you do not think you can discuss with the Primary Investigator, please contact the following people for further information about the research; Dr. Irene Vandapoure, 0542572172 and Dr. Lebbeaus Asamani, 0242122281.

Voluntary Participation

Your participation in this study is voluntary. If you decide to take part in this study, you will be asked to sign a consent form. After the consent form has been signed, you have the right to withdraw at any point in time and may do so without giving a reason. Withdrawal from participating will not affect the relationship with the

researcher, if any. Your data will be returned to you or destroyed if consent is withdrawn before data collection and processing is completed.

Consent

I have read and understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I also understand that every information given will be held in strict confidence. I understand that I will be given a copy of this consent form. I voluntarily agree to take part in this study.

Participant's signature _____ Date _____

Investigator's signature _____Date _____

If participants cannot read the form themselves, a witness must sign here:

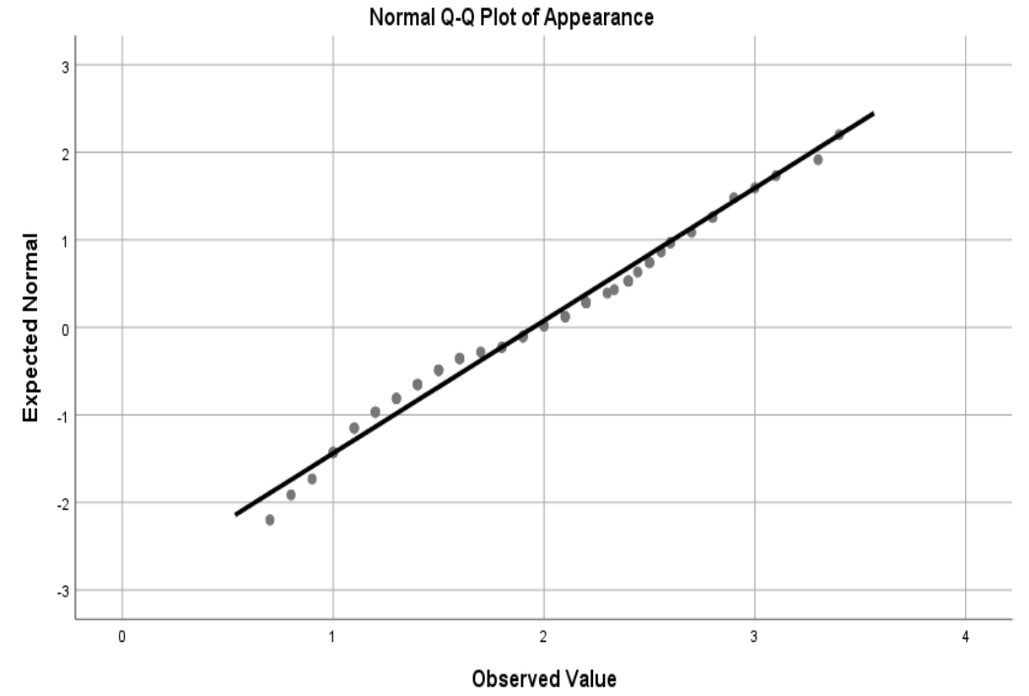
I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered, and the volunteer has agreed to take part in the research.

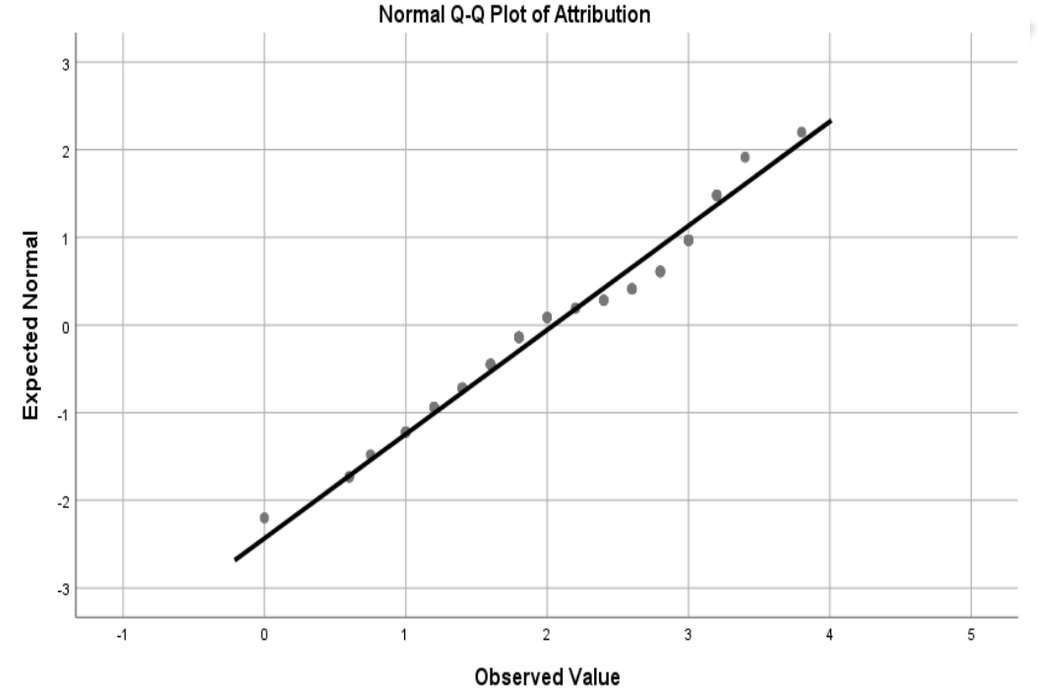
_____ _____

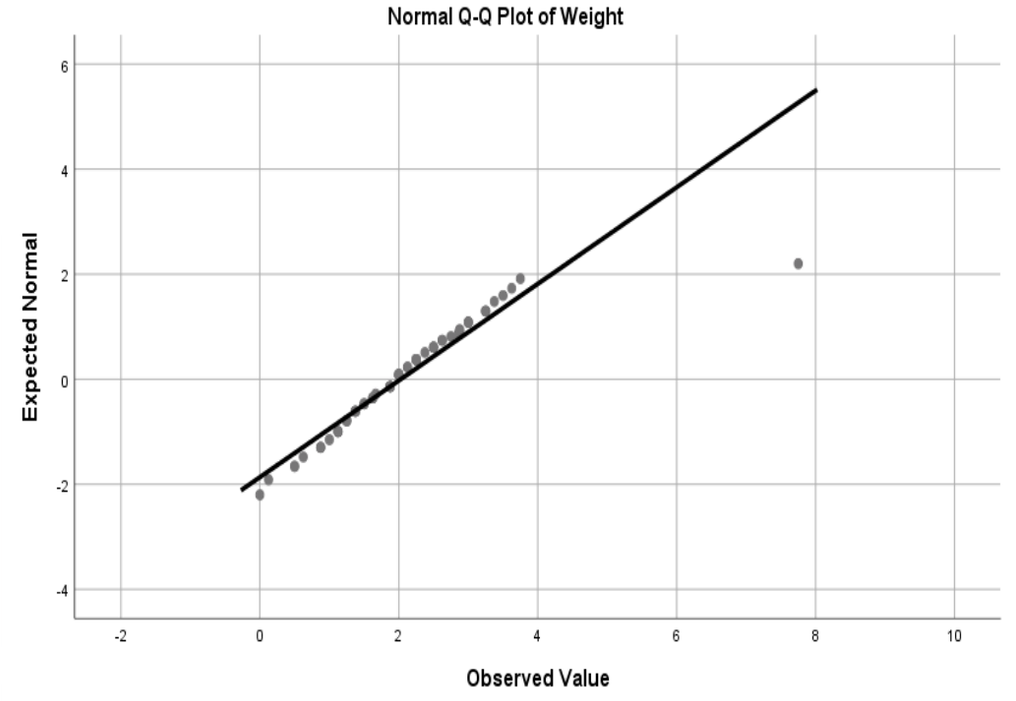
Date Name and signature of witness/Guardian

APPENDIX E

NORMALITY OF BODY IMAGE ESTEEM

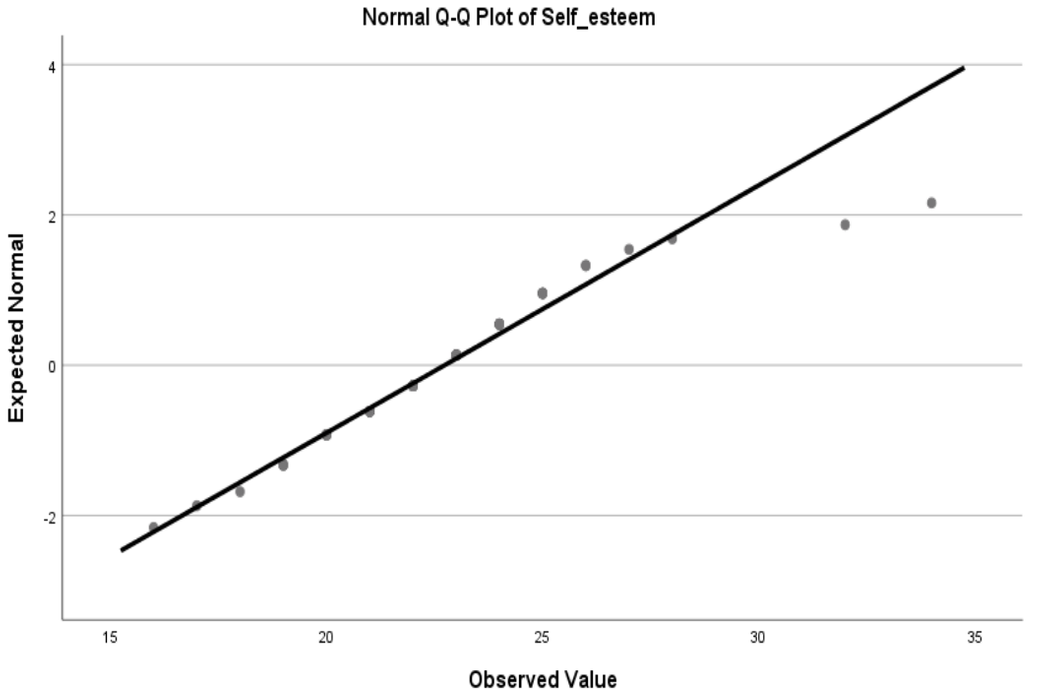


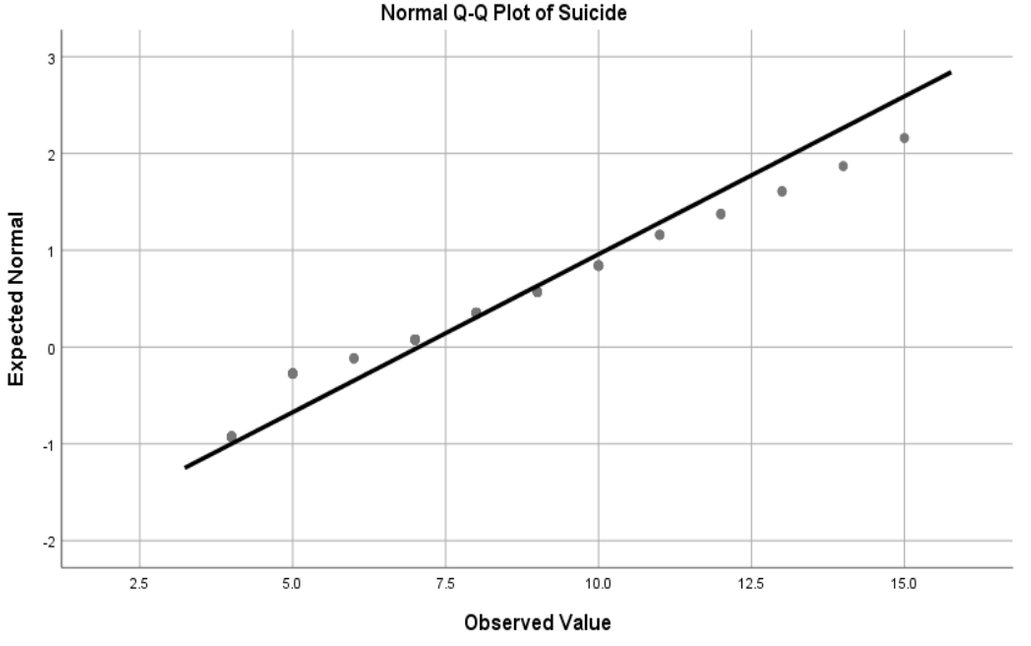




APPENDIX F

NORMALITY OF SELF-ESTEEM AND SUICIDAL IDEATION





APPENDIX G

NORMALITY OF RESIDUALS, LINEARITY, AND HOMOSCEDASTICITY