FACTORS INFLUENCING TEEN SUICIDE-RELATED BEHAVIORS AMONG
RACIALLY DIVERSE HIGH SCHOOL STUDENTS IN A SOUTHEASTERN URBAN
SCHOOL DISTRICT

by

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ABSTRACT

SONYIA C. RICHARDSON. Factors influencing teen suicide-related behaviors among racially diverse high school students in a southeastern urban school district. (Under the direction of DR. CHANCE W. LEWIS)

This quantitative study explores factors related to suicide-related behaviors among high school students in a southeastern urban racially diverse school district. It sought to examine whether race was a moderator of identified predictors and the outcome variable of suicide-related behaviors. Based on data affirming that racially diverse students in North Carolina residing in an urban unnamed district have higher rates of suicide-related behaviors than White students, this study utilized the 2017 Youth Risk Behavior Survey district data ascertain predictors and moderation effects. The sample included 2,007 Black, Latino, Multiracial, and White high school students. A logistic regression model was designed with suicide-related behaviors as the outcome behavior and six predictor variables which included cyberbullying, loneliness, homelessness, opioid misuse, sadness, and race. Using SPSS PROCESS, additional regression models were then designed to test moderation. Results indicated that all but one variable, homelessness, were statistically significant predictors of suicide-related behaviors. Additionally, sadness was the only variable moderated by race. Recommendations include the adoption of a Culturally Responsive Suicide-Related Behavior Response Framework to educate students about the history of suicide-related behaviors from a historical and culturally-based perspective. Most importantly, this framework empowers students to find alternative ways to escape from harsh life realities while affirming the challenges and difficulties they face.

DEDICATION

To the countless, diverse individuals who attempted to escape from life's harsh realities

but are still alive, this is dedicated to you. To my ancestors who escaped because they

saw no other option, I get it.

ACKNOWLEDGMENTS

I am humbly grateful to several individuals who were specifically assigned in the roles of spiritual ambassadors, mentors, and advisors during the completion of this dissertation. I have been able to reach this monumental point in my life because of your support and guidance. I pray for an abundance of blessings over your life for the time, wisdom, and insight you provided.

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CHAPTER 1: INTRODUCTION

"*Often it feels like I am breathing today only because a few years back I had no idea which nerve to cut...*" ― Sanhita Baruah

Nationally, suicide is the second leading cause of death for high school students in grades 9-12 and has become a national epidemic (Xu, Murphy, Kochanek, Bastian, & Arias, 2018). Suicide is defined as intentional self-injury that results in death (National Institute of Mental Health, 2018). In 2017, every state experienced an increase in teen suicide rates except the state of Nevada which still had a rate above the national average (Nutt, 2018). Additionally, White males have the highest rates of suicide completions and account for 69.67% of all completed suicides (American Foundation for Suicide Prevention [AFSP], 2019).

Suicide-related behaviors not resulting in death exist along a continuum and can be classified into three categories which include: 1) suicide-related ideation, 2) suicide plan, 3) suicide attempt (Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007) (See Figure 1). Suicide-related ideation includes verbal and nonverbal thoughts about killing oneself (Silverman et al. 2007). A suicide plan includes the creation of a plan that details self-inflicted harm that can ultimately result in death (Silverman et al., 2007). Suicide attempts include actual physical actions of intentional self-inflicted harm which either results or does not result in death (Silverman et al., 2007). Suicide involves intentional engagement in a self-inflicted activity resulting in death (Silverman et al., 2007). These suicide-related behaviors are distinguishable from suicide which ultimately results in death.

Suicide-Related Ideation			
Thoughts about causing one's own death	**Suicide Plan** Development of a detailed plan for suicide completion	**Suicide Attempt** A self-inflicted unsuccessful attempt at death	**Suicide** Intentional engagement in a self-inflicted activity resulting in death
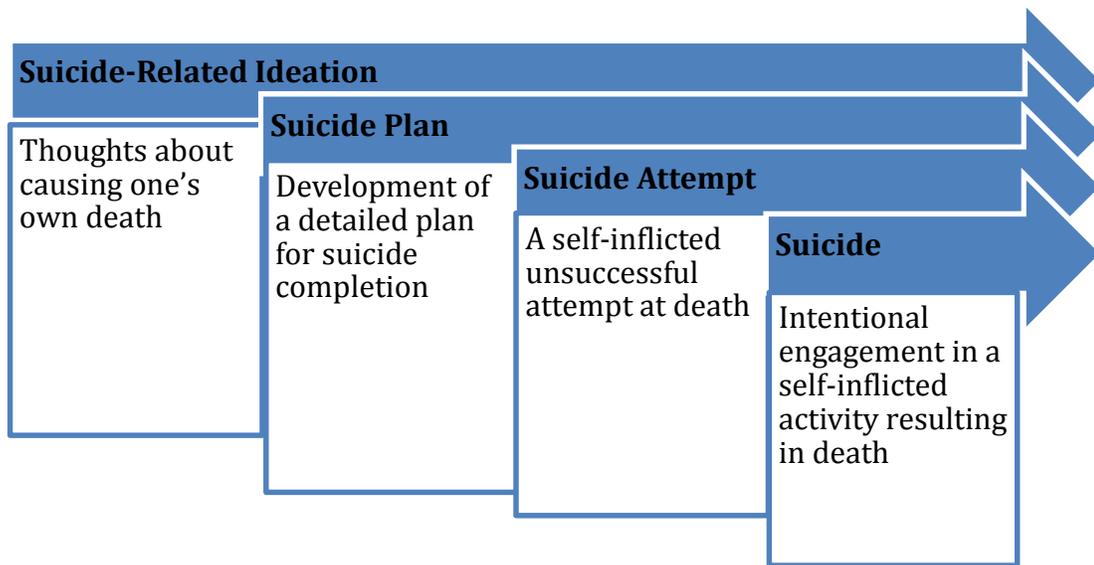
Figure 1. Suicide-related behavior and suicide continuum.

In 2017, approximately 17.2% of high school students nationally experienced suicide-related ideation, 13.6% had developed a suicide plan, and 7% engaged in attempts (Centers for Disease Control and Prevention [CDC], 2018d). Racially, Multiracial students have the highest rates of suicide-related ideation (23.2%), suicide planning (20.3%), and suicide attempts (10.8 (CDC, 2018d) (see Figure 2).   Based on the CDC (2018d) data, White students have the lowest rates of suicide attempts yet the highest rates of suicide completions. This variability between suicide-related behaviors and suicide completions from a race-based perspective requires additional examination. As it is argued that teen suicide is preventable, understanding factors that increase the risks for suicide-related behaviors among diverse teens are critical (American Psychological Association, 2019). Additionally, as suicide-related behaviors are the greatest predictor for future suicide completions, particularly suicide attempts (Bostwick, Pabbati, Geske, & McKean, 2016), it is important to identify factors influencing these behaviors in order to influence teen suicide overall (Hegerl, 2016).

National Teen Suicide-Related Behaviors
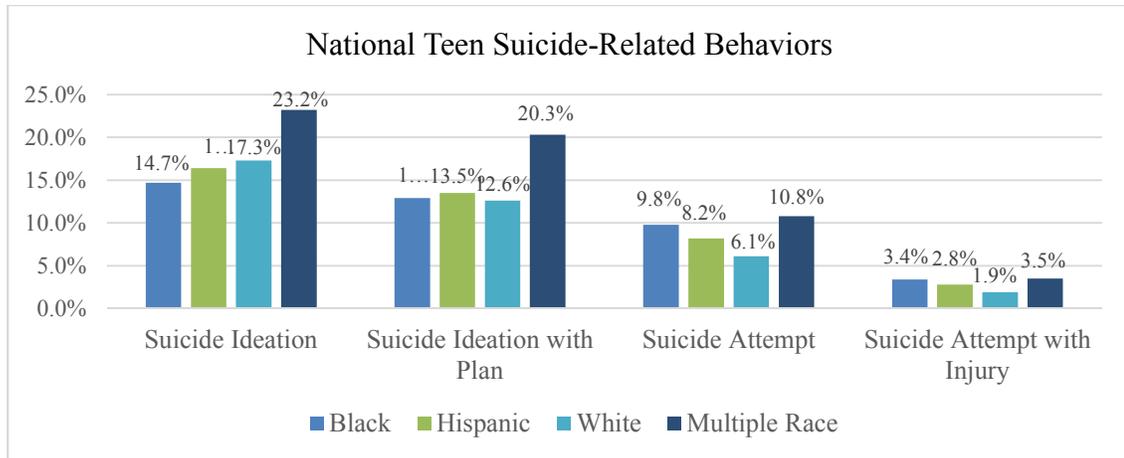
Figure 2. 2017 Youth Risk Behavior Survey national results, teen suicide-related behaviors.

Source: Center for Disease Control, Youth Behavior Risk Survey. (2018). *2017 Youth Risk Behavior Survey Data and Trends Report 2007 - 2017*. Retrieved from https://www.cdc.gov/healthyyouth/data/yrbs/pdf/trendsreport.pdf

Specifically, in the southeastern state of North Carolina, teen suicide rates increased 19.5% over a three-year span from 2015 to 2017 with 1,651 reported in 2015, 1,781 in 2016, and 2,052 completed suicides reported in 2017 (North Carolina State Center for Health Statistics [NCSCHS], 2018). Of the 2,052 completed suicides in 2017, 83% (n = 1,713) were completed by White teenagers (NCSCHS, 2018). Statewide in North Carolina, teen suicide rates have become the second leading cause of death for this population (NCSCHS, 2018). Additionally, suicide-related behaviors are higher for teenagers in this state than the national average (CDC, 2018c). Racial similarities and differences are also observed regarding suicide-related behaviors (see Figure 3). Similarly, state patterns align with national trends with Multiracial students at the highest risk for suicide-related ideation, suicide planning, suicide attempt with and without injury (CDC, 2018c). Black students in North Carolina possess the second- highest rate for suicide-related ideation, suicide planning, and suicide attempts (United Health

Foundation [UHF], 2019). Racially, White high school students in North Carolina have

higher rates of suicide completions than students of any other racial group while racial

minorities have more suicide-related behaviors (UHF, 2019).   Accordingly, rates for

suicide attempts are more than three times higher for Multiracial students than White

students (CDC, 2018c). Yet, researchers suggest that for every one person that completes

suicide, there are approximately 11 – 25 individuals who attempted suicide (North

Carolina Division of Public Health, 2012).
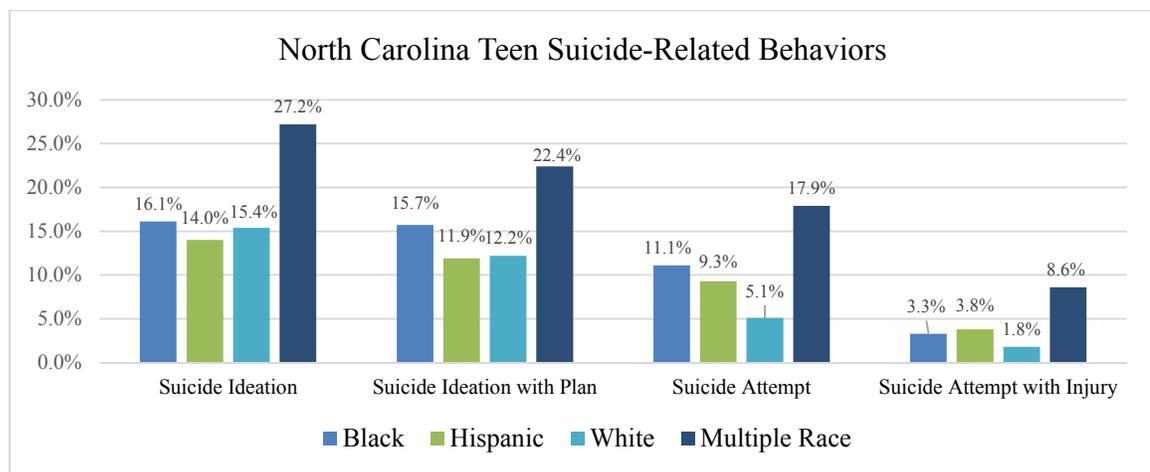
Figure 3. 2017 Youth Risk Behavior Survey North Carolina, teen suicide-related behaviors.

Source: Center for Disease Control, Youth Behavior Risk Survey. (2018). *2017 Youth Risk Behavior Survey Data and Trends Report 2007 - 2017*. Retrieved from https://www.cdc.gov/healthyyouth/data/yrbs/pdf/trendsreport.pdf

In North Carolina, one county had the highest number of suicides of all 100

counties in 2017 (NCSCHS, 2019). For the purposes of this research, this county is

referred to as George County. This county is an urban area that is defined by Milner

(2012) as a densely populated city of around one million residents with clusters of

poverty, a high representation of Students of Color and segregated schools. George

County encompasses the largest public school district in the state with approximately

147,352 enrolled students and 41 high schools (Charlotte Mecklenburg Schools, 2016). To maintain anonymity, in this study this school district will be referred to as George County School (GCS) district.

In 2017, counselors and social workers within the district experienced an increase in suicide referrals and conducted 2,100 student suicide screenings which were three times more than the amount from 2014 (Doss Helms, 2018). These referrals were generated from parents, teachers, staff, and other students who were concerned about student suicide-related behaviors (Doss Helms, 2018). It is unclear if these screenings actually prevented suicide deaths and attempts, but they were a mechanism for addressing identified behaviors. Following a slight increase in teen suicides in 2017, additional attention was directed to suicide prevention efforts based on the suicide of two high school students in the GSD district on the same day in February 2018 at two different high schools (Spectrum News, 2019). These events have increased focus on suicide prevention efforts within the district.

Deeper examination of suicide attempt data for adolescents in this county reveal that approximately 10% of high school students reported that they had attempted suicide which is above the national average (7%) and state average (8%) (Mecklenburg County Public Health [MCPH], 2019) (See Figure 4). These percentages varied drastically by race. White high school students in this district are at the lowest risk for each of the suicide-related behaviors in this district, however, they have the highest rates of suicide deaths (MCPH, 2019). Multiracial students carry the highest risk for every category of suicide-related behaviors and Latino students are second-highest in every category. Of the 9.9% of students attempting suicide, 5.5% attempted one time, 3.2% attempted two to

three times, .6% attempted four or more times, and .5% attempted six or more times

(MCPH, 2018). While suicide-related ideation and planning are correlated with suicide

completion, suicide attempts have a higher correlation, particularly within 12 months

following the initial attempt (Bostwick, Pabbati, Geske, & McKean, 2016). Thus, it

becomes extremely important to concentrate on suicide-related behaviors as a means of

decreasing the rate of suicide completions among youth in this district, particularly for

Students of Color who have the highest suicide-related behavior rates.
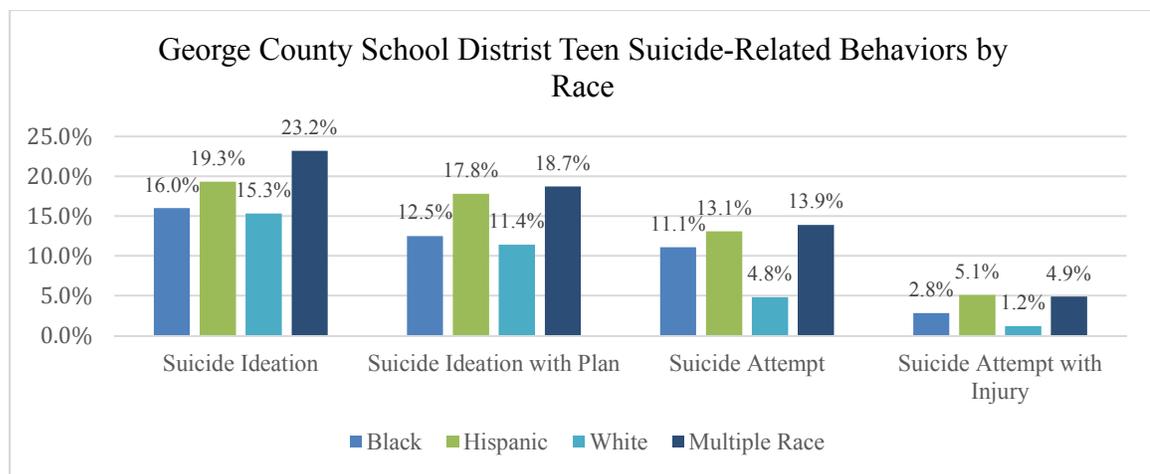
Figure 4. 2017 Youth Risk Behavior Survey national, North Carolina, George County
School District suicide-related behaviors.

Source: Mecklenburg County Public Health. (2019). *2017 highlights Charlotte-
Mecklenburg High School Students YBRS.* Retrieved from
https://www.mecknc.gov/HealthDepartment/HealthStatistics/Pages/Youth-Risk-
Behavior-Survey.aspx

Associated risk factors with suicide-related behaviors include cyberbullying,

sadness, homelessness, loneliness, and opioid misuse (Essang & Ahmed, 2019; National

Health Care for the Homeless Council, 2017; Shain, 2016; van Geel, Vedder, & Tanilon,

2014; Zamora-Kapoor et al., 2016). In 2017, the total number of individuals identified

as homeless in George County decreased by 12% to 1,476 people (Clark & Hockwart,

2018). However, approximately 21% of the homeless population were identified as

children and 79% were Black (Charlotte Mecklenburg Schools and Mecklenburg County Health Department, 2016). Data from the 2017-2018 State of Mecklenburg County Report (2018) indicated that approximately one in three high school students reported experiencing depressed mood symptoms in the county. Additionally, approximately 31% of youth reported experiencing sadness every day for at least two weeks over the last year (MCPH, 2019). In regards to loneliness within the county, 12.3% of high school students reported feeling alone or lonely (MCPH, 2019). Collectively, these issues may influence suicide-related behaviors in the district but this requires further investigation.

Statement of the Problem

In 2017, suicide became the second leading cause of death for high school students in George County (MCPH, 2019a). Suicide is labeled as a condition that primarily affects White students since their rates are higher for completion. However, suicide-related behaviors disproportionately affect Students of Color and are not typically discussed (see Figure 5). Students of Color within the GCS district have higher rates of suicide-related behaviors than White students. Suicide-related behaviors have received less attention as prevention efforts have mainly been focused on preventing suicide completions. As suicide-related behaviors are a predictor of suicide completions, it is important to examine this data as a means of suicide prevention efforts. Additionally, it is important to understand the role of race with suicide-related behaviors. Limited research has examined suicide-related behaviors for high school students based on race within an urban district with higher rates of suicide completions than the state and national averages. Understanding factors within this district associated with suicide-related behaviors among high school students provides further insight into prevention and

intervention efforts. Additionally, it is important to understand if the increased rates of

teen suicide-related behaviors are linked to risk factors of cyberbullying, sadness,

homelessness, loneliness, and opioid misuse. Ultimately, this research seeks to identify

predictors of suicide-related behaviors within the district based on race and provide

recommendations for tailored interventions.

Suicide is the 2nd leading cause of death for high school students in North Carolina.	In 2017, suicide became the 2nd leading cause of death for high school students in George County.
Suicide-related behaviors are a strong predictor of suicide completions.	Suicide-related behaviors are higher for Students of Color in North Carolina and George County.
Examining factors influencing suicide-related behaviors for high school students in George County is urgently needed.	Understanding the influence of race on suicide-related behaviors is necessary to inform tailored prevention and intervention efforts.

Figure 5. Statement of the problem.

The Escape Theory of Suicide (Baumeister, 1990) is the guiding theoretical

framework for this research. The Escape Theory of Suicide focuses on suicide as a

means for individuals to escape harsh realities and aversive conditions (Baumeister,

1990). Applied to this research, this theory provides a unique perspective for further

inspection of race, cyberbullying, sadness, homelessness, loneliness, and opioid misuse

as factors that increase the need to escape from negative life circumstances by engaging

in suicide-related behaviors. Furthermore, Baumeister (1990) suggested that both

suicide-related behaviors and suicide completions support the desire for an individual to

escape from reality. For this study, it was proposed that bullying, sadness, homelessness, loneliness, and opioid misuse predicted suicide-related behaviors, supporting the Escape Theory of Suicide particularly for Students of Color within the GCS district. The race variable was not investigated within this theory initially, but is utilized with the current study.

Significance of the Study

This research is critical for understanding associations between cyberbullying, sadness, homelessness, loneliness, and opioid misuse for teen suicide-related behaviors for racially diverse high school students within the GCS district. It is also important to understand the role of race with suicide-related behaviors. Limited research has examined the relationship of these factors in a district with high suicide completions and suicide-related behaviors and viewed it from a race-based perspective. Additionally, "suicide ideation and attempts are strong indicators of children at risk of dying by their own hand" (Nierengarten, 2018, para 5). This research informs systemic strategies for addressing suicide intervention and prevention with the goal of saving lives. It suggests collective efforts to address factors that increase the risk for teen suicide-related from a community level. At a school-level, it provides recommendations for counselors and social workers who are positioned on the frontlines to prevent and respond to teen suicidal behaviors and trained to identify and address warning signs for students at risk of suicide-related behaviors (American School Counselor Association, 2013; National Association of Social Workers, 2018). At a district level, it provides strategies for how the district can decrease suicide-related behaviors and provide post-suicide attempt supportive services. Lastly, recommendations are provided to parents about strategies for

helping to identify signs for increased suicide-related behavior risk and provide coping strategies for their teens wishing to escape from negative experiences.

Purpose of the Study

Through a secondary analysis, this quantitative study in the GCS district is warranted for two reasons 1) rates of teen suicides increased in 2017 making it the second leading cause of death among teenagers in this district during that calendar year; 2) suicide-related behaviors are highest among Students of Color in the GCS district and are strongly correlated with future suicides. As a result, this research sought to understand factors that predict suicide-related behaviors among racially diverse students in the GCS district. This research is necessary as it examines suicide-related behaviors in a racially diverse urban school district which is a greatly understudied area or research. Additionally, it sought to understand the role of race in suicide-related behaviors among high school students. It was hypothesized that cyberbullying, sadness, homelessness, loneliness, opioid misuse, and race were predictors for teen suicide-related behaviors among high school students within GCS district. It was also hypothesized that race was a moderator of predictors for suicide-related behaviors increasing the strength of the association.

Methods

The research questions for this non-experimental quantitative study included: 1) Does cyberbullying, sadness, homelessness, loneliness, opioid misuse, and race predict teen suicide-related behaviors among public high school students in the George County school district?; and 2) Does race moderate the relationship between teen suicide-related

behaviors and identified predictors for Black, Latino, Multiracial, and White students in the George County school district?

The predictor variables were reclassified into binary variables. Independent variables for this study include race (Students of Color/White Students), cyberbullying (reported cyberbullying, no reported cyberbullying), homelessness (homeless, not homeless), sadness (reported sadness, no reported sadness), loneliness (reported feelings of loneliness, no reported feelings of loneliness), and opioid misuse use (use of substances or no use of substances). The outcome variable was computed as a binary, dichotomous variable based on if participants affirmed experiencing suicide-related ideation, suicide planning, and/or suicide-related attempts.

Secondary data sets utilized for this study included the Centers for Disease Control and Prevention Youth Risk Behavior Survey (YBRS), and the North Carolina George County Youth Risk Behavior Survey Data (2017). The YBRS is a survey rendered every odd number year to high school students nationally. This survey assists in capturing self-reported suicide-related behavior data from teenagers. North Carolina modifies the YRBS to include additional variables of interest and this version is completed by students in this state. George County then modifies the YRBS to include additional questions to the survey based on county-wide research interests. The 2017 George County data was not published nationally as it was a modified version from the state and district and was retrieved upon request from the GCS district. The survey was rendered at 28 of the 41 high schools in the district and includes a sample of 2,233 students.

SPSS was utilized and all variables were coded and reclassified into binary. The
dataset was screened for missing values, assumptions, and outliers. Data were imputed
due to missingness and multiple imputation was utilized (Stern et al., 2009). Next, a
descriptive analysis was conducted based on the variables. A logistic regression model
was conducted to understand the role of six independent variables with predicting the
outcome variable. PROCESS SPSS was then utilized to test if race was a moderator
(Hayes, 2012). Regression coefficients (Baron & Kenny, 1986) were reported to
understand the moderating effects of race.

<div align="center">**Dissertation Overview**</div>

The primary purpose of this dissertation research is to examine teen suicide-
related behaviors, race, cyberbullying, sadness, homelessness, loneliness, and opioid
misuse through a secondary analysis quantitative study in the GCS district. This study
examines suicide-related behaviors among racially diverse high school students in a
racially diverse urban school district. As this is an understudied area of research and the
rates for suicide-related behaviors among racially diverse populations is increasing, this
research is necessary. This research utilizes 2017 data from the Youth Risk Behavior
Survey that was rendered to high school students in the GCS district. This dataset allows
for the examination of identified predictors and outcome variables.

This dissertation is presented in five chapters. In Chapter 1, a brief overview of
the research study, problem statement, purpose, and research question are presented.
Additionally, details are included regarding the structure of this research. In Chapter 2,
an overview of existing research on contextual contemporary experiences of teenagers,
teen suicide rates, epidemiology of teen suicide-related behaviors, and a review of

predictors of teen suicide-related behaviors is provided. Further context regarding the problem and gaps in existing research is also presented. The theoretical framework is presented in more detail, explained and applied to the research. In Chapter 3, the methodology is detailed for this study and explains the survey utilized, variables, research methods, data procedures, and analysis method. It also describes the limitations and delimitations of the study. In Chapter 4, results from the study and the analysis are explained. The analysis for each research question is presented for review. Finally, in Chapter 5 findings are presented with direct answers to the research questions. Recommendations are provided based on the findings and future research is proposed.

Key Terminology

Key terms for this research are defined below to offer additional clarity:

Cyberbullying: Cyberbullying is defined as bullying that occurs on technological platforms such as computers, cell phones, and tablets through text messaging, social media, email, and gaming (U. S. Department of Human and Human Services, 2019).

*Homelessness***:** Not having a permanent residence and faced with one of the following living situations: 1) sharing housing with other people; 2) living in a hotel, car, or campground; 3) living on the street or in public places; 4) living in emergency shelters; 5) awaiting foster care home (United States Department of Education, 2018).

Loneliness: Self-perceived isolation or lack of social connections (London & Ingram, 2018).

Opioid Misuse: Use of prescription pain medications not as prescribed including taking someone else's medicine and taking too much medicine (U.S. National Library of Medicine, 2019).

Sadness: A negative emotion or thoughts that circumstances and situations will not improve or get better (CDC, 2017).

School Safety: When students feel safe and protected from bullying, theft, drug use, and violence at the school, on the way to and from school, or at school-related events (National Center on Safe Supportive Learning Environments, 2019).

Suicide: Engagement in a self-inflicted activity resulting in death (Silverman et al., 2007).

Suicide Attempt: Actual physical actions of self-inflicted harm which either results or does not result in death (Silverman et al., 2007).

Suicide-Related Ideation: This occurs when an individual has thoughts about suicide and causing one's own death (Silverman et al., 2007).

*Suicide-Related Behaviors***:** Actions that may or may not ultimately result in death and include a range of behaviors including suicide-related ideation, suicide planning, and suicide attempt (Silverman et al., 2007).

*Suicide Plan***:** Development of a detailed plan for suicide completion (Silverman et al., 2007).

Urban: Defined by Milner (2012) as a large and densely populated city of at least 1 million residents with concentrated poverty, segregated schools, and complex housing.

CHAPTER 2: LITERATURE REVIEW

"You stop talking about your problems, showing emotions or reacting to anything, you enter a hopeless path, with no return. I realized that whenever I screamed or complained, I wanted help but when I stopped acting out, my mind was already made up." ─ Lunga Noélia Izata

This research seeks to examine factors influencing suicide-related behaviors among racially diverse high school students in the GCS district. This research is warranted as 2017 rates of suicide-related behaviors were higher in this district than the state of North Carolina. Additionally, in 2017 suicide became the second leading cause of death of adolescents in the GCS district. Furthermore, this research examines the role of race with suicide-related behaviors and utilizes a racially diverse school district for investigation.

This chapter will review relevant research on the contextual and contemporary experiences of teenagers, suicide, and suicide-related behaviors. It will explore factors previously examined in research with varied findings to include race, cyberbullying, sadness, homelessness, loneliness, and opioid misuse. Through a critique of the existing literature, it will identify gaps in the research, present opposing viewpoints, and provide an argument regarding the need for this research. The theoretical framework will be described in more detail in this chapter and will be applied to this research. This chapter provides a blueprint for the design of the methodology of this chapter.

Developmental and Contemporary Experiences of Teenagers

During the teenage years, time spent with peers increases and these relationships grow stronger as they begin to spend less time with their family members (CDC, 2019).

Cognitively, teenagers begin to internalize messages and increase self-awareness; yet, the prefrontal cortex of their brain, which controls healthy decision making and correct interpretation of emotions and social cues, is not fully developed (American Academy of Child & Adolescent Psychiatry [AACAP], 2018; CDC, 2019). As a result of this delayed development in executive functioning, they may misinterpret situations, act impulsively, and engage in risky behaviors (AACAP, 2018). Additionally, the use of substances including alcohol or drugs during these developmental stages can impact or lead to permanent changes with their brain development and are guided more by impulse (AACAP, 2018). Decision making is often reactive and guided by emotions causing teenagers to experience more feelings of sadness which can lead to other negative emotions (AACAP, 2018; CDC, 2019). Physically, most teenagers have completed puberty but the physical changes they endured may cause them to become more concerned about their physical appearance (CDC, 2019).

Additional stressors are common for teenagers born within Generation Z, which includes individuals born between 1990 – 2010. Generation Z teenagers have been heavily raised with technology, and it has been incorporated in their everyday life and interactions creating a total reliance on them (Schwieger & Ladwig, 2018). As a result, they are socially connected through technology, and many prefer engaging socially with peers through these means rather than face to face communication (Schwieger & Ladwig, 2018).

Seemiller and Grace (2017) assessed various data regarding 150,000 Generation Z children through market research, social and behavioral scientific studies, and polling data in order to understand patterns of this generation. Their findings suggest that

Generation Z has more access to information due to technology. However, this access has increased negative emotions due to traumatic events occurring and violence and decreased the overall sense of safety (Seemiller & Grace, 2017). For example, in 2018 seventeen students and staff were murdered and seventeen were injured by a 16-year-old student at Marjory Stoneman High School in Parkland, Florida. During the shooting, students were using their cell phones to text information about their location as well as their final goodbyes. The increased exposure to these trauma and violence-related events through the use of technology has heightened levels of fear and concern particularly for students (Seemiller & Grace, 2017) and has led to the perception that school violence is a national epidemic (Everly, 2018).

While technology may heighten the fear for this generation, it was also found that technology has increased feelings of loneliness among individuals in Generation Z. Using the UCLA Loneliness scale, Cigna Healthcare (2018) surveyed more than 20,000 U.S. adults to inquire about their degree of loneliness. They were interested in understanding more about loneliness as it has been linked to pathology with most mental illnesses. Adult participants were grouped in the study and classified as being within Generation Z.   According to their findings, Generation Z constituted the population of their sample with the highest rates of loneliness of all adults ages 18 - 70 (Cigna Healthcare, 2018). They also found that the use of social media was not a predictor of loneliness. In other words, the increased use of technology for social interactions is not a predictor of feelings of loneliness. Interestingly, they found no differences in average scores of loneliness based on race.

Loneliness has been considered a risk factor for opioid misuse behavior with individuals who use drugs having stronger feelings of loneliness and isolation than those who do not use (Hosseinbor, Ardekani, Bakhshani, & Bakhshani, 2014). Teenagers born between 2000 - 2005 were faced with the ending of the crack epidemic and the beginning of the opioid abuse epidemic. The increased use of opioids was spurred from promises from pharmaceutical companies in the late 1990s that prescription pain medications could not lead to addiction which caused physicians to prescribe them more (National Institutes of Drug Abuse, 2019). There has been an increase in opioid use and addiction among adolescent which has led to a national epidemic (Sharma, Bruner, Barnett, & Fishman, 2017). Opioids are classified into three types which include prescription pain medications, fentanyl, and heroin (CDC, 2018b). According to the Centers for Disease Control and Prevention National Vital Statistics System (2018), there are 130 deaths every day due to opioid overdose. In 2016, youth ages 12-17 were using opioids twice as much as individuals ages 18-25 and the primary opioid use was prescription pain medications (Substance Abuse and Mental Health Services Administration [SAMHSA], 2017). Furthermore, Gart, and Kelly (2015) found that illegal drug use can lead to suicidal thoughts and actions for teenagers.

Youth during this time period also experienced the Great Recession which lasted from early 2000 to 2010 and was identified as the worst financial crisis since the Great Depression (Hout, Levanon, & Cumberworth, 2011). The recession resulted in over 10 million home foreclosures and the collapse of the housing market (Hall, 2014). The loss of homes also increased evictions from renters who relied on owners for their housing (Faber, 2019). Children were more at risk for homelessness due to the rapid decline of

the economy and housing crisis experienced by their parents and/or legal guardians. During the great recession, 26 states experienced an approximate 50% increase in the number of homeless children including the state of North Carolina (Lovell & Duffield, 2010). Therefore, a number of psychological, social, and economic factors have adversely affected the lives of teenagers during this time period at a state and national level.

National, State, and Local Examination of Teen Suicide Rates

Teen suicide is the second leading cause of death for teenagers and results annually in over 4,600 deaths (CDC, 2017; Xu et al., 2018). Suicide is defined as intentional death by self-inflicted injury. Suicide-related behaviors that do not result in death include *suicide-related ideation* (thoughts of suicide), *suicide attempt* (self-inflicted injury but no death), and *suicide plan* (plan for suicide that has not been enacted upon) (Silverman et al., 2007). Nationally, there has been a 70% increase in teen suicides over a 10 year period between the years 2006 and 2016 (CDC, 2017). Equally alarming is the suicide attempt data. Findings reveal that over 157,000 youth attempt suicide yearly which results in injuries (CDC, 2017). Moreover, the recent Centers for Disease Control and Prevention Youth Risk Behavior Survey Data from 2017 indicated that nationally approximately 17.2% of high school students seriously considered attempting suicide, 13.6% had a serious plan for committing suicide, and 7.4% attempted suicide. Further investigation of this data at the state level indicated that North Carolina is below the national average for the percentage high school students who seriously considered attempting suicide (16.2%) but slightly above the national average for high school

students who had a serious plan for committing suicide (13.8%) and attempted suicide (8.2%) (CDC, 2018).

In 2017 in the state of North Carolina, approximately 86% of the 1,362 suicides were completed by White males and the most common method included firearms (58%), hanging or suffocation (20.9%) and poisoning (16.4%) (North Carolina Department of Health and Human Services [NCDHHS], 2018). Additionally, 34% of males and 29% of females completing suicide had reported sad or depressed mood symptoms prior to suicide. Females were also found to have a higher rate of prior suicide attempts (28%) than males (12%) (NCDHHS, 2018).

At a district level in North Carolina, suicide is now the second leading cause of death for individuals aged 15-24 in the GCS district (Mecklenburg County, 2016). White residents were 2.3 times more likely to complete suicide and more likely to die than racial minorities (Mecklenburg County Health Department Epidemiology Program [NCHDEP], 2017). Males were also three times more likely to die from suicide. From 2012 - 2016, there were 354 suicides for White residents and 95 for Blacks (NCHDEP, 2017). It was also reported that 15% of high school students reported having a plan for suicide, which is above the national and state average (CDC, 2018a). Unintentional injuries were cited as the primary cause of death for teenagers while homicide was recognized as the third leading cause of death for this population. In the GCS district, it was reported that approximately one out every ten high school students have reported suicide attempts (Morabito, 2018), and one out of every five students have suicide-related ideation (WCCB, 2018).

In order to address teen suicide within the state, the North Carolina Child Fatality Task Force encouraged district-wide use of suicide screenings to help prevent suicides at schools (Doss Helms, 2018). GCS district has implemented these screenings in all K-12 schools and has noticed a 300% increase in the number of children being referred for suicide screenings from 2012 to 2018 (Doss Helms, 2018). While this effort is helping to prevent suicide rates, there is still limited explanation behind what may be causing the increase in teen suicide rates in this district. Further examination of environmental factors that may cause this increase in teen suicides is warranted.

Race and Suicide-Related Behaviors

Limited research has examined teen suicide-related behaviors with racially and ethnically diverse demographic groups. Researchers have been split regarding the role of race with suicidality. Joe, Banks, and Belue (2016) found that racial and ethnic diversity was not a significant influencer of suicide risk among a sample of diverse adolescents presenting for crisis services in Philadelphia due to mental health or substance use crisis. This is in alignment with the work of Kim, Moon, and Kim (2011), who found that race was not a predictor of suicide-related behaviors based on a nationally representative diverse sample. However, these studies did not include teenagers in urban cities who presented with a range of suicide-related behaviors including ideation, planning, and attempts.

On the other hand, Romero, Wiggs, Valencia, and Bauman (2013) examined Latina suicide and bullying at a state level in Arizona and found that rates for suicide-related ideation, suicide planning, and suicide attempts were higher for this demographic group than other national averages. Additionally, it was found that Latina girls

experiencing bullying were on average 1.5 times more likely to experience suicide-related ideation, have a plan for suicide and attempt suicide (Romero et al., 2013). Additionally, researchers have found that this population is two times more likely to engage in suicide-related behaviors than White or Black teenagers (Eaton et al., 2011).

Researchers have also examined 12-month and lifetime prevalence rates among Black teenagers (Joe, Baser, Neighbors, Caldwell, & Jackson, 2009). Based on their national sample of 1,170 Black teenager participants completing the National Survey of American Life-Adolescent survey, it was anticipated that 4% of Black teenagers would attempt suicide before the age of 17 years old (Joe et al., 2009). Interestingly, participants who reported engaging in suicide attempts did not have any prior mental health diagnosis. Thus, the researchers argue that indicators or risk factors for suicide-related behaviors must be investigated for racially and ethnically diverse populations.

In an attempt to address the gap of research on cyberbullying and suicide ideation among racially diverse teens, Edwards, Kontostathis, and Fisher (2016) scanned 165 articles and identified 15 that addressed cyberbullying with a sample of 50% Students of Color. Their findings indicate that while youth of color reported lower rates of cyberbullying than White peers, their outcomes for suicide-related ideation and suicide attempts were still comparable with those peers (Edwards et al., 2016). They suggest that youth of color were not excluded from the influence of cyberbullying and its influence on suicide-related behaviors. Further research was recommended regarding racially diverse groups.

Epidemiological Overview of Teen Suicide-Related Behaviors and Race

Teen suicide attempts are defined as suicidal behaviors by teenagers ages 13-18 that are self-initiated, involve self-injury, carry an intent to die and result in an outcome of a non-fatality (Van Orden et al., 2010). Teen suicide attempts that result in injury are hypothesized as instances where the individual engaged in self-injurious behavior, and their survival is a result of chance, such as overdosing with pills (Van Orden et al., 2010). The most common method for suicide death is firearms, suffocation or hanging, and poisoning including pill overdose, while the most common injury from suicide attempts are drug overdoses, cutting with sharp objects and self-poisoning (National Institutes of Mental Health [NIMH], 2018). Although some researchers have sought to distinguish between suicide attempts and self-injurious behaviors, these two categories appear to be enmeshed (Mercado, Holland, & Leemis, 2017). For example, Mercado et al. (2017) examined trends from hospital emergency room data for individuals ages 10-24 presenting due to self-injuries. Based on this study they recommended that suicide prevention efforts should include self-harm prevention strategies in order to reduce suicide attempt behaviors (Mercado et al., 2017), thus merging the two categories.

Similarly, Ting, Sullivan, Boudreaux, and Miller (2012) focused on attempted suicide and self-injury visits to emergency rooms and found that visits doubled over a 16 year period from 1993 to 2006 for males and females and Blacks and Whites. Researchers also found that teenagers ages 15 -19 had the highest rates of visits to the emergency room (Ting, Sullivan, Bourdreaux, & Miller, 2012), thus validating the need for additional research with this population.

Cutler, Flood, Dreyfus, Ortega, and Kharbanda (2015) examined emergency room visits for self-inflicted injuries for adolescents more closely. In their study, they sought to examine factors that increase the risk of self-harm for this population. Using 2009 - 2012 data from the National Trauma Data Bank, they examined data from 286,678 adolescents ages 10-18. Findings illustrated that self-inflicted injuries increased during this three year period but firearm visits decreased. Odds for engaging in self-inflicted injuries were higher for older adolescents. Along the same lines, Bridge, Marcus, and Olfson (2012) found that adolescents who endured a self-inflicted injury from an attempt were at very high risk for suicide completion with the highest risk immediately following the emergency care visit.

In an examination of more recent data, Canner, Guilano, Selvarajah, Hammond, and Schneider (2018) reviewed attempted suicide emergency room data from 2006 - 2013 from the Nationwide Emergency Department Sample. The sample included a total of 3,567,084 emergency room visits with the highest frequency of visits among 15-19 year old teenagers. Canner et al. (2018) reported that the most common method of suicide attempts included poisoning, cutting and piercing. Additionally, risk factors for suicide-related behaviors for this population included mood disorders such as depression or depressed mood, substance use, and loneliness.

Price and Khubchandani (2019) conducted a descriptive analysis of longitudinal data for Black high school students and reported suicide-related behaviors from 2001 to 2017. Utilizing practical significance, they found that the rates of suicide-related behaviors increased for Black males by 60% over this time period and 182% for Black females. In their research, North Carolina was listed as one of the top ten states with the

highest number of adolescent suicides. Their recommendations encompass understanding what contextual factors are influencing this increase in suicide-related behaviors.

Review of suicide-related behaviors data stratified by race helps to provide more insight into estimates by high school students. At a national, state, and GCS district level, North Carolina high school students of multiple races have the highest rates of suicide attempts (see Figure 6). Suicide-related behaviors of Black and White students have the least variance but Black students have higher rates of attempts than White students. For Latino students, rates are much higher at the GCS district than statewide or nationally. Interestingly, White students have the lowest rates of suicide attempts at the national, state, and district-level. What is causing these differences in suicide-related behaviors basis of race? Are there particular risk factors that are increasing rates at the district level for certain racial groups?

Researchers have found that racially diverse students identifying are at a higher risk for suicide-related behaviors. Price and Khubchandani (2019) found that Black students had increasing rates of suicide-related behaviors from 2001 to 2017 with a combined average of a 122% increase. Rothe and Pumariega (2018) found that Latino youth have increasing rates of suicide-related attempts.

National, North Carolina, GCS Distrist Suicide Attempts by Race
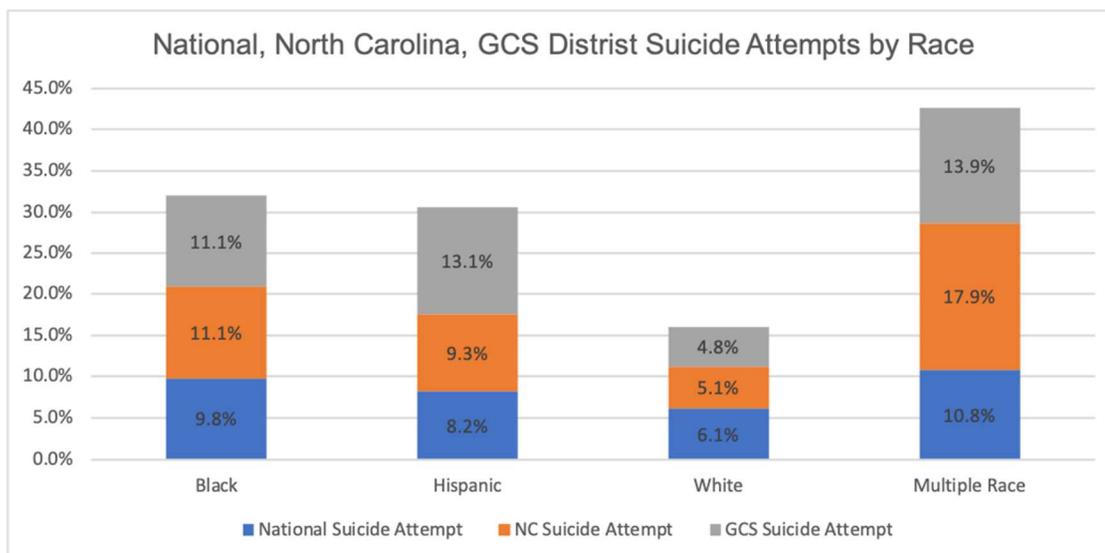
Figure 6. 2017 Youth Risk Behavior Survey national, North Carolina, George County School District suicide attempts.

Source: Mecklenburg County Public Health. (2018). *2017 highlights Charlotte-Mecklenburg High School Students YBRS*. Retrieved from https://www.mecknc.gov/HealthDepartment/HealthStatistics/Pages/Youth-Risk-Behavior-Survey.aspx

Individual Risk Factors of Suicide-related Behaviors

There is not a single risk factor for suicide but instead several factors that influence individuals to attempt or complete suicide (Maris, Berman, & Maltsberger, 1992). While suicide attempts are a strong predictor of suicide completion, risk factors help to increase suicide attempt risk (Nepon, Belik, Bolton, & Sareen, 2010). Additionally, multiple suicide attempts are robust predictors of suicide completion and half of all suicides are not successful on the first attempt thus creating suicide attempts (Christiansen & Jensen, 2007; Haw, Bergen, Casey & Hawton, 2007; Rudd, Joiner, & Rajab, 1996). Understanding the various risk factors for suicide-related behaviors is important, particularly among diverse teenagers. Associated risk factors for self-

inflicted, non-fatal suicide-related behaviors are reviewed from the literature and include cyberbullying, homelessness, loneliness, opioid misuse, and sadness.

Cyberbullying as a Risk Factor of Suicide-Related Behaviors

The association between bullying and suicide-related behaviors has been validated by several researchers (van Geel et al., 2014). Bullying is defined as "any unwanted aggressive behavior(s) by another youth or group of youths who are not siblings or current dating partners that involves an observed or perceived power imbalance and is repeated multiple times or is highly likely to be repeated" (Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2014, p. 7). Cyberbullying includes the use of electronic means to carry out unwanted aggressive behaviors (Hinduja & Patchin, 2015).

Hinduja and Patchin (2010) examined the association between bullying, cyberbullying and suicide among a sample of 1,963 middle school students in one large school district. Participants completed a survey inquiring about suicidal ideation, cyberbullying victimization, cyberbullying offending, bullying victimization, and bullying offending. Using least squares logistic regression models, researchers found that participants who identified as victims or perpetrators of cyberbullying and bullying were more likely to experience suicide-related ideation or suicide attempts. They found that victims of cyberbullying were 1.9 times more likely to attempt suicide and offenders of cyberbullying were 1.5 times more likely. This was in contrast with the bullying rates which indicated that victims of bullying were 2.1 times more likely to attempt suicide than offenders of bullying who were 2.1 times more likely. In their study, race was significantly related to suicide-related ideation within all forms of bullying.

To extend this relationship and understand associations among high school students, Bauman, Toomey, and Walker (2012) utilized structural equation modeling with a sample of 1,491 participants. They sought to understand differences based on race and gender. Thus, for their race variable, they excluded Asian, Native Hawaiian, and Multiple Non-Latino populations for their sample due to small cell sizes. Using existing data from the 2009 YRBS, they examined variables of bullying, cyberbullying, suicide, and depression. Results indicated that cyberbullying was a strong predictor for suicide attempts for males only. They also found that cyberbullying was more prominent with twelfth-grade students and suicide attempts were more likely among 9th graders. They argue that the cyberbullying variable is vastly different from the bullying variable. Additionally, researchers did not find any relationship between suicide, bullying, or race variables.

Conversely, van Geel, Vedder, and Tanilon (2014) conducted a meta-analysis to examine the relationships between suicide-related ideation, suicide attempts, and peer victimization among children and adolescents. Using nine studies with a total of 70,102 participants they found that victimization or bullying was significantly related to suicide ideation (2.23 odds ratio) and suicide attempts (2.55 odds ratio). Yet, they also found that cyberbullying (3.12 odds ratio) had a stronger correlation to suicide-related ideation than traditional bullying (2.05 odds ratio). This study did not include a race component and did not investigate its effect on suicide-related behaviors. Thus, further investigation of cyberbullying and suicide-related behaviors is warranted.

Homelessness as a Risk Factor of Suicide-Related Behaviors

Homelessness has been confirmed as a risk factor for suicide and has been investigated through several empirical studies (Babidge, Buhrich, & Butler, 2008; Barak, Cohen, & Aizenberg, 2004; Haw, Hawton, & Casey, 2006; Linn, Gelberg, & Leake, 1990). Homelessness is defined by the U.S. Department of Education in the Title VII-B of the McKinney-Vento Homeless Assistance Act (2004) as "a person who lacks a fixed, regular, and adequate nighttime residence" (p. 2). Suicide-related behaviors among individuals living in homeless shelters vary based on the district and region of the United States. For example, Eynan et al. (2002) conducted a study with a sample of 330 adults who were homeless to examine the association of suicide-related ideation and attempts with homelessness. Findings revealed that approximately 34% of individuals experiencing homelessness in this sample had attempted suicide and incidences of attempts were higher among homeless women (78%) versus men (28%). Rates were higher for suicide attempts among homeless individuals who initially experienced homelessness as a child with rates being around 40.7%.

It is estimated that youth are increasingly becoming homeless. According to the 2017 Annual Homeless Assessment Report (AHAR), approximately 553,742 people were homeless on a single night. Families with children comprised approximately 33% of the homeless population (Henry, Watt, Rosenthal, & Shijvi, 2017). Further estimates suggest that one in 30 adolescents experiences homelessness on any given night over the course of one year and approximately 52% reported feeling unsafe as a result of their homelessness (Voices of Youth Count, 2017). Also, Black youth have a higher risk of

homelessness of 83% nationally and it is estimated that rates are 4.2% for youth residing in urban areas (Voices of Youth Count, 2017).

Researchers have found an increased risk in suicide-related behaviors for teenagers who are experiencing homelessness. Patterson and Holden (2012) found that suicide rates are almost 10 times higher for individuals experiencing homelessness than those not experiencing homelessness. A 2012 report on suicide among school-aged children in New York, an urban city, indicated that students experiencing suicide were three times more likely to attempt suicide with one in five homeless students indicating a suicide attempt within the last year (CDC, 2015).

Approximately 1 in 28 children in North Carolina experience homelessness (NC DHHS, 2018). Additionally, North Carolina is one of the top 10 states with the highest percentage of low-income working families (31%) (NC DHHS, 2017). According to the North Carolina Homeless Education Program (2019), approximately 29,545 public school students in the state of North Carolina were homeless during the school year. In the GCS district, it is estimated that there are over 4,000 school-aged children who are homeless on any given night (Gillis, 2018). In George County, 31% of homeless families had children residing within them and 78% of these families were residing within an emergency shelter (Charlotte Mecklenburg, 2017). Homelessness disparities based on race were also found in George County with 79% of homeless individuals identifying as Black in comparison with the city population estimates at 31% (Charlotte Mecklenburg, 2017a). Race is associated with homelessness in this district.

Loneliness as a Risk Factor of Suicide-Related Behaviors

Loneliness has been highly correlated with suicide in literature as a social variable (Zamora-Kapoor et al., 2016), but researchers have also sought to understand its relation to suicide-related behaviors including ideation and attempts (Calati et al., 2019). Loneliness was found to be a significant predictor of suicide-related ideation and attempts among adolescents (King & Merchant, 2008). Calati et al. (2019) examined the role of loneliness on suicide-related thoughts and attempts by conducting a meta-analysis of 40 quantitative and qualitative studies. Findings indicated that subjective feelings and thoughts of loneliness had a major influence on suicide-related ideation and suicide attempt. Thus, it is important to understand the role of loneliness as a measure of loneliness with the sample population for this study.

Cui, Cheng, Xu, Chen, and Wang (2010) conducted a cross-sectional study of 8,778 adolescents and found strong evidence that loneliness was a moderator for the association between peer relationships and suicide ideation and attempts. In another cross-sectional study of 11,110 adolescents, researchers found that loneliness was also considered a risk factor for self-inflicted injuries among adolescents with protective factors including parent support and peer support (Klomek, Sourander, & Gould, 2010). Loneliness is found to be related to suicidal behaviors.

Kahn et al. (2015) recommended that the identification of socially isolative behaviors of adolescents should be motivators for suicide screenings as these social aspects influence suicide-related behaviors. This was a result of their study that found that poor social relationships were largely the reasons students were referred to school-based mental health programs (Kahn et al., 2015). While these poor relationships were

factors for referrals, it was suggested that the absence of relationships is also a predictor for suicide-related behaviors. Researchers further confirmed that loneliness was a factor towards motivating self-inflicted injurious behaviors such as suicide attempts (Pawlowska, Potembska, Zygo, Olajossy, & Dziurzynska, 2016)

Loneliness within the GCS district has been identified as an issue by the Leading on Opportunity Task Force Report (2017). This is attributed to the racial and economic divide within the city resulting in segregated schools and a segregated district. This report acknowledged that George County was a tale of two cities where opportunity and access to social capital are warranted to the wealthy, affluent, and predominantly White population. The makeup of this city has the potential to increase loneliness for Students of Color within the GCS district.

Based on the 2017 North Carolina George County Youth Risk Behavior Survey, approximately 25.2% of students reported feelings of loneliness. Multiracial high school students in the county had the highest rates of loneliness with 31.1% and Latinos were 28.9% (CDC, 2018a), while Whites had the lowest rates of loneliness at 20.1% (CDC, 2018a).

Opioid Misuse as a Risk Factor Suicide-Related Behaviors

"Substance use is a risk factor for both fatal and nonfatal overdoses, suicide attempts, and death by suicide" (Esang & Ahmed, 2018, p. 6). Individuals using drugs are 10-14 times at greater risk for suicide completed and opioids were most associated with suicide-related deaths (20%) than any other drugs (Wilcox, Conner, & Caine, 2004). Suicides related to opioid use have doubled in the last 15 years due to an increase in prescribed opioids as pain medications (Esang & Ahmed, 2018). It is suggested that

individuals using drugs who attempt suicide typically overdose purposely on the drugs as a means of suicide completion (Kwon, Yang, Park, & Kim, 2013). Furthermore, the duration of substance use is a risk factor for suicide-related behaviors (Dragisic, Dickov, Dickov, & Mijatovic, 2015). In 2017, approximately 40% of suicide and overdose deaths were linked to illegal use of opioids and rates were higher among Whites than Blacks or Asians (Bohnert & Ilgen, 2019).

Poorolajal, Haghtalab, Farhadi, and Darvishi (2016) conducted a meta-analysis of 43 studies to determine the association between substance use disorder and risk for suicidal ideation, attempt, and suicide. Substances included in the study were marijuana, cocaine, cannabis, and opioids. Based on findings, substance use disorders were strongly correlated to suicidal ideation, attempt, and suicide. They did not find that that one of these drugs was a greater predictor of suicide than the others. Accordingly, they suggested that illicit drugs could be considered as predictors for suicide-related behaviors (Poorolajal, 2016). Another recent longitudinal study of a population-based birth cohort examined risk factors for suicide ideation and attempts and found that all illicit drug use except for marijuana increased risk for suicide attempts and ideation (Mars et al., 2018).

On the other hand, Kaley, Mancino, and Messias (2014) conducted a secondary analysis of data from the 2011 YRBS Arkansas to understand the relationship between substance use and suicide-related behaviors. For this study, the focus was on variables of cannabis use, inhalant use, and opioid misuse. They found that among this population, the highest reported use was among cannabis (33.%) and the lowest use was with opioid misuse (13.2%). Yet, opioid misuse was more strongly associated with suicide-related

behaviors than other drugs. This study suggests the need for additional research regarding opioid misuse.

Based on the North Carolina Opioid Dashboard (2019), in 2017 there were approximately five deaths each day from unintentional opioid abuse or a total of 1,884 deaths. Additionally, there were 7,453 emergency room visits due to opioid overdose among North Carolina residents (NC Opioid Dashboard, 2019). Approximately 9% (n = 169) of deaths and 12% of ER visits due to opioid overdose were from George County (NC Opioid Dashboard, 2019). Nationally 14% of youth reported using opioids without a prescription or differently than how prescribed during their lifetime and the rate was slightly higher in North Carolina at 15% (CDC, 2018a). This rate was slightly higher in George County with 15.9% of children reporting that they used opioids with the highest rates among Multiracial students at 23.6% (Mecklenburg County, 2019).

Sadness as a Risk Factor of Suicide-Related Behaviors

Sadness has been linked to suicide attempts and adolescents with severe sadness are considered high risk (Shain, 2016). Sadness is defined as negative emotions and cognitions regarding personal future outcomes and the feeling of loss of power and control to reach positive outcomes (Beck, Weissman, Lester, & Trexler, 1974). Sadness is used as a criterion for diagnosing depressive disorders based on the Diagnostical and Statistical Manual (2013) published by the American Psychiatric Association and is categorized under a depressed mood. These symptoms can cause an individual to lose interest or pleasure in daily activities for at least a period of two weeks.

Liu, Gentzier, George, and Kovacs (2009) found that individuals who did not cope well with sad feelings or engage in distracting activities to manage their emotions

were at higher risk for a suicide attempt. Thus, they found that sadness was a risk factor if they not addressed appropriately. Approximately 31.5% of high school students nationally experienced sadness almost every day for a two week period and stopped engaging in usual activities as a result during the last year (CDC, 2018a). This rate was lower for North Carolina high school students with 29.4% reporting this level of sadness (CDC, 2018a). The rate in George County was consistent with the national average and was 31% (MCPH, 2019). However, the rates were highest among Multiracial children at 41.9% and 40.3% for Latino children (MCPH, 2019). White children had the lowest rates at 27.1% (MCPH, 2019).

Greening and Stoppelbein (2002) found that even when experiencing lower levels of depression or sadness, adolescents of color tended to have greater suicide risk. In a sample of 1,098 youth (28% African American, 72% White) from two southeastern high schools, researchers found that the interaction of ethnicity and depression was only significant with lower symptoms of depression for African American adolescents versus White students. Yet, when both populations presented with depressive symptoms, there was no significant difference in suicide risk.

Sibold, Edwards, Murray-Close, and Hudziak (2015) examined associations between physical activity, sadness, and suicidality in 13,633 high school students experiencing bullying in the District of Columbia participating in the 2013 YRBS. Utilizing logistic regression models, they found that of the 30% of participants indicating sadness, 8.2% also reported experiencing suicide-related ideation and/or attempt. Rates of sadness were also higher among racially diverse students than White students. They

also found that students experiencing bullying were two times as likely to feel sad and more likely to report suicide-related ideation and attempt than those not bullied (*p*<.001)

Theoretical Framework

It is important for theories of suicide to focus on multiple risk factors that influence suicide-related behaviors (Van Orden et al., 2010). The Escape Theory of Suicide acknowledges multiple risk factors that propel individual behavior towards suicide-related behavior (Beachler, 1979). Applying tenets from this theory, this dissertation research investigates the role of various factors in incidences of suicide-related behaviors This study seeks to affirm the voices and experiences of diverse high school students. In essence, the self-reported data from students in this district help to frame the narrative and research. This theory is explained further and explanations provided to clarify how they align with this research.

The Escape Theory of Suicide

In order to explain the causes of suicide-related behaviors including suicide-related thoughts and attempts, Baechler (1979) proposed that suicide-related behaviors were a means to end negative experiences, respond to an internal or external problem, and was a behavior and not an act. Bachler (1979) categorized suicide as all-encompassing and believed that prior definitions failed to consider suicide-related behaviors including ideation, plans, and attempts. Thus, suicide was defined as "all behavior that seeks and finds the solution to an existential problem by making an attempt on the life of the subject" (Baechler, 1979, p. 74). He believed that the inability to reach life goals and aspirations is what triggers suicidal thoughts. These thoughts then become internalized and as a means to end these negative thoughts, the individual attempts to find

a solution for temporary relief. Suicide attempts and suicide provide a brief immediate response for ending the negative internal pain. Furthermore, Baumeister (1990) built upon the Escape Theory of Suicide and developed six main steps to explain suicide-related behaviors in order to increase the applicability and to account for ideation and planning. The steps include the following and are applied to this research:

1) A situation or experience occurs and outcomes do not meet the internal standards of an individual (Baumeister, 1990). Examples of situations based on this research include cyberbullying, homelessness, and substance use.

2) The individual begins to internalize these negative outcomes as a personal failure (Baumeister, 1990).

3) The individual begins to feel a sense of inadequacy and blames themselves for recent disappointments (Baumeister, 1990). This rumination reinforces negative emotions such as sadness and loneliness.

4) Negative emotions and behaviors abound for the individual (Baumeister, 1990).

5) The individual becomes numb and wants to escape from the negative thoughts and seeks to terminate the thoughts (Baumeister, 1990).

6) The person becomes more willing to attempt suicide in order to escape from their awareness of the problem and perceived failures (Baumeister, 1990).

The Escape Theory of Suicide helps to explain why the rates of suicide-related behaviors might be higher for Students of Color than for White students. The cumulative

effects of negative situations or circumstances, experienced as a result of systemic oppression, have the propensity to perpetuate this desire to escape among Students of Color. Locally, in this district, this is applicable to the segregated neighborhoods, schools, high rates of homelessness for Black students, and high rates of suicide attempts from Multiracial students. The risk experienced may increase the risk of suicide-related behaviors. Additionally, this theory suggests that even suicide attempts offer a sense of relief and escape for the individual (Baumeister, 1990). As a result, suicide-related behaviors "may help the person to escape the awareness of problematic life circumstances and inadequacies of self" (Baumeister, 1990, p. 108).

A downfall of this theory rests in its neglect to define the role of race with suicide-related behaviors. Based on the data, race is an important variable to consider for suicide-related behaviors as rates are higher for Students of Color. Understanding how suicide-related behaviors may differ based on race is an important component of this research. Additionally, the experiences of diverse public high school students in this district differ and are individualized (Delgado, Stefancic, & Harris, 2017). As a result, tailored approaches to teenage suicide prevention efforts that focus on areas of higher risk for Students of Color within this district are warranted instead of a one size fits all approach. The higher rate of Students of Color experiencing suicide-related behaviors has been larger ignored in the literature. Instead, the focus has been on suicide completions for which White students have the highest rate. This research seeks to affirm the data that highlight specific areas of concern for Students of Color.

Summary

School violence, heavy reliance on technology, and economic instability are contemporary issues that increase the likelihood of experiencing negative emotions, behaviors, and decision-making among adolescents. Coupled with biological and developmental changes occurring for this population, adolescents are becoming more prone to seek options for escaping from harsh realities. These escape behaviors are in alignment with suicide-related behaviors which include suicide-related ideation, suicide planning, and suicide attempts. Researchers have found that adolescents are escaping from identified predictors of cyberbullying, homelessness, loneliness, opioid misuse, and sadness. As adolescents experience these factors, they are more prone to engage in suicide-related behaviors in order to escape.

Limited research has examined the role of race with suicide-related behaviors with racially diverse populations (Cheref, Polanco-Roman, Gadol, & Miranda, 2015; Cui et al., 2010; De Luca, Wyman, & Warren, 2012) and instead has focused primarily on predominantly White student populations. Furthermore, research on suicide-related behaviors and racially/ethnically diverse students has been contradictory. Consequently, suicide-related behaviors are highest among racially diverse students in the state of North Carolina and the GCS district. While White students are 2.3 times more likely to die from suicide in the district, (MCPH, 2019), Students of Color are more likely to think about, plan, and attempt suicide. Thus, further investigation with race and suicide-related behaviors is warranted to understand the role of race. As suicide-related behaviors are highly correlated with future suicide completions, it is important to examine potential predictors for suicide-related behaviors in this district to save lives. This study utilizes

the Escape Theory of Suicide as a framework for examining suicide-related behavior data to understand factors that increase the risk for racially/ethnically diverse high school students in an urban school district. This study will provide strategies for suicide-related behavior prevention for researchers, schools, and community stakeholders. Risk factors of cyberbullying, sadness, homelessness, loneliness, and opioid misuse are further explored through this quantitative study. The association of these factors to the suicide attempt data will help to ascertain risk factors for racially/ethnically diverse teenagers. Understanding the influence of these predictors with suicide-related behaviors among racially diverse adolescents is the guiding purpose of this research. Additionally, understanding the moderating effects of race with the identified predictors and suicide-related behaviors will provide further understanding regarding the role of race as it pertains to suicide-related behaviors. Accordingly, this study is timely, critical, and necessary.

CHAPTER 3: METHODOLOGY

"I have friends who've tried suicide many times and haven't succeeded. I myself made

an attempt, so I have a connection with that sort of group of people who have tried

suicide at one time in their lives. – Judy Collins

The primary purpose of this dissertation research is to examine predictors of teen

suicide-related behaviors for racially/ethnically diverse high school students in the GCS

district with a focus on variables of cyberbullying, sadness symptoms, homelessness,

loneliness, and opioid misuse. This research focuses on suicide-related behavior data

within the GCS district for two reasons: a) the rates of teen suicides increased in 2017

making it the second leading cause of death among teenagers in this district, and b)

suicide attempts are highest among Students of Color in the GCS district and are strongly

correlated with future suicides. Thus, the study seeks to determine if established

predictors in the research are more strongly related to suicide-related behaviors based on

race in order to develop a more tailored approach for suicide attempt prevention efforts,

particularly within this district. It aligns with the framework of the Escape Theory of

Suicide through the selection of variables found to predict suicide-related behaviors and

allows for further testing of this theory among racially diverse youth. This chapter

addresses the methodology of the study and consists of (a) study design, (b) research

questions, (c) sample, (d) data source, (e) survey reliability and validity, (f) variables, (g)

research methods, (h) research involving human subjects, (i) data procedures, (j) data

analysis, (k) limitations and delimitations. Each of these areas will be discussed in more

detail in this chapter to provide additional insight regarding this study.

Study Design

This study utilized a non-experimental, quantitative approach for the purposes of the "identification of factors that influence an outcome" (Creswell, 2009, p. 18). This study focused on factors of race, cyberbullying, sadness, homelessness, loneliness, and opioid misuse and the outcome of suicide-related behaviors. A recent existing dataset captured these variables and focused exclusively on adolescents from the GCS district. The use of an existing secondary data set for this district afforded the opportunity to study a large predominantly non-white sample of high school students for the purposes of analysis of the race variable.

In order to examine these factors more closely within this district, a logistic regression model was utilized with binary predictor and outcome variables (Hilbe, 2009). Cyberbullying, homelessness, opioid misuse, sadness, race, and loneliness are included as covariates. Applying the proposed theoretical framework to this study, Students of Color encompassing Students of Color within three racial/ethnic groups (Black, Latino, Multiracial) were examined with White as a reference group. The need for escape as an outcome variable was represented with the suicide-related behaviors variable which measured whether participants experienced suicide-related ideation, a suicide plan, or suicide attempt.

The theoretical framework for this study is listed in Figure 7 with the inclusion of race as a predictor of suicide-related behaviors. SPSS version 26 was utilized to ascertain the first research question. Logistic regression was conducted to identify factors influencing suicide-related behaviors among diverse students in the GCS district.

Figure 7. Proposed theoretical framework with predictors.

For the second research question, SPSS PROCESS was utilized to determine moderating effects. "An association between two variables X and Y is said to be moderated when the size or sign depends on a third variable or set of variables W" (Hayes, 2017, p. 8). Applied to this study, the association between the predictor variable (X) and suicide-related behaviors (Y) is hypothesized to be moderated by the combined variable of race and predictor variable (W). To account for the theory of race being a moderator of predictors of suicide-related behaviors, an additional framework was proposed. This framework introduced the moderating effects of race with the identified predictors and outcome variables. The inclusion of race was hypothesized to increase the relationship between predictors and suicide-related behaviors. The graph is depicted in Figure 8. As a result, I utilized moderation analysis to determine if race served as a moderator for the association between identified predictors and the outcome variable.
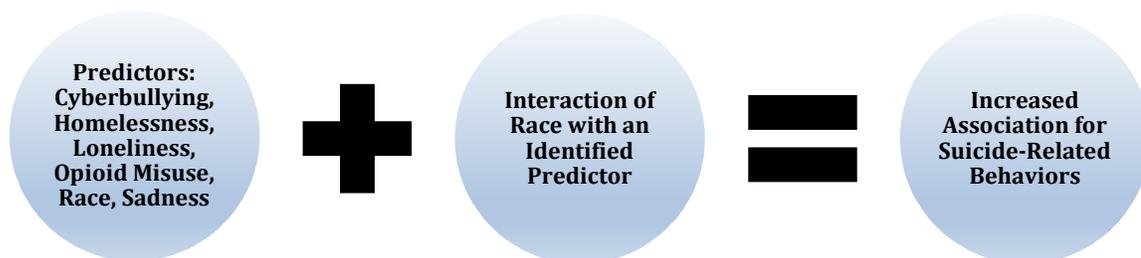
Figure 8. Proposed theoretical framework with moderation.

Research Questions

The research questions for this non-experimental quantitative study include the following:

1. Does cyberbullying, homelessness, loneliness, opioid misuse, sadness, and race predict teen suicide-related behaviors among public high school students in the George County School district?

2. Does race moderate the relationship between suicide-related behaviors and identified predictors for Students of Color (Black, Latino, Multiracial, White) in the George County School district?

The hypothesis for the first research question was that cyberbullying, homelessness, opioid misuse, sadness, loneliness, race were found to be significant predictors of suicide-related behaviors for high school students in the GCS district.   For the second question, it was hypothesized that race was a moderator increasing the relationship between the predictors and outcome variable of suicide-related behaviors.

Description of the Sample

The GCS district had approximately 147,428 students during the 2017-2018

academic year. The sample for this study encompasses high school students who

participated in the 2017 North Carolina George County Youth Risk Behavior Survey. In

2017, George County School district had a total of 2,233 high school students in grades

9-12 who participated in the survey when it was rendered. Of the 2,233 students

participating in the survey, 2,007 met the inclusion criteria of identifying as Black,

Latino, Multiracial and White on two survey questions inquiring about race and ethnicity.

As a result, 10% (n=226) of participants were excluded from this study. The sample

included 67.4% (n=1,352) Students of Color and 32.6% (n=655) White students. This

slightly varies from the demographic data for this county which is 42% are White and

58% Students of Color (United States Census, 2018). However, it is representative of the

GCS district and students attending public and charter schools. Based on the 2017-2018

academic year enrollment data, in the GCS district 38.1% of students were Black, 24.1%

Latino, 2.5% Multiracial, and 28% White (GCS, 2018). Collectively, Students of Color

comprised 72% of the GCS district population.

Data Source

The data utilized for this study was from the North Carolina GCS district Youth

Risk Behavior Survey (YRBS) rendered in 2017. The YBRS is an annual survey

rendered to youth nationally, statewide, and locally and overseen by the Centers for

Disease Control and Prevention. The purpose of the survey is to collect and track data

regarding identified risk behaviors for youth in the United States (CDC, 2018c).

Additionally, understanding prevalence rates among youth for unhealthy behaviors has

been a key feature of the survey (CDC, 2018c). The Youth Risk Behavior Survey

currently targets six primary risk behaviors for adolescents which include the following:

a) unintentional injuries and violence, b) sexual behaviors, c) tobacco use, d) alcohol and drug use, e) unhealthy eating habits, and f) physical activity (CDC, 2018c). This survey was selected as it captures self-reported data versus relying solely on emergency department visits of teenagers presenting with suicide-related behaviors which is not all encompassing (North Carolina Institute of Medicine, 2012).

At a state level, the North Carolina Youth Risk Behavior Survey is administered every odd year in the spring by the NC Healthy Schools division. It was adapted from the Centers for Disease Control Youth Risk Behavior Survey and includes additional questions specific to the Healthy North Carolina 2020 objectives (Townsend, 2014). The survey utilizes probability samples of students and schools. The survey version utilized for this test was the 2017 North Carolina High School Youth Risk Behavior Survey. GCS district is responsible for the administration of the survey and seeks to identify a representative sample of high school students in the district. Schools were randomly selected to participate and multiple-class sampling was used randomly to select classrooms in the schools. It was administered to students by paper and students were instructed to indicate their responses on a provided bubble answer sheet. The survey contained a total of 99 questions on the survey. Participants were informed that participation is voluntary and that if they are uncomfortable answering a question, they can leave it blank. The survey was administered to high school students enrolled in 28 different public and charter schools within the district (MCPH, 2018). Random selection was utilized for classes within schools for participation. Every student in the selected class was invited to participate. Parents or legal guardians provided consent in order for students to participate in the survey. Following informed consent, participants then

completed the survey in their selected class. The survey takes approximately one hour to complete.

<div align="center">Survey Reliability and Validity</div>

Reliability and validity of the Youth Risk Behavior Survey has been examined by multiple researchers (Brener et al., 2002; Brener, Collins, Kann, Warren, & Williams, 1995; Howard, Weiler, & Haddox, 2009; Zullig, Scott, Patton, & Ubbes, 2006). May and Klonsky (2011) tested the validity of the suicide-related behavior questions on the Youth Risk Behavior Survey with a sample of 386 high school students from New York. Using four validated questionnaires, the researchers utilized convergent and discriminant validity to examine relationships between the suicide-related questions and criterion variables. They found that the suicide-related behavior questions demonstrated agreement with similar questions from other surveys with a phi coefficient ranging from .31 to .71. Next, using discriminant analysis, they found that suicide-related behavior questions on the YRBS had a stronger association with current suicide risk (May & Klonsky, 2011). Thus, the suicide-related questions appeared to valid constructs for measuring suicide-related behaviors. NeBrener et al. (2002) found that the risk behaviors identified by students in the survey were reliable over time. Furthermore, Howard, Weiler, and Haddox (2009) confirmed reliability and validity with the non-medical use of prescription drugs on the survey. Using 18 different measures, they found that 14 measures revealed near almost perfect reliability based on simple kappa coefficients while three were moderate and one was in the poor range. As a result, they concluded that the question on the Youth Risk Behavior inquiring about non-medical use of prescription drug questions (opioid misuse) appeared to be valid and reliable. Brener,

Billy, and Grady (2003) found that cognitive and situational factors experienced by participants do not threaten the internal validity of the survey.

Variables

Horowitz, Czyz, and King (2015) suggest that in order to identify predictors of suicide-related behaviors, past behaviors and current thoughts need to be added to the model. The predictor variables are based on singular questions from the Youth Risk Behavior Survey (Table 1). These variables were recoded into dummy variables. Race which was categorized as Black, Latino, and Multiracial with White as the reference category. Cyberbullying which included reported victim of cyberbullying or no reported victim of cyberbullying was included within this study. Homelessness was recoded based on a reported permanent residence or non-permanent residence question on the survey. Sadness was recoded based on reported sadness or no reported sadness. Loneliness was coded based on reported feelings of isolation and no reported feelings of isolation. Opioid misuse was measured based on reported misuse of prescription pain medication or no reported misuse of prescription pain medication. Understanding predictors helps to provide further insight regarding relationships between variables (McMillan & Schumacher, 2010). All variables utilized "1" as the group or variable of interest and "0" as the reference category.

Table 1

Variables and Framework

Framework	Variables	Explanation	Coding
Race	Students of Color	Covariate Moderating Variable	0 = White 1 = Black, Latino, Multiracial
Situation or Experience Occurs	Cyberbullying	Covariate	0 = No 1 = Yes
	Homelessness	Covariate	0 = No 1 = Yes
	Opioid Misuse	Covariate	0 = No 1 = Yes
Negative Emotions and Behaviors	Loneliness	Covariates	0 = No 1 = Yes
	Sadness	Covariate	0 = No 1 = Yes
Suicide-related Behaviors	Suicide-related Behaviors (suicide-related ideation, suicide plan, suicide attempt)	Outcome Variable	0 = No 1 = Yes

Suicide-Related Behavior Outcome Variable

Suicide-related behaviors are defined as thoughts, plans, and attempts that are aimed at ending personal life but do not result in death (Silverman et al., 2007). Horowitz, Czyz, and King (2015) suggest that in order to identify predictors of suicide-related behaviors, past behaviors and current thoughts need to be added to the model. A suicide-related behavior outcome variable that included past behavior and thoughts was computed as a binary, dichotomous variable. This variable was based on the survey question about thoughts of seriously considering attempting suicide (Q26), made a plan to attempt suicide (Q27), and attempted suicide (Q28). This variable is coded as binary (yes=1, no= 0). If the participant reported that they had engaged in suicide-related

ideation, suicide-related plan, and/or suicide attempt, then they were listed as engaging in suicide-related behaviors. According to Arias et al. (2016), the suicide outcome variable helps to identify risk for suicide-related behaviors which are predictors of future suicide completions. Thus, participants who affirmed engaging in suicide-related ideation, suicide-related plan, or suicide attempts were marked as engaging in suicide-related behaviors.

Cyberbullying

Cyberbullying is defined as bullying that occurs on technological platforms such as computers, cell phones, and tablets through text messaging, social media, email, and gaming (U. S. Department of Human and Human Services, 2019). Cyberbullying was utilized for this study as a bullying variable and included whether a student was electronically bullied (cyberbullying) or not electronically bullied (no cyberbullying). Cyberbullying has gained increased attention in the literature with its connection to suicide, technology, and social media. This variable affirmed whether students in the GCS district experienced cyberbullying in the past 12 months. The question on the survey informs participants to count bullying through texting and social media platforms such as Facebook and Instagram as forms of cyberbullying.

Loneliness

Loneliness is self-perceived isolation or lack of social connections (London & Ingram, 2018). The loneliness variable was based on a 5-point Likert question scale which inquired if the participant agreed or disagreed that they felt alone in their life. Answer choices included strongly agree, agree, not sure, disagree, and strongly disagree.

This variable was coded into a binary variable with perceived loneliness (strongly agree, agree, not sure) and no loneliness (disagree, strongly disagree).

Homelessness

Homelessness addresses the lack of a permanent residence (United States Department of Education, 2018). For the homelessness variable, the question on the YRBS inquired if the participant did not reside within the home with their parents/guardians because they had no permanent residence. Participants who affirmed that they did not have a permanent residence were marked as experiencing homelessness versus those who reported having a permanent resident were not marked as homeless.

Opioid Misuse

Opioid misuse is defined as taking too much prescription pain medication, taking someone else's medicine, or not taking medication as prescribed (U.S. National Library of Medicine, 2019). The opioid misuse question inquired about if the participant took prescription drugs without a doctor's prescription or differently than prescribed. As such, the opioid misuse variable is limited to prescription drug opioids only. This variable was recoded as binary variables with yes being the target group and no being the reference category.

Race

Of the 2,233 students participating in the survey, 6.6% (*n*=148) identified as solely Asian, American Indian, Alaska Native, Native Hawaiian or Other Pacific Islander. Participants identifying as part of these racial/ethnic groups were excluded from the study as participation rates were low for this population and rates were lower for these racial groups in the state and district. As a result, our sample only included

participants identifying as White, Black, Latino, and Multiracial which was a total of

2007 participants. Of these participants, 34.2% (*n*=686) were Black, 26% (*n*=521) were

Latino, 7.2% (*n* = 145) were Multiracial, and 32.6% (*n*=655) were White. For studies

pertaining to adolescents, self-report by adolescents was recommended as a best practice

method for understanding how they perceive their racial identity (Charmaraman et al.,

2014).

The survey asked a separate question about if participants identified as Hispanic

or Latino. They were then asked to define their race. Charmaraman et al. (2014)

recommend clearly defining in research studies how Latino is classified within studies.

For this study, if a participant identified as Latino and checked a different box for race,

then race was excluded and inclusion as a Latino was counted.

Sadness

Sadness is defined as negative thoughts or emotions that situations and

circumstances will not improve (CDC, 2017). For the sadness variable, the question on

the survey asked if, during the last 12 months, the participant felt sad or hopeless almost

every day for two weeks or more in a row. It also asks within the question if this resulted

in them stopping some of their usual activities. The answer choices for this variable were

binary with yes/no options.

Research Methods

Data was screened to determine outliers, missingness, and patterns. Missing data

was analyzed to determine if it was missing at random and patterns of missingness.

Outliers were examined and removed in order to reduce bias with the results. If missing

data was found to be missing completely at random or missing at random, then multiple

imputation needed to be considered. Multiple imputation is identified as the most

popular method for the creation of multiple datasets and pooling of results (Little &

Rubin, 2002).

Following the screening of the data, research methods utilized for this study

included descriptive analysis, logistic regression, and moderation testing. Descriptive

analysis was utilized to report, describe, and summarize the data from this study in an

orderly and meaningful way (Vetter, 2017). Frequencies included demographics of the

sample population and binary variables were reported. If data is imputed, then

frequencies will need to be run on pooled data.

This study utilized logistic regression to ascertain the association between the

predictor variables and suicide-related behaviors with each subgroup. Logistic regression

was utilized to understand predictors for suicide-related behaviors among the subgroups.

This analytic tool was utilized to predict group membership based on predictors and is

recommended when the outcome variable is categorical (Hahs-Vaughn, 2017). The

assumptions of independence of errors, linearity, and noncollinearity are tested for

logistic regression (Hahs-Vaughn, 2017). The equation for the logistic regression model

is as follows (Hahs-Vaughn, 2017):

$$P(Y = 1) = \frac{Odds(Y=1)}{1+Odds(Y=1)} = \frac{e^{a+\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3}}{1+e^{a+\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3}}$$

The P(Y=1) indicates the probability of success for the outcome variable of suicide-

related behaviors. The Odds(Y=1) portion of the equation reflects the odds of the

outcomes of the suicide-related behaviors (suicide-related behaviors, no suicide-related

behaviors). The 1+Odds(Y=1) reflects the probability closer to 1 that participants will

experience suicide-related behaviors. The $e^{a+\beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3}$ portion of the equation

reflects the logit of Y or in other words for "each one unit of change in the independent variable, the logistic regression coefficients represent the change in the predicted log odds of being in a category" (Hahs-Vaughn, 2017, p. 123). The logit links independent variables to the probability of the outcome variable. This focused on the relationship between the predictor variables and the probability of the outcome variable occurring (Pampel, 2000). Goodness of fit for the model was tested with the Hosmer-Lemeshow test allowed for testing of a model with categorical variables with a goal of non-statistical significance (Bewick, Cheek, & Ball, 2005) and the accuracy of the classification tables.

The moderator for this study is race (Students of Color = Black, Latino, Multiracial). Moderator variables "affect the strength and/or direction of the relation between a predictor and an outcome: enhancing, reducing, or changing the influence of the predictor" (Fairchild & MacKinnon, 2009, p. 90). As a result, the equation for the moderating variable as recommended by Fairchild and MacKinnon (2009) is as follows:

$$Y = i_5 + \beta_1 X + \beta_2 Z + \beta_3 XZ + e_5$$

In this equation i_5 is the intercept, β_1 represents the coefficient of the independent variable, X is the independent variable, Y is the outcome variable, β_2 is the moderator coefficient of the moderator, Z is the moderator, e_5 represents the residual, β_3 is a moderation effect estimate (Fairchild & MacKinnon, 2009).

Research Involving Human Subjects

In order to request access to the restricted 2017 GCS YRBS district data, permission was sought from the university's Institutional Review Board (IRB). The application was completed to request permission to access secondary data from the GCS district for this dissertation research. Concurrently, a data request application was

submitted to the GCS district to ask permission for access to the 2017 data file. Once this

application was submitted, it was uploaded to the IRB application. Final approval was

then sought from the GCS district for access to the data file. The data file was provided

and data security measures including the construction of a Data Security Plan were taken

to ensure confidentiality and privacy of the data set. The data was retrieved as a STATA

file and converted over to the Statistical Package for Social Sciences (SPSS) for review.

The file exclusively contained variables requested from the application. The study was

reviewed by the University's Institutional Review Board (#19-0171) on May 31, 2019,

and a determination was made that research or research-like activity did not require IRB

approval as it does not constitute human subjects research. However, requirements for

the research board from the district study site required a data security plan and use of

pseudonyms and anonymity for the district in the study.

Data Procedures

Assumptions of the logistic regression analysis require non-collinearity, linearity,

fixed values of x and independence of errors (Hahs-Vaughn, 2017). These assumptions

were tested. Conditions also include non-zero cell counts, non-separation of data, and

review of influence values (Hahs-Vaughn, 2017). The assumptions and conditions are

reported. The goodness of fit and regression coefficients is reported. Logistic regression

models help to examine the influence of risk factors for suicide attempts for high school

students in the GCS district based on race.

Data Analysis

The SPSS data file was screened for missing values, assumptions, and outliers.

Using SPSS, a descriptive analysis was conducted based on all of the variables for this

study including demographics of the population. Demographic variables including age, grade level, and gender were reported in order to provide more details regarding the sample. Following the descriptive analysis, independent variables for this study including cyberbullying, homelessness, loneliness, sadness, opioid misuse, and race were inserted into a logistic regression model in SPSS. The outcome variable is suicide-related behaviors. Amini et al. (2016) recommend logistic regression models in order to predict the covariates of teen suicide attempts and determine the odds ratio. Once the model was run, goodness of fit of the model was tested. Regression coefficients (Baron & Kenny, 1986) were reported to understand the moderating effects of race. Odds ratios were reported for variables proving to be significant within the model. Variables that were indicated as significant predictors of suicide-related behaviors were then reported. Variables that were not significant in this model were not included in the next analysis using SPSS PROCESS to test interaction.

Testing the moderating effects of race was allowable and the race variable (Students of Color) was significant in the previous logistic regression model. The moderating effects of race were tested using SPSS PROCESS (Hayes, 2012). This method is utilized for understanding moderating effects with binary variables and helps to center the variables. The first imputed dataset was utilized for testing moderation as it contains data for all variables and does not have much variance from the original dataset. For this model, each variable that was significant in the logistic regression model was entered with the other significant variables and with an interaction variable. Each significant variable was entered into the model and results were reported for each test ran. This analysis produced regression coefficients and provided information regarding the

significance of the predicted moderator. The analysis from SPSS PROCESS was utilized to develop graphs detailing slopes and interaction. Moderating effects were reported for each analysis.

Limitations and Delimitations

Despite the noted implications of this study, there are potential limitations. The study was based on self-reported data from high school students participating in the completion of the 2017 Youth Risk Behavior Survey. As the survey was rendered at school, it only included responses from students who attended school on the days it was rendered (CDC, 2018c). Thus, it failed to capture responses from students who may have dropped out of school or were absent from school for varying reasons.

Secondly, the survey has 99 questions and takes approximately an hour to complete. As a result, fatigue was definitely possible with the sample as well as recall bias for some of the measures that ask about behaviors over the past year. Additionally, the survey asked fairly sensitive questions that may result in underreporting or overreporting by students (Rodericks, Vu, Holmes, Ryan, & Sentell, 2018).   Patterns with the survey showed that as students answered more sensitive questions, their response rates drop and missing values increased. As a result of the missing data, multiple imputation was computed. Multiple imputation was the recommended method for missing at random results as it helped to reduce bias (Sterne et al., 2009),

Another limitation concerns the selected sample for this study. Asian, Pacific Islander, Native American, and Native Hawaiian students were excluded from this sample for two primary reasons. First, these populations have not been noted to have higher rates of attempts for suicide-related behaviors based on existing research.

Secondly, the count for these populations was fairly low in the sample. Yet, these are also racial populations for which there is limited research regarding their suicidality. Nonetheless, their representation is also lower on the national YRBS Surveillance Reporting System (CDC, 2018c). However, this could be addressed in future research and the inclusion of these groups is strongly recommended.

Delimitations include variables that may have an effect on the result but are not included in the study. Risk factors associated with suicide-related behaviors are numerous and could not all be included in this survey. Thus, I chose variables that were highly correlated to suicide-related behaviors based on the literature and relevant to critical issues within the district. Variables not included were gender, socioeconomic status, academic performance, sexual identity, abuse and neglect, exposure to suicide, family conflict, physical illness, and mental disorders (Van Orden et al., 2010).

Despite noted limitations and delimitations, results from this study are plausible and provide further insight regarding factors influencing suicide-related behaviors among youth in an urban southeastern city. Accordingly, the results noted from this study should be considered in spite of the limitations.

Summary

This chapter provided details regarding the methodology for this research. It outlined the purpose of the research, research questions, sample, methods and design, data sources, data procedures, data analysis, and limitations. Aligned with the Escape Theory of Suicide, this study examined factors that influence suicide-related behaviors among racially diverse high school students in an urban school district. It also sought to understand if race was a predictor for suicide-related behaviors as well as a moderator.

The 2017 Youth Risk Behavior Survey was used for this study as it contained the variables for the study and was completed by high school students in the GCS district. The data from this survey included a sample of 2,007 participants and was comprised of a racially diverse sample. The variables examined included cyberbullying, homelessness, loneliness, opioid misuse, race, and sadness. The first research question was answered utilizing logistic regression analysis. Next, SPSS PROCESS was used to ascertain if race was a moderator of suicide-related behaviors. The next chapter details the findings from the analysis.

CHAPTER 4: RESULTS/FINDINGS

"I think suicide is sort of like cancer was 50 years ago. People don't want to talk about it, they don't want to know about it. People are frightened of it, and they don't understand, when actually these issues are medically treatable." Judy Collins

The purpose of this research is to determine if cyberbullying, homelessness, loneliness, opioid misuse, sadness, and race predict suicide-related behaviors among racially diverse high school students in GCS, a southeastern urban school district. The GCS district was selected because it features a racially diverse population and rates for suicide-related behaviors are higher for Students of Color. Additionally, in 2017 suicide completions became the second cause of death of adolescents in George County. As a result, this result is concentrated on data from the 2017 academic year to determine if certain factors predict suicide-related behaviors. Moreover, this research seeks to determine if race is a moderator with the predictor variables and outcome variable. Aligned with the methodology from the previous chapter, this chapter provides the results from the analysis, descriptive and inferential statistics, and responds to the initial research questions and hypotheses. It provides further details regarding the findings from the data analysis.

Data Screening

The analysis for this study initially began with data screening. The data was cleaned and variables were recoded prior to analysis. The suicide-related behavior outcome variable was computed as a binary variable to include suicide-related ideation, suicide planning, and suicide attempt. Cyberbullying, homelessness, loneliness, opioid

misuse, sadness, and Students of Color were coded as binary, dichotomous variables. Following recoding, the data was also screened for goodness of fit, assumptions, and outliers. There were no outliers for the dataset. Nonresponses to the variables were listed as missing data.

Each variable was screened for missingness with the aim of having no more than 5% missing data from each variable. Two of the six variables had missing values above the 5% threshold and ranged from 7.3% to 7.7%. Loneliness was indicated as missing with 7.3% (n = 146) of the data and homelessness was indicated as missing with 7.7% (n = 154). Of the 2007 records, 20% (n = 402) of the records were incomplete.

Missing Data Analysis

As a result of the missing data, further analysis was required to understand patterns. A missing value analysis was conducted in SPSS and the Little MCAR's test indicated that missing data could be treated as missing at random. Missing at random signifies that there may be systemic patterns between missing values and observed values; however, missingness can be explained by other observed variables in the dataset (Bhaskaran & Smeeth, 2014).

Multiple Imputation

As results from the missing value analysis indicated data were missing at random, multiple imputation was utilized. Multiple imputation allows for the creation of multiple datasets and pooled results. Multiple imputation utilizing SPSS was conducted for the missing values with 20 imputations. Graham, Olchowski, and Gilreath (2007) recommend 20 imputations for 10% to 30% of missing information within the dataset. The results from these imputations will then be pooled for unbiased estimates (Van

Buuren, 2018). The predictor and outcome variables for the model were included in the imputation and no auxiliary variables were included (Rezvan, Lee, & Simpson, 2015). The imputed datasets were then utilized to ascertain results from the analysis. Pooled data were utilized for the reporting of logistic regression results.

Descriptive Analysis

Following imputation, a descriptive analysis was conducted. Frequencies were calculated for each of the variables. Results indicated that the final sample for this study included 2,007 school students (Table 2). Black students were most represented in the sample followed by White students, Latino students, and Multiracial students. White students comprised only 32.6% of the sample size indicating that this dataset represented a racially diverse sample. Of the 2,007 participants, approximately 53.1% (n = 1065) were female and 46.6% (n = 935) were male. Additionally, there was representation in each grade level in high school but the most representation was amongst 9th-grade students (29.7%) and the least representation amongst 12th-grade students (17.9%). In regards to age, there were more 16-year-old participants with 27.2% (n = 562) of the sample than any other age group.

Table 2

Demographics of Sample Population and Frequencies (n = 2,007)

Variable	N	Percentage
Race		
Black	686	34.2
Latino	521	26.0
Multiracial	145	7.2
White	655	32.6
Gender		
Female	1065	53.1
Male	935	46.6
Grade		
9th grade	594	29.6
10th grade	527	26.3
11th grade	512	25.5
12th grade	358	17.8
Age		
12 years or younger	5	0.2
13 years old	6	0.3
14 years old	218	10.9
15 years old	544	27.1
16 years old	562	28.0
17 years old	438	21.8
18 years old or older	229	11.4

Next, a descriptive analysis of frequencies from the independent and dependent variables was conducted using the pooled data (Table 3). Frequencies were run on each of the variables indicated for this study. For the sample, approximately 23% (n = 463) of the sample reported engaging in suicide-related behaviors or at least one in five students. Approximately 14.3% (n = 288) reported that they were victims of cyberbullying. Only 3.5% (n = 70) of the students reported that they had recently experienced homelessness. Approximately 15.7% (*n*=316) of students reported that they had engaged in opioid misuse. Of the sample, 44% (n = 833) reported that they felt alone or experienced loneliness and 33.3% (n = 668) reported feelings of sadness for at least a two-week period over the past year. Three variables had rates higher than the outcome variable

which included sadness, loneliness, and race. The other variables had rates lower than the outcome variable with homelessness having the lowest percentage at 3.5% (*n*= 70). Fewer students indicated that they were homeless in the district.

Table 3

Descriptive Statistics of Variables

Variables	N	Values	Frequency
Suicide-related behavior	2007	0 = No	76.9% (*n*=1544)
		1= Yes	23.1% (*n*=463)
Cyberbullying	2007	0 = No	85.7% (*n*=1719)
		1= Yes	14.3% (*n*=288)
Homeless	2007	0 = No	96.5% (*n*=1937)
		1= Yes	3.5% (*n*=70)
Opioid misuse	2007	0 = No	84.3% (*n*=1691)
		1= Yes	15.7% (*n*=316)
Loneliness	2007	0 = No	56.0% (*n*=1124)
		1= Yes	44.0% (*n*=883)
Sadness	2007	0 = No	66.7% (*n*=1339)
		1= Yes	33.3% (*n*=668)
Students of Color	2007	0 = No	32.6% (*n*=655)
		1 = Yes	67.4% (*n*=1,352)

Logistic Regression Analysis

After gathering descriptive detail regarding the sample, an analysis was conducted to answer the first research question. Research question one inquired if cyberbullying, loneliness, homelessness, opioid misuse, sadness, and race predict teen suicide-related behaviors among public high school students in the GCS district. To answer this question, logistic regression was performed in SPSS. Prior to running this analysis, assumptions for logistic regression were tested. These assumptions included (a) independence of errors, (b) noncollinearity. The noncollinearity test indicated a VIF value of 1.093 and a tolerance of .915. Intercorrelations among the predictors demonstrated that correlation coefficients among these variables were less than .90

(Tabachnick & Fidell, 2012). Additionally, the condition index value was 1.000 which suggests that there was no cause of concern for collinearity (Hahs-Vaughn, 2016). There were no outliers and Cook's distance values were all below 1.0. Leverage values remained under 0.001 indicating that outliers were not an issue within the dataset (Hahs-Vaughn). Accordingly, all cases were retained within this dataset.

Logistic regression was performed with the outcome variable and predictor variables (Thatcher, Reininger, & Drane, 2002). Suicide-related behaviors was entered as the outcome variable and cyberbullying, homeless, loneliness, opioid misuse, sadness, opioid misuse, and race were predictor variables. The Hosmer and Lemeshow test was not statistically significant, χ^2 ($N = 2007$) $= 5.750$, df $= 6$, p $< .452$, which indicated good fit for the model. The results indicated Cox and Snell $R^2 = .222$; Nagelkerke $R^2 = .336$. As a result, the predictors distinguish between students who engage in suicide-related behaviors and those who do not engage in suicide-related behaviors. The variables were further screened for multicollinearity which was not present. The collinearity test was conducted and there were no VIF values above 10 indicating the assumption was met for the absence of multicollinearity.

Of the six variables in the model, five were significant predictors between participants who engage in suicide-related behaviors and those who did not. Significant variables in the model included cyberbullying, loneliness, opioid misuse, sadness, and student of color. All variables except Students of Color were significant at the $p<.001$ level of significance. Students of Color was significant at the .05 level of significance. The variable not significant within this model included homelessness ($p = .136$).

In the model, the odds ratio indicated the relationship between each independent variable and the dependent variable. It suggested that for students who reported being sad, there was 5.5 times greater likelihood they would exhibit a suicide-related behavior after controlling for all other variables. Along the same lines, for every student indicating loneliness in GCS district, there was a 2.6 times greater likelihood they would exhibit a suicide-related behavior. For every student reporting they were a victim of cyberbullying in GCS district, there was a 2.5 times greater likelihood they would exhibit a suicide-related behavior. For every participant reported opioid misuse in GCS district, there was a 1.8 times greater likelihood they will engage in suicide-related behaviors. For every student reporting they were a student of color (Black, Latino, Multiracial) within the sample, there was a 1.3 times greater likelihood they will engage in suicide-related behaviors than White students.

Table 4

Logistic Regression Results Pooled Data

	B	SE	p	Exp(*B*)	Lower	Upper
Intercept	-3.014	.157	.000	.049	.036	.067
Cyberbullying	.909	.161	.000	2.482	1.810	3.405
Loneliness	.963	.140	.000	2.619	1.989	3.449
Homeless	.478	.320	.136	1.613	.860	3.025
Opioid Misuse	.581	.156	.000	1.787	1.316	2.427
Sadness	1.707	.133	.000	5.513	4.251	7.149
Students of Color	.283	.140	.043	1.327	1.008	1.745

In model one without the variables added the classification table indicated 100% correctness with students who do not engage in suicide-related behaviors and 0% with those who do not engage in suicide. Once the variables were entered, the model was

predicted at 80.8% with participants engaging in suicide-related behaviors correctly

classified at 32.4% and those not engaging in suicide-related behaviors at 94.5%.

In response to research question one, the results indicated that cyberbullying,

loneliness, opioid misuse, sadness, and race were significant predictors of suicide-related

behaviors for high school students in the GCS district. While homelessness was

previously identified in research as a predictor of suicide-related behaviors, it was not

found to be significant for high school students in the GCS district. It was the only

variable that was not significant within this model. The strongest predictor among the

variables was sadness, followed by loneliness, cyberbullying, opioid misuse, and then

Students of Color.

Moderation Analysis

After the Students of Color variable was identified as a significant predictor of

suicide-related behaviors for high school students in the GCS district, moderation

analysis was conducted. As a result, research question two was able to be answered

based on significant findings of race in the first research question. Research question two

inquired if race moderated the relationship between suicide-related behaviors and

predictors for Students of Color in the GCS district.

In order to test if race was a moderator with identified predictors of cyberbullying,

loneliness, sadness, opioid misuse, and the outcome variable of suicide-related behaviors,

additional logistic regression analyses were utilized. Homelessness was not utilized a

variable as it did not prove significant with the outcome variable in the initial test. The

SPSS PROCESS was utilized to test interaction among each predictor variable and race

with the outcome variable of suicide-related behaviors (Hayes, 2013). SPSS PROCESS

allows for testing of moderation among variables and allows for the inclusion of covariates (Hayes, 2013).

Four models were conducted within the SPSS PROCESS. In the first model, the predictor variable of cyberbullying was added to the model along with the outcome variable of suicide-related behaviors. Covariates included loneliness, opioid misuse, and sadness. The moderator variable added to the model was Students of Color. The values were centered around the mean. Findings from this model produced the following results indicating the interaction between Students of Color and cyberbullying was not statistically significant (r^2 = .3346, b=.2474, SE = .3207, p = .4405; 95% confidence interval [-.3812 - .8761]). Based on the graph (Figure 9), race was not a moderator for cyberbullying and suicide-related behaviors.
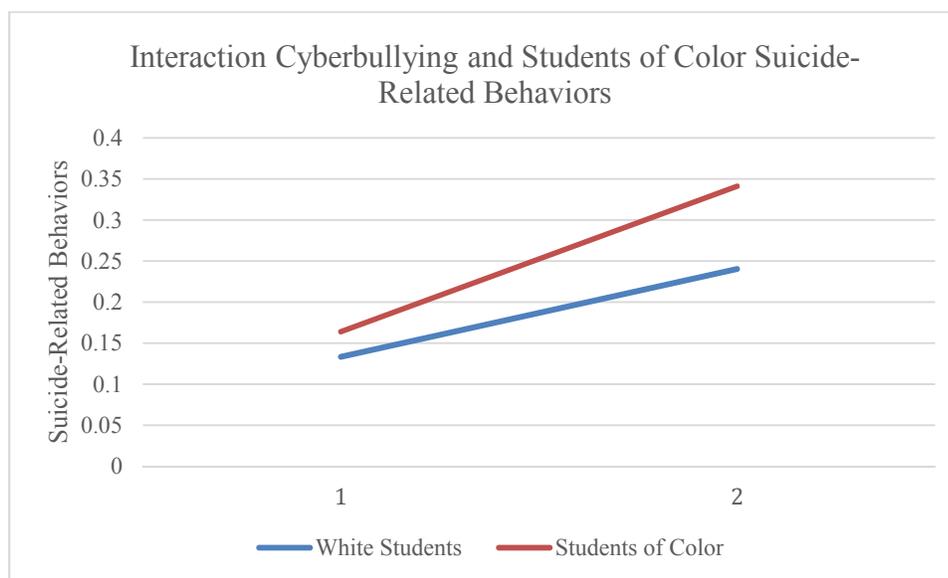
Figure 9. Intercept of interaction with race, cyberbullying, and outcome variable.

In the second model, the predictor variable of opioid misuse was added to the model along with the outcome variable of suicide-related behaviors. Covariates included cyberbullying, loneliness, and sadness. The moderator variable added to the model was

Students of Color. The values were centered around the mean. Findings from this model

produced the following results indicating the interaction between Students of Color and

opioid misuse was not statistically significant (r^2 = .3349, b=-.3677, *SE* = .3351, p =

.2725; 95% confidence interval [-1.0245 - .2890]). Based on the graph (Figure 10), race

was not a moderator for opioid misuse and suicide-related behaviors.
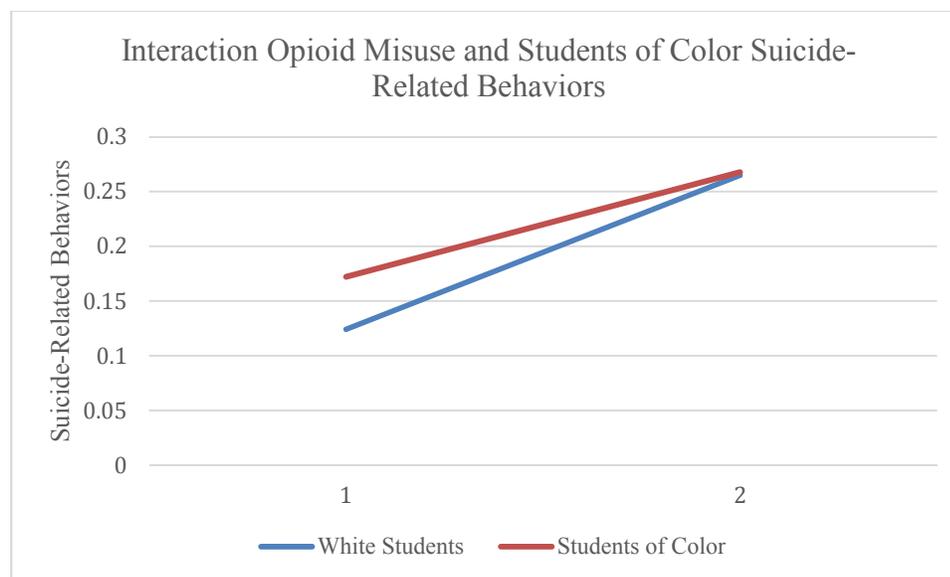
Figure 10. Intercept of interaction with race, opioid misuse, and outcome variable.

In the third model, the predictor variable of loneliness was added to the model

along with the outcome variable of suicide-related behaviors. Covariates included

cyberbullying, opioid misuse, and sadness. The moderator variable added to the model

was Students of Color. The values were centered around the mean. Findings from this

model produced the following results indicating the interaction between Students of

Color and loneliness was not statistically significant (r^2 = .3357, b=-.4568, *SE* = .2924, p

= .1182; 95% confidence interval [-1.0298 - .1162]). Based on the graph (Figure 11),

race was not a moderator for loneliness and suicide-related behaviors.

Interaction Loneliness and Students of Color Suicide-Related Behaviors
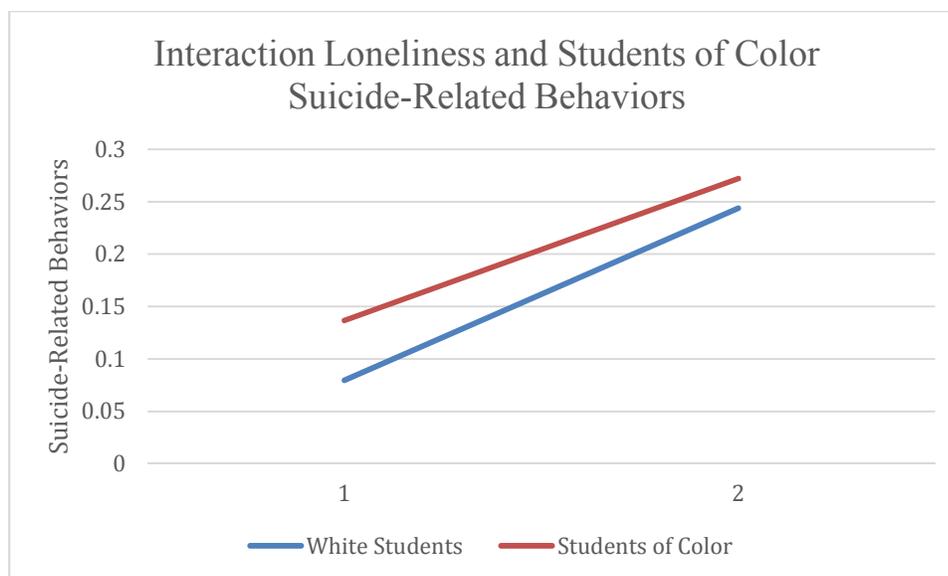
Figure 11. Intercept of interaction with race, loneliness, and outcome variable

In the last model, the predictor variable of sadness was added to the model along with the outcome variable of suicide-related behaviors. Covariates included cyberbullying, opioid misuse, and loneliness. The moderator variable added to the model was Students of Color. The values were centered around the mean. Findings from this model produced the following results indicating the interaction between Students of Color and sadness was statistically significant (r^2 = .3367, b=-.5815, *SE* = .2845, p = <.05; 95% confidence interval [-1.1390 - -.0239]). Results were significant for the interaction and race was a moderator with sadness and suicide-related behaviors. Based on the graph, Students of Color who did not report being sad had a higher probability of suicide-related behaviors than White students (Figure 12). There was not a difference in the probability of suicide-related behaviors for Students of Color or White students when students reported sadness.
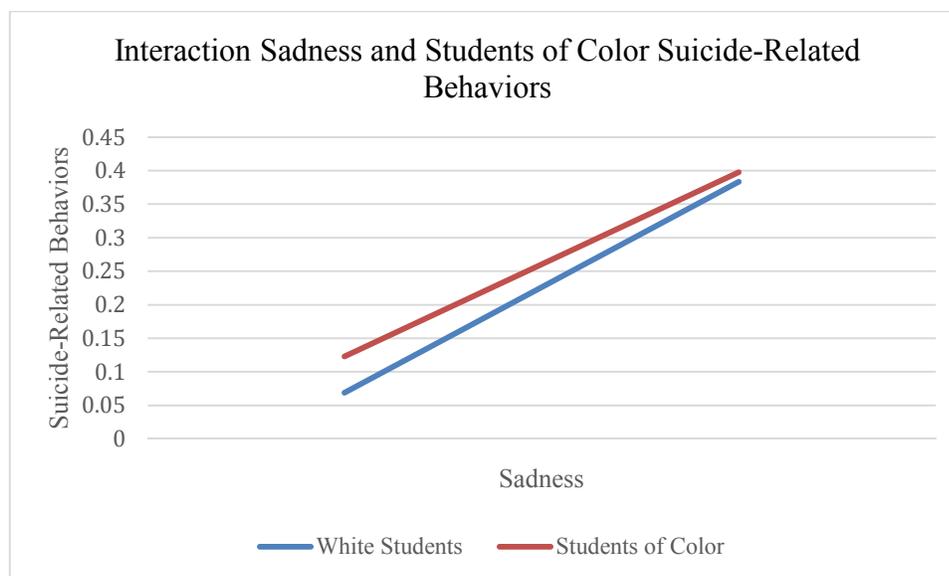
Figure 12. Intercept of interaction with race, sadness, and outcome variable.

As a result, the moderation analysis demonstrated that race was a moderator only for the sadness variable. This moderation was not expected from the original hypothesis and provides an interesting result. Moderation was not significant for any of the other identified variables.

Summary

Upon analysis of the data, it was confirmed that 32.6% of the sample population for this study included White students in the GCS district. Accordingly, this study featured a majority sample of students of color which was represented at 67.4%. Of the independent variables utilized for this study, homelessness was reported the least and loneliness was reported the most for this sample. Overall findings from this study demonstrated that cyberbullying, loneliness, opioid misuse, sadness, and Students of Color were significant predictors for suicide-related behaviors for high school students in the GCS district. Homelessness was not a significant predictor of suicide-related behaviors. As a result, we reject the null hypothesis that all six variables were significant

predictors of suicide-related behaviors. Additionally, race was a moderator for only the identified predictor of sadness and suicide-related behaviors among participants in the GCS district. As a result, we reject the null hypothesis that race is a moderator for identified predictors and suicide-related behaviors among high school students in the GCS district. Discussion, implications, and recommendations of this analysis is provided in the next chapter.

CHAPTER 5: CONCLUSION & RECOMMENDATIONS

"We need to change the culture of this topic and make it OK to speak about mental health and suicide." Luke Richardson

Suicide-related behaviors, which include suicide-related ideation, suicide planning, and suicide attempts, disproportionately affect high school Students of Color in the state of North Carolina and GCS district. Conversely, suicide completions are highest among White high school students in the state and the GCS district. Nonetheless, prevention efforts have largely focused on suicide completions as the notion that suicide primarily affects White students is still reinforced. As suicide-related behaviors are high predictors of future suicide completions (Bostwick et al., 2016), this study examined data regarding suicide-related behaviors among racially diverse high school students in the GCS district. Understanding factors that influence higher rates of suicide-related behaviors among racially diverse students is paramount within this urban district. Moreover, existing research has investigated factors influencing suicide-related behaviors but primarily with White majority populations. It is crucial that researchers focus on majority study samples of students of color and identify factors that predict suicide-related behaviors in order to truly guide prevention efforts for racially diverse populations.

Multiple factors support the need to examine suicide-related behaviors among an adolescent population. Adolescents experience complex challenges partially due to delayed development in executive brain functioning which can influence poor decision making and impulsivity (AACAP, 2018). This poor decision making and impulsivity

have also been linked to increased sadness and negative emotions (AACAP, 2018; CDC, 2019). In addition to developmental challenges, contemporary issues experienced by this population include a heavy reliance on technology and fewer face to face social interactions. This has resulted in increased loneliness (Cigna Healthcare, 2018) and cyberbullying (Gladden et al., 2014). Lastly, adolescents are currently dealing with an opioid epidemic which is the result of increased access to prescription pain medications (Esang & Ahmed, 2018). Accordingly, sadness, loneliness, homelessness, opioid misuse, and cyberbullying are factors that have greatly influenced the experiences of teenagers. These factors have been investigated as predictors of suicide-related behaviors. However, limited research has examined these variables within an urban school district with increasing rates of suicide-related behaviors among racially diverse students. Thus, this research sought to understand how these factors specifically influence suicide-related behaviors.

In this chapter, I provide a discussion of the results which are aligned with prior research and literature regarding suicide-related behaviors. Next, I apply information from the analysis to the conceptual framework to provide further insight. To further align the study, a discussion of the implications is provided with the adoption of a Culturally Responsive Suicide-Related Behavior Response Framework. Finally, recommendations for various stakeholder groups based on the framework presented. Ultimately, this chapter seeks to provide meaning to the results and provide direction for future efforts.

Discussion

Researchers have established that cyberbullying, homelessness, loneliness, opioid misuse, sadness, and race are significant predictors of suicide-related behaviors (Babidge

et al., 2008; Calati et al., 2019; Esang & Ahmed, 2018; Hinduja & Patchin, 2010; Romero et al., 2013; Shain, 2016; Zamora-Kapoor et al., 2015). However, limited research has examined these factors with a majority population of students of color in an urban school district. Thus, this study sought to examine factors influencing suicide-related behaviors among racially diverse students in the GCS district and to understand the role of race with moderating suicide-related behaviors. The variables examined were also intentionally selected based on contextual factors and characteristics of the district.

The Escape Theory of Suicide is utilized for this research as it suggests that individuals engage in suicide-related behaviors as a means of escape from harsh life realities (Baechler, 1979). It posits that individuals experience negative events, develop corresponding negative thoughts and emotions, and engage in suicide-related behaviors to end these negative experiences and thoughts. Applied to this research, it is predicted that high school students within the GCS district who experience cyberbullying, homelessness, loneliness, opioid misuse, and sadness are more likely to have a higher likelihood of engaging in suicide-related behaviors. Additionally, for this specific study, race was also included as a variable to determine if it predicted suicide-related behaviors among this majority students of color population. It also served as a moderator to determine if it influenced the association between the predictor variables and the outcome variable.

Research Question One

RQ1: Does cyberbullying, loneliness, homelessness, opioid misuse, sadness, and race predict teen suicide-related behaviors among public high school students in the George County School district?

Findings for this research question indicate that cyberbullying, loneliness, opioid misuse, sadness, and race do predict teen suicide-related behaviors among high school students in the GCS district. These findings align with existing research regarding these variables being predictors of suicide-related behaviors. This was even the case within a majority students of color population and urban school district. However, homelessness was not found to be a predictor of suicide-related behaviors in this district. Interestingly, these results do not align with existing research regarding the role of homelessness in predicting suicide-related behaviors (Babidge, Buhrich, & Butler, 2008). Yet, it was also found that suicide-related behaviors among individuals experiencing homelessness varied based on the region and district in the United States (Enyam, 2002). While the GCS district has higher rates of homelessness among racially diverse populations and the school district is comprised largely of students of color, reporting of homelessness among youth in this population was very low on the 2017 Youth Risk Behavior Survey results. In fact, in George County it was reported that 78% of homeless families identified as Black (Charlotte-Mecklenburg, 2017a). Thus, it is hard to determine if this variable was not indicated as a predictor due to low affirmative responses from youth for affirming that they have experienced homelessness within the past 12 months on the survey. This finding may also suggest that the variable of homelessness was underreported in the survey or may serve as a protective factor for youth. As a protective factor, it could indicate that youth experiencing homelessness may be connected to additional resources and supports.

Results from the logistic regression model indicated that five of the six variables were significant predictors of suicide-related behaviors for students in the GCS district.

The odds ratio from this model suggests that students who experienced sadness for a two week period over the twelve months prior to the completion of the survey were 5.5 times more likely to engage in suicide-related behaviors. Students experiencing loneliness were 2.6 times more likely to engage in suicide-related behaviors. In regards to cyberbullying, students experiencing this form of bullying were 2.48 times more likely to engage in suicide-related behaviors. Students experiencing opioid misuse were 1.79 times more likely to engage in suicide-related behaviors. Lastly, Students of Color were 1.33 times more likely to engage in suicide-related behaviors. Students of Color carried a weaker association ($p<.05$) than the other identified variables ($p<.001$).

Research Question Two

RQ2: Does race moderate the relationship between teen suicide-related behaviors and identified predictors for Black, Latino, Multiracial, and White students in the George County School district?

Researchers have found that individuals identifying as Black, Latino, and Multiracial are at a higher risk for suicide-related behaviors (Cheref et al., 2015; Price & Khubchandani, 2019; Rothe & Pumariega, 2018). Cheref et al. (2015) also investigated the moderating effects of rumination and depressive symptoms. However, limited research has examined the moderating effects of race with suicide-related behaviors. Therefore, the second research question sought to understand if race was a moderator for suicide-related behaviors and identified predictors.

Findings from the analysis support the hypothesis that race is a significant moderator between suicide-related behaviors and sadness only. However, there was an inverse relationship indicating that the less sad Students of Color were the higher the

probability for them to engage in suicide-related behaviors. The Office of Minority Health (2016) found that Blacks were more likely to experience sadness than White individuals. As this is more common among this racial group, it is questioned if this was perhaps underreported in the study. On the other hand, it could suggest that sadness is more normalized among Students of Color and is generally accepted. Current results from the study indicate that increased sadness among racially diverse populations may actually be a protective factor for suicide-related behaviors.

Researchers have affirmed sadness as a predictor with suicide-related behaviors. However, researchers have also found variances in depression and suicide attempts for racially diverse populations (Cheref, Benoit, & Walker, 2019). In their study of a sample of 218,765 adults using data from the National Survey on Drug Use and Health, they found that depression was associated with decreased risk for suicide-related attempts with Black and multiracial adults. However, it was associated with increased risk for Asian, American Indian, and White populations. Similarly, in this study sadness demonstrates variance versus other variables in this study as it pertains to racially diverse groups.

Along the same lines, it aligns with prior research which found that when adolescents of color experience lower rates of sadness or depression, their suicide risk is increased (Greening & Stoppelbein, 2002). They found that when White students and Students of Color presented with similar rates of sadness or depression, race was not a moderator. Based on this study, Students of Color had lower rates of sadness than White students in this urban district. Accordingly, the results support the notion that lower rates of sadness or depression increase suicide risk among racially diverse students.

Race was not found to be a moderator for the other variables of cyberbullying, loneliness, or opioid misuse. This suggests that being racially diverse in this district does moderate the relationship between the predictor of cyberbullying, loneliness, or opioid misuse and the outcome variable of suicide-related behavior. As reported, moderation only exists for the predictor variable of sadness.

Application to Theoretical Framework

The Escape Theory of Suicide was utilized as a framework for this study due to its focus on suicide-related behaviors (Baechler, 1979). This framework is critical in understanding what may cause an individual to consider suicide as an option and engage in suicide-related ideation, suicide planning, and suicide attempts. This theory focuses on engagement in suicide-related behaviors as a means of escape from harsh realities in life. It includes behavioral and emotional components that increase the likelihood of suicide-related behaviors.

Applied to this research, this framework seeks to understand risk factors for suicide-related behaviors for teenagers residing within an urban area. This theory was applied within the context of the GCS district due to the unique factors increasing rates of homelessness, opioid misuse, suicide-related behaviors, and suicide completions. GCS district also has a higher percentage of Students of Color than White students. Additionally, in 2017 suicide became the second leading cause of death for teenagers in the state and the district.

Missing from the original framework is the focus on the role of race. Suicide-related behaviors throughout the state of North Carolina and in the GCS district are higher for Students of Color than White students. Thus, understanding the role of race

with suicide-related behaviors is pertinent. For the study framework, race was added into the model as a covariate to understand if it has a role as a predictor of suicide-related behaviors. As the rates are higher for Students of Color for suicide-related behaviors, further research is warranted to understand the influence of race. Based on the analysis, the framework is supported as situations, experiences, and negative emotions/behaviors do predict suicide-related behaviors. As a result, our modified theoretical framework for the GCS district is listed below (Figure 13). The updated model displays race (Students of Color) as a predictor or influencer of suicide-related behaviors. Additionally, as race was only a moderator for sadness and suicide-related behaviors, the moderation effects were not added into the model.
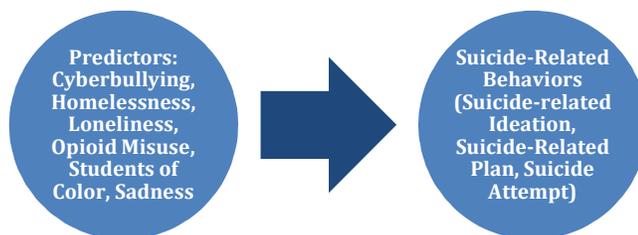
Figure 13. Modified theoretical framework.

Study Implications

Overall, the findings from this study suggest that cyberbullying, opioid misuse, sadness, race, and loneliness are predictors of suicide-related behaviors for high school students in the southeastern urban district identified for this study. As a result, students in the GCS district experiencing any of these predictors have higher odds for engagement in suicide-related behaviors than students without these experiences. As suicide became the second leading cause of death for high school students in GCS in 2017, understanding these predictors is important for helping to decrease suicide-related behaviors and ultimately completion. It is suggested that interventions for high school students in the

district focus on addressing predictors for which there is a higher likelihood of suicide-related behaviors including sadness, low self-esteem, loneliness, cyberbullying, and opioid misuse. It is also suggested that plans to address these predictors are integrated with suicide prevention efforts to reduce the future likelihood of suicide completions. For example, in addressing opioid misuse in the district with the high school population it may be helpful to also discuss it is a predictor for suicide-related behaviors. This would allow for stakeholders to begin to make connections between risk factors of suicide-related behaviors. Helping stakeholders to understand predictors of suicide-related behaviors for this population in the GCS district may ultimately help to save lives in the future as attempts are the stronger predictors of suicide completion rates.

The sadness variable had the strongest association for suicide-related behaviors and its relationship with suicide-related behaviors was moderated by race. These findings suggest that efforts to prevent suicide should include elements that focus on assessing sadness among high school students in the district but from a different perspective. Furthermore, Students of Color in the district who report they are not sad but exhibit other risk factors for suicide-related behaviors may need additional assessments. This population of diverse students presenting with lower reported signs of sadness or depression, may be at the highest risk for suicide-related behaviors within this district. Thus, assessment should not focus primarily on sadness or symptoms of depression, but on other factors such as loneliness, opioid misuse, and cyberbullying.

Students experiencing cyberbullying had a higher likelihood of engaging in suicide-related behaviors. Based on the sample, approximately 14.3% (n = 288) of the sample reported being a victim of cyberbullying within the last 12 months. It is difficult

to ascertain if responses to this question were underreported by this sample as a result of limited research on cyberbullying and suicide-related behaviors (van Geel et al., 2014). Nonetheless, results do suggest that students experiencing cyberbullying are at a higher risk for suicide-related behaviors. Researchers suggest that cyberbullying has the potential to cause reoccurring victimization as a result of its occurrence on a platform that is easily accessible following the initial incident (Patchin & Hinduja, 2006). Thus, further investigation of this variable is warranted within the GCS district.

As indicated, homelessness appeared to be underreported within this district. Also, it was the only variable not found to be a predictor for suicide-related behaviors among high school students in the GCS district. As such, it is important that the data from the Youth Risk Behavior Survey as it pertains to homelessness is questioned for inclusion in future research studies. Additionally, perhaps more accurate data might include reporting of homelessness for districts via the McKinney Vento Act or based on school social worker report. On the other hand, these findings might also suggest that students who are experiencing homelessness within the district are connected to resources to assist with their coping skills. Adolescents who are enrolled in temporary housing or shelter programs, may have additional supports as a result of their experiencing homelessness. These supports may be a buffer for suicide-related behaviors. If that is the case, then support services for homeless individuals in this district may be effective in helping to reduce suicide-related behaviors among high school students.

Students who reported feeling alone had an increased likelihood of engaging in suicide-related behaviors. This question was not focused exclusively on an environmental context such as home or school. As a result, it is important to further

examine the loneliness variable to understand what it means to adolescents. It is difficult to ascertain if adolescents would feel less alone if they were engaged in school or community extracurricular activities. Additionally, it did not decipher if the feeling of being alone was related to high use of technology for this population. This variable of loneliness warrants further investigation.

Opioid misuse was identified as a predictor for suicide-related behaviors. This including taking prescription pain medications not as prescribed or taking mediation prescribed to another person. As the reported misuse of opioids is higher among high school students in George County than the North Carolina state average, additional attention is needed for opioid misuse prevention efforts aligned with suicide-related behavior prevent efforts. Efforts within the district to support proper dispensing of expired or unused prescription medications could be advertised as efforts to also decrease suicide-related behaviors among youth.

For students in an urban school district, it is suggested that districts identify factors specific to the students in the district as a means of targeting specific predictors of suicide-related behaviors. As these predictors vary among districts, it will help to provide more targeted services. Additionally, efforts for suicide prevention should complement other predictors. For example, drug prevention efforts should include suicide-related behavior prevention efforts particularly for students misusing opioids. Efforts to address cyberbullying should include a focus on suicide-related behavior prevention efforts. It is important that these topics are not siloed and that suicide prevention efforts are not restricted to a singular training, workshop, or activity.

Recommendations

Recommendations based on findings from this research include a decreased focus on generalized approaches to suicide completions and more targeted, specific approaches to the prevention of suicide-related behaviors for diverse populations. As current research efforts are based on a White European framework for suicide prevention, this model accounts for suicide-related behaviors and higher risk among racially diverse individuals, particularly in urban areas. It also considers the indication of race as a predictor of suicide-related behaviors in this district.

In order to address the problem of higher rates of suicide-related behaviors and completions in this urban district along with race as a moderator for sadness, comprehensive and interconnected initiatives must be implemented immediately. Additionally, a mere focus on suicide prevention programs with the aim of reducing suicide completion is not the full solution. Instead, learning how to support youth who have engaged or are currently engaging in suicide-related behaviors is necessary. As suicide-related behavior rates are higher among Students of Color, an approach that is tailored to their diverse needs is urgently needed. Therefore, a Culturally Responsive Suicide-Related Behavior Response Framework is proposed.

Culturally Responsive Suicide-Related Behavior Response Framework

Historically, racially diverse individuals in the United States have completed suicide as a strategy to escape harsh realities, oppression, and terrorism. For example, the National Humanities Center Resource Toolbox (2007) recounts stories of slaves who completed suicide in order to avoid lashings, beatings, sexual abuse, and being chained. A story is recounted of Aunt Adeline who hung herself in order to avoid getting whipped

or the mother of Martin Jackson whose mother intentionally drowned because she couldn't deal with the harsh realities (National Humanities Center Resource Toolbox, 2007). While this is part of American history, these stories are often not told. Along the same lines, more recent stories fail to account for narratives from Latino immigrants in the United States who are at risk of suicide due to stress-related adjustment, language barriers, poverty, and healthcare (SAMHSA, 2019). Additionally, former immigrants who faced deportation or experienced family separation have also completed suicide as a means to escape. Furthermore, research indicates that Latinos born in the United States have higher rates of suicide than those who were born in other countries (SAMHSA, 2019). Again, these are untold stories.

Suicide prevention trainings do not typically approach suicide from a historical perspective. Along the same lines, there is little discussion or education regarding the resiliency of diverse cultures and how they have been able to survive and heal from past trauma. Joe, Canetto, and Romer (2008) suggested that most suicide prevention programs are based on research from predominantly White populations despite differences among racially diverse populations. Thus, a Culturally Reflection Suicide-Related Behavior Response Framework (Figure 14) is recommended to provide strategies that affirm the experiences of diverse students while making cultural connections to their history, present, and future. Culturally relevant pedagogy is defined by Ladson-Billings (1994) as empowering "students intellectually, socially, emotionally, and politically using cultural referents to impart knowledge, skills, and attitudes" (p. 16-17). However, this approach fails to account for individualized responses to students based on cultural needs focusing more heavily on content knowledge. Culturally responsive practices, as defined

by Geneva Gay (2010) asserts the importance of "using the cultural knowledge, prior experiences, frames or reference, and performance styles of ethnically diverse students to make learning encounters more relevant to and effective for them" (p. 31). The Culturally Responsive Suicide-Related Behavior Response model is framed as suicide response versus prevention program as the latter typically refers to preventing suicide completion without addressing individuals who engage in suicide-related behaviors including ideation, planning, and attempts. As noted in this research, those populations are typically black and brown children. When individuals and communities are taught how to respond to suicide-related behaviors, this decreases the stigma associated with individuals experiencing suicide-related behaviors.

Research

1) Majority students of color research and suicidality

2) Suicidality and Intersectionality

3) Examine middle school racially diverse populations in urban districts

Prevention

1) Culturally Based Suicide-Related Response Models

2) Use identified predictors for racially diverse populations to tailor interventions

Community

1) Asset-Based Community Development Approach to Suicidality

2) Providing leadership for tailored suicide-related response models

Schools

1) Implement Post Suicide-Related Behavior Support

1)2) Suicidality and Diversity Certification Program

Figure 14. Culturally Responsive Suicide-Related Behavior Response Framework.

The Culturally Responsive Suicide-Related Behavior Response Framework is suggested as a tool to ensure that efforts to address suicide are inclusive and empowering. While the escape theory of suicide helps to explain *why* these adolescents engage in

suicide-related behaviors, this proposed framework addresses *how* to address suicide-related behaviors among racially diverse programs. This model is utilized as a means to support prevention and intervention efforts. Recommendations are provided below for each component of the model which include research, prevention, community, and schools. More specific recommendations for each section are provided below.

Recommendations for Research

Limited suicidality research has focused exclusively on racially diverse populations. Moreover, even less research investigates majority students of color populations as it pertains to risk factors for suicide-related behaviors. The first recommendation for research is to expand majority suicidality research of populations of color, particularly in urban areas where there is a concentration of diverse populations. Inclusion of predominately White populations when addressing suicide-related behaviors is not truly focusing on populations who have increased risk. Additionally, the inclusion of other diverse populations is warranted. For example, due to the low representation of indigenous populations, they are not included within this research. Wexler and Gone (2012) suggested that indigenous, non-Native communities have a higher risk of suicide completions than other populations. Furthermore, Goldston et al. (2008) recommended additional research on the identification of triggers that are specific to various cultures as well as risk and protective factors for suicide. It is also suggested that researchers focus on the effectiveness of informal and formal supports within the community for diverse cultures (Goldston et al., 2008). This research primarily focuses on the risk factors and does not explore protective factors. This is needed with racially diverse populations.

Secondly, researchers should consider additional research on suicidality and intersectionality. Intersectionality is defined as overlapping identities that create a unique experience of oppression and double-discrimination, such as being Black and being a woman (Crenshaw, 1989). This study found that being a Student of Color was a significant predictor of suicide-related behaviors in the GCS district. However, it did not investigate the intersection of gender and race. These are additional areas for deep analysis. A recent longitudinal study found decreasing rates among all adolescent racial and ethnic groups for suicide-related behaviors and an increasing rate of self-reported suicide-related behaviors among Black girls and Black boys (Lindsey, Sheftall, Xiao, & Joe, 2019). Furthermore, Black boys had increasing reports of suicide attempts with injury indicating that they are engaging in more lethal behaviors (Linsey et al., 2019). Understanding variances among diverse populations is meaningful for identifying how culture influences risk, intervention and help-seeking behaviors (Joe et al., 2008). It would be helpful to examine additional covariates such as gender and gender identity, sexual identity, and income level to understand how these factors may influence suicide-related behaviors of diverse populations.

Lastly, it is strongly recommended that this research is replicated with middle school students in the GCS district. The suicide rate for middle school students doubled from 2007 – 2014 (CDC, 2016). Thus, understanding if there is consistency among predictors with the middle school population may help to determine if these variables have some relationship to the characteristics of the district or are only related to high students. Including the race variable will also help to identify if race is a predictor for the middle school population as well. Ultimately, this will inform intervention and treatment

efforts while supporting a Culturally Responsive Suicide-Related Behaviors Response

framework that transcends age and meets the needs of racially diverse students. It will

also serve as a research model for other urban districts throughout the country.

In summary, recommendations for future research supporting the Culturally

Responsive Suicide-Related Behavior Response Framework include the following:

1) Suicidality and intersectionality – Examine research that accounts for intersecting

identities and suicidality.

2) Majority students of color populations and suicidality – Increase research with

majority students of color sample populations, particularly urban areas.

3) Suicidality, middle school students, and race – Examine suicidality among middle

school student populations while accounting for the role of race.

Recommendations for Suicide-Related Behavior Prevention

Current suicide prevention models fail to acknowledge the role of race and

culture. The first recommendation is for the adoption of the Culturally Responsive

Suicide-Related Behavior Response Framework at a national, state, and local level. For

example, North Carolina highlights guidelines by the American School Counselor

Association, National Association of School Psychologists and Trevor Project (2019) to

address School Policy on Suicide Prevention. However, upon review of this model and

framework, there is no mention of race and ethnicity within the model and how these

variables influence suicide-related behaviors. While the model does include language for

addressing suicide-related behaviors, there is no mention of race. Understandably,

suicide is a problem that affects all children. Yet, children of color are disproportionately

impacted by suicide-related behaviors. It is important for the narrative to become more

inclusive of Students of Color. Adopting the Culturally Responsive Suicide-Related

Behavior Response Framework ensures that a cookie cutter approach to suicide

prevention that fails to acknowledge race is not utilized. Furthermore, the efficacy of

these models is questioned as the rates of suicide-related behaviors for Students of Color

is rising.

Secondly, after including race within prevention models, the models need to be

tailored to address specific predictors of suicide-related behaviors for racially diverse

students. Understanding differences among predictors for racially diverse students and

White populations will help to provide education and intervention efforts that are

culturally responsive. Additionally, the inclusion of urban districts with these models

will help to identify if there are any patterns for suicide predictors among non-

predominantly White districts. This information could then assist with the development

of a Culturally Responsive Suicide Response model that caters to the needs of youth in

urban school districts.

Question, Persuade, Refer (QPR) Gatekeeping training is a nationally recognized

one-hour long evidence-based suicide-prevention model (QPR Institute, 2017). This

program has upwards of 1,000,000 individuals trained as gatekeepers and trained on how

to address and respond to suicidality (QPR Institute, 2017). Quinnett (2012) argued that

diverse cultures appear to have similar structural relationships regarding warning signs.

Yet, the QPR training has been culturally adapted for racially diverse populations (QPR

Institute, 2016). Additionally, research on the effectiveness of the model has supported

its ability to increase knowledge and self-efficacy regarding suicide with primarily White

populations (Litteken & Sale, 2017; Thompkins, Witt, & Abraibesh, 2010) versus more

diverse populations. Furthermore, Thompkins et al. (2010), found that QPR is more effective with inexperienced teachers or individuals who have very limited knowledge base regarding suicide. While this model aims to prevent suicide-related behaviors, it fails to account for culturally specific predictors and risk factors for suicidality. Additionally, research is limited regarding its effectiveness with racially diverse and populations.

In summary, recommendations for suicide-related behavior response in the Culturally Responsive Suicide-Related Behavior Response Framework include the following:

1) Culturally Based Suicide-Related Prevention Model – Incorporate this model to ensure that the services provided are culturally inclusive and consider the role of race.

2) Use identified predictors for racially diverse populations to tailor interventions – Utilize predictors for racially diverse populations to tailor prevention and intervention programs.

Recommendations for Community Agencies

Community agencies and stakeholders play a major role in helping to prevent and address suicide-related behaviors, especially amongst diverse teenagers. The first recommendation for community agencies is the utilization of an asset-based community development approach to address suicidality. An asset-based community development approach focuses on building upon existing assets and not attending solely to the needs and problems of the community (Mathie, Cameron, & Gibson, 2017). This approach reinforces existing assets and protective factors within the community. For instance,

based on findings from this research, community members in the GCS district may seek to focus on assets within the community that address identified risk factors of cyberbullying, loneliness, opioid misuse, race, and sadness. Ensuring that community members, families, and schools are informed about these resources would be a vital step. Next, ensuring that community stakeholders are informed about how these resources are linked to preventing suicide-related behaviors is necessary.

A deficit-based approach is largely used within the community as it pertains to addressing suicide-related behaviors. For example, Hirono (2013) found that a majority of pastors and clergy view suicide as a sin which makes it very difficult and sometimes impossible to address it within the church. He suggested that if clergy have negative views about suicide then they may actually increase the vulnerability of their members towards these behaviors (Hirono, 2013). Therefore, it is critical that clergy approach suicide prevention efforts from an asset-based lens and remove critical and harsh judgement towards those who have ideation, plans, and attempts. In other words, for people who have attempted suicide, it is helpful that they are not condemned but loved, supported, and directed to resources that can assist. Churches and community centers are a vital asset for helping to validate the experiences of these adolescents who engaged in suicide-related behaviors. Shifting the focus from engagement in suicide-related behaviors to perseverance despite prior attempt helps to empower youth to continue to build upon their strengths and assets.

Secondly, community agencies play a vital role in providing leadership for tailored suicide-related behavior response models. Suicide-related behavior models must include expertise from the community with a cultural focus on the needs of local youth.

The UCity Family Zone, located in Charlotte, North Carolina, is an example of bringing

community leaders together for the purpose of problem-solving. The mission of the

UCity Family Zone is to provide a "collaborative, place-based initiative empowering

communities to increase opportunity and improve quality of life" (UCity Family Zone,

2019, para. 1). This initiative is based within the community and is perceptive of the

needs residents due to its proximity. Local community organizations are more likely to

have a pulse on the changing demographics within neighborhoods thereby providing

more expertise about identified predictors.

Singer, Erbacher, and Rosen (2018) suggested that schools collaborate with

researchers and school mental health professionals for the development of suicide-related

behavior response models. Additionally, they suggest integrating this programming with

the prevention of existing school efforts (Singer, Erbacher, & Rosen, 2018). However,

the missing element from this recommendation is the involvement of parents and

community stakeholders with these development efforts. As many of the predictors

involve behaviors and symptoms that exist within the home community, parents and

community stakeholders play an equally important role. For example, cyberbullying is

not confined to the school environment and may occur outside of regular school hours.

Parents may be more apt to provide support in these instances. Community stakeholders

also have an important role of understanding and assessing additional issues that occur

with youth in local neighborhoods. For example, local mental health therapists may be

attuned to students' need for suicide-related behavior response services due to

cyberbullying and may be able to identify patterns with students presenting from local

schools. Thus, if they are aware of the predictors of suicide-related behaviors among

local students, they may be more apt to collaborate with these schools to inform them of patterns.

Overall, community agencies play a major role in addressing suicide-related behaviors among adolescents. In summary, recommendations for suicide-related behavior response in the Culturally Responsive Suicide-Related Behavior Response Framework include the following:

1) Asset-based community development approach to suicidality - Approach suicide prevention efforts from an asset-based lens and remove critical and harsh judgment towards those who have ideation, plans, and attempts.

2) Providing leadership for tailored suicide-related behavior response models – Community leadership is vital for addressing suicide-related behaviors and for advocating for the cultural needs of adolescents.

Recommendations for Schools

One recommendation for schools is the implementation of post suicide-related behavior supports. Schoenherr (2019) suggested that some schools are gearing up to provide suicide-prevention services but have neglected to focus on post suicide-related behavior supports. Along the same lines, current suicide prevention efforts have heavily focused on prevention of suicide completions but have not included prevention of suicide-related ideation, planning, and attempts. "More people survive suicide attempts than those who actually die" (NC DHHS, 2018, para. 1). As a result, there is a group of students within schools who are have attempted but are not necessarily targeted for intervention. In 2017 within the GCS district, 17% of students reported experiencing suicide-related ideation, 14% had a suicide-related plan, and 11% attempted suicide over

the past 12 months. These behaviors are indicators of future completions. However, districts have not implemented ways to identify these students and provide additional support. It is recommended that post suicide-related behavior supports encompass the inclusion of the following elements: a) standardized post suicide-related behavior policies, b) specialized post suicide-related behavior intervention teams, c) equal access to post suicide-related behavior services.

Standardized Post Suicide-Related Behavior Policies

Standardized post suicide-related behavior policies are necessary as they can ensure students are connected to the school counselor, social worker, and/or psychologist upon their return to school. These policies can dictate requirements for the student to return to school post-suicide attempt in order to support their social and emotional needs. It is strongly recommended that policies are implemented at a district level for students to ensure implementation across various schools. It is strongly recommended that principals are involved with the development of these policies as they can help to ensure the necessary infrastructure is available to support implementation of these policies at their respective schools. Principals will also be better positioned to identify risk related factors for the return of these students to their schools. They would be able to ensure that their staff are trained to handle the return of these students and provide necessary supports.

The Model School District Policy on Suicide Prevention distinguishes between policies for in-school suicide attempts and re-entry policies for students returning to school following an incident (AFSP, American School Counselor Association, National Association of School Psychologists, & The Trevor Project, 2016). However, missing from these policies is the identification of cultural and race related factors. For example,

the language suggests that "all students will be expected to help create a school culture of respect and support in which students feel comfortable seeking help for themselves or friends" (AFSP et al., 2016, p. 11). Yet, the same expectations are not provided for teachers, staff or administrators. In addition, help-seeking among Students of Color differs greatly and student perceptions regarding the ability of teachers and staff members to truly help them differ (Pisani et al., 2012). In summary, when school districts adopt policies for post suicide-related behavior intervention, it is critical that they assess the role of culture and race within their policies. The development of appropriate policies and post-suicide response teams should include the expertise of school counselors, school social workers, school psychologists, medical experts, researchers, and behavioral health practitioners.

Specialized Post Suicide-Related Behavior Intervention Teams

Specialized post-suicide intervention teams need to include interdisciplinary professionals such as school counselors, social workers, psychologists, teachers, administrators, and student resource officers from the school who are adept in responding to students. These professionals help to ensure students are engaged in supports and referred to school and community-based resources. Once the team is notified of a student dealing with post suicide-related behaviors (ideation, plan, attempts), they can then convene to discuss strategies for supporting this student. Additionally, it is highly recommended that the team focus on engagement of students and family members following post suicide-related behaviors. Along with providing support to individual students and families, it is recommended that this team also support suicide-prevention programming or groups at the school that addresses the needs of students who are

survivors of suicide attempts, those who currently have suicide plans, and students considering attempting suicide. It is important that experiences of those who have survived suicide-related behaviors is openly shared and used as a means for addressing resiliency following the attempt. There is value in these untold stories.

Teachers are extremely critical for post-suicide intervention teams. As teachers have daily contact with students who present back to school post a suicide attempt, it is important that they are included within the intervention teams. Teachers may be more apt to notice changes with students and identify concerns with their behavior and/or engagement within the classroom setting. Teachers will need to also understand the role of race and culture with identifying risks for suicide for their students. This includes an understanding that for children of color within their classroom, sadness might not be the strongest predictor for suicide-related behaviors. Thus, they should not solely depend on this clinical presentation in the classroom for consideration if students are at an increased risk for suicide-related behaviors.

Equal Access to Post Suicide-Related Behavior Services

Finally, it is imperative that all schools are equipped to offer post suicide-related behavior supports within each school district. It is even more necessary that this occurs within urban school districts which often have higher rates of suicide-related behaviors than non-urban districts (YRBS, 2018). The old narrative that suicide primarily affects White students needs to be dismantled as this is simply not true. Countering this narrative and ensuring all schools have equal access to suicide-related behavior response services is imperative. Moreover, urban school districts face some additional barriers which may include teacher instability, higher dropout rates, resegregation,

disproportionate funding, and discipline disproportionality (Lewis, Chambers, & Butler, 2012).

Another recommendation for schools is participation in Suicidality and Diversity Certification Programs. Researchers have found that improving relationships and connections with teachers are important for reducing suicide-related behaviors among racially diverse high school students (De Luca, Wyman, & Warren, 2012). This is particularly important with racially diverse students. Also, teachers have reported concerns with being able to develop relationships with diverse students (Buchanan & Buchanan, 2017). As a result, it is recommended that school districts support efforts to assist teachers with culturally sustaining teaching. Paris (2012) defined culturally sustaining teaching as supporting the "value of our ethnic and multilingual present and future" (p. 93). This approach allows teachers to connect with diverse students. These relationships may assist teachers in being able to identify if students are demonstrating any of the identified predictors for suicide-related behaviors within their district, thus generating a potential referral for services.

It is recommended that districts invest in efforts to support the development of their teachers with culturally sustaining teaching and pedagogy practices. These strategies will assist teachers in developing connections with diverse students. The Culturally Sustaining Teaching Certificate Program with the Urban Education Collaborative at the University of North Carolina at Charlotte is a 100% online program that trains educators on these practices. The Urban Education Collaborative has expertise in working with diverse, urban cities and districts. Thus, schools can become more

equipped as places for Students of Color to form relationships with teachers, staff, and peers, thereby becoming a more engaged student (Vega et al., 2012).

School social workers, counselors, and psychologists are on the front lines for addressing student psychosocial needs. Singer and Slovak (2011) examined whether school social workers were prepared with handling suicidal youth. Findings found that school social workers reported being underprepared for addressing suicide in the schools with youth (Singer & Slovak, 2011). Nassar-McMillan, Karvonen, Perez and Abrams (2009) suggested that in order to address the changing cultural trends in the United States, school counselors must be prepared for multicultural practices and advocacy within the academic setting for diverse students. Nonetheless, the majority of school counselors are from non-diverse programs making it more difficult to engage with students requiring attention to biases (Parikh, Post, & Flowers, 2011). Additionally, they suggest that helping professionals must be sensitive to the differences in school climates which is often a result in differences within the neighborhood, school, and family dynamics (Nassar-McMillan, Karvonen, Perez, & Abrams, 2009). As a result, it is suggested that training is directed towards how to handle diverse suicidal youth in the schools.

High school students are faced with a myriad of contemporary issues while concurrently dealing with developmental challenges. At the same time, the demands placed on them can be rather overwhelming. For instance, they may receive education about how to avoid completing suicide while at the same time being offered post-grief services after the suicide completion of a student in their school. What is missing is a focus on suicide-related ideation, planning, and attempts, for which a large proportion of

them have committed or engaged in. Additionally, an understanding of the predictors for suicide-related behaviors can normalize some of the experiences youth are having or have had in the past and provide insight as to what may have increased their desire to escape from the situation. It is equally important for them to learn how their peers have been resilient and survived through ideation, planning, and attempts. Suicide-related behaviors should be a topic of focus and not just suicide completion rates. As the narrative regarding suicide completion rates is more focused on White students, the discussion of suicide-related behaviors among diverse students will normalize the topic and help to bring additional attention to the topic. The narrative must change for the sake of the diverse students in this urban district.

In summary, recommendations for schools in the Culturally Responsive Suicide-Related Behavior Response Framework include the following:

1) Implement Post Suicide-Related Behavior Support – Develop standardized post suicide-related behavior policies, create specialized post suicide-related behavior intervention teams, and ensure equal access to post suicide-related behavior services.

2) Suicidality and Diversity Certification Program – Support the participation of teachers, staff, and administrators in the completion of online certification programs for handling diverse suicidal youth.

Conclusion

In conclusion, this study found that cyberbullying, loneliness, opioid use, sadness, and race were significant predictors of suicide-related behaviors in the GCS district. Implications were discussed regarding these findings. Homelessness was not identified

as a predictor variable in the study. It is suggested that homelessness was either underreported or it serves as a protective factor in the district. This could be the result of initiatives within the district to end homelessness as well as support resources for individuals experiencing homelessness. Additionally, it was found that moderation existed for sadness and suicide-related behaviors among racially diverse students in the GCS district. To address the needs of racially diverse populations, a Culturally Responsive Suicide-Related Behavior Response Framework was recommended. This would be particularly useful within urban and racially diverse districts. This would help to meet the needs of diverse students and to prevent future suicide attempts and completions. Recommendations were provided and summarized to guide research, prevention efforts, community-based strategies, and school strategies.

There is an urgent plea for intervention on behalf of diverse students who have higher rates of suicide-related behaviors in order to influence these rates and potentially prevent future suicide completions. Suicide prevention models focused primarily on suicide completions neglect to account for the higher rates of suicide-related ideation, planning, and attempts among racially diverse students. Suicide prevention models need to be based on culturally responsive strategies that aim to ultimately save lives while empowering and educating students about alternative means for escape.

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