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Co-Rumination in the Friendships of Black and White Adolescents

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Walden University

College of Education and Human Sciences

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Andrea R. Gourdine

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the review committee have been made.

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Walden University
2023

Abstract

Co-Rumination in the Friendships of Black and White Adolescents

by

Andrea R. Gourdine

MS, Walden University 2014

BA, Georgia State University, 2011

Proposal Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Developmental Psychology

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August 2023

Abstract

Co-rumination is the process of friends discussing challenges via a problem-focused dialogue that is excessive and involves dwelling on negative emotions. Co-rumination is related to higher friendship quality but also depression. The adjustment consequences of co-rumination have been studied, but racial differences in co-rumination have yet to be studied. The purpose of this non-experimental, correlational, quantitative study was to examine co-rumination among Black and White adolescents. Theoretical frameworks included the response styles theory and Africentric theory. Research questions included whether there were racial differences in the degree to which adolescents co-ruminate and in the relations of co-rumination with friendship quality and depressive symptoms. Data previously collected with approximately 569 adolescents were used to test the research questions. The dataset included participants' responses to measures assessing co-rumination, friendship quality, and depressive symptoms. ANOVAs, correlations, and regression analyses were conducted to test the research questions. Findings indicated that race did not moderate the relation between rumination and friendship quality, nor the relation between co-rumination and depressive symptoms. The positive social change implications are evident in this study as the results of the study will help to inform prevention and intervention efforts aimed at addressing risks associated with co-rumination in Black and White adolescent friendships.

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Chapter 1: Introduction to the Study

Introduction

Throughout the course of adolescence, youth will typically transition toward spending less time with their family members and more time with their friends (Padilla-Walker & Bean, 2009). Importantly, adolescents who engage in socially supportive relationships are protected against poor mental health outcomes and are less likely to experience depression (Ames-Sikora et al., 2017). Likewise, adolescents who have affirming and positive relationships with friends typically have a more positive evaluation of themselves. However, friendships do not always have a positive impact on a youth's well-being. Adolescents who have difficult relationships with friends will typically have an inauthentic and fragile representation of themselves, which can interfere with successful development during adolescence (Diehl et al., 2011).

Peer relationships during the adolescent period are important for socialization but may also create adjustment difficulties. For example, antisocial behavior can develop if adolescents experience reinforcement for delinquent behaviors (Criss et al., 2016). As another example, adolescents who engage in friendships with peers who have an excessive need for reassurance tend to experience high levels of distress (Schwartz-Mette & Smith, 2018).

One construct that is unique in adolescent friendships that is related to both positive and negative adjustment outcomes is co-rumination (Rose et al., 2007). Co-rumination is defined as the process of friends extensively discussing their challenges, speculating about issues, encouraging problem-focused dialogue, and dwelling on

negative emotions (Rose, 2002; 2021). Interestingly, co-rumination is related both to higher friendship quality between the co-ruminating friends and problematic emotional adjustment, including symptoms of depression (Rose et al., 2007).

Regarding the benefits of co-rumination, co-rumination is associated with positive friendship quality. Positive friendship quality is typically assessed using adolescents' reports of the degree to which their friendships include features such as companionship, help, and validation (Parker & Asher, 1993). These individual features can be studied separately, but typically they are combined into a single composite score (Furman & Rose, 2015). Co-rumination is believed to be associated with positive friendship quality due to the social sharing that is part of co-rumination. Although there is not much longitudinal research on co-rumination, there are some findings suggesting the association is bi-directional, with co-rumination leading to positive friendship quality over time, and positive friendship quality also leading to more co-rumination over time (Rose et al., 2007).

Sharing one's problems and concerns with others is not always beneficial (Hacker et al., 2016). In terms of co-rumination, friends spend extensive time talking about problems, and co-rumination involves focusing on negative feelings associated with problems. Ruminating on one's own problems is thought to be related to depressive symptoms due to its persistent negative focus (Hilt et al., 2010). Additionally, engaging in co-rumination with friends is associated with depressive symptoms presumably due to the negative focus during conversation (e.g., Harrington, 2020; Rose et al., 2014).

Previous studies found that engagement in co-rumination predicts increases in depressive and anxiety symptoms over time (e.g., Rose et al., 2014; Stone et al., 2011), although this finding is not consistent in all studies (e.g., Harrington, 2020). In addition, at least one study (Rose et al., 2014) found this association to be bi-directional with depressive symptoms also predicting more co-rumination over time.

The purpose of this study was to examine co-rumination among Black adolescents and White adolescents. This study is unique because it addresses an under-researched population regarding co-rumination, as previous research has involved mostly White participants (Lentz et al., 2016). Including Black adolescents in this research is especially important because many Black adolescents have experienced increased exposure to environmental stressors, as well as greater negative health and social consequences, in comparison to many other racial groups (Montgomery et al., 2011).

This research will test mean levels of co-rumination for Black versus White adolescents, as well as examine whether associations between co-rumination and friendship quality and depression differ for Black and White adolescents. Additionally, this research will also test the mean level of co-rumination for males and females amongst Black versus White adolescents to determine whether the results of White adolescents are the same for Black adolescents. Given the potential associations of co-rumination with adjustment, especially depressive symptoms, among Black adolescents, the exploration of co-rumination could lead to insights that could improve programming such as interventions for mental health targeting Black youth.

Ultimately, the insights gained through this study might assist school administrators, teachers, counselors, and therapists in being able to develop or adapt prevention and/or intervention programs that are relevant for Black youth, as well as White youth. Specifically, gaining insight into the impact co-rumination has on emotional and mental health could guide prevention and/or intervention program creators as they attempt to address the recent global increase of depression and suicidal ideation of Black and White youth caused by the global pandemic, COVID-19, as well as the present-day racism and violence directed at Black People.

To ensure the terms of race used in this dissertation were appropriate, the most recent American Psychiatric Association Manual (2019) was reviewed. According to the American Psychiatric Association (APA) manual (2019), the descriptors “Black” and “White” to identify populations are considered acceptable. It should be noted that using the terms Black and African American to describe American people of African ancestry are both acceptable, but the usage of Negro and Afro-American have been deemed outdated and inappropriate terms (American Psychiatric Association, 2019). The term Black is used in this dissertation rather than African American because participants’ ancestry is not known. As it relates to describing individuals from European ancestry, it is acceptable for researchers to use the terms “White” and “European American” (American Psychiatric Association, 2019); however, the use of “Caucasian” has been deemed inappropriate (American Psychiatric Association, 2019). It also should be noted that some have argued that comparative research can be considered problematic (APA, 2019; Azibo, 1988). However, according to the APA manual (2019), comparing racial groups

outcomes as they relate to a specific variable is appropriate. The study will be taking guidance from the American Psychiatric Association (2019) to cautiously avoid an overinterpretation of differences amongst the racial groups.

As an overview, this chapter will include the following topics: background, problem statement, purpose, research questions and hypotheses, theoretical framework, nature of the study, definitions, assumptions, delimitations, limitations, and summary.

Background

Co-rumination is an extreme form of disclosure between friends that is repetitive, speculative, and negatively focused (Rose, 2002). Co-rumination has been associated with a variety of positive and negative outcomes, including both higher friendship quality (positive) and higher levels of depressive symptoms (negative) (Rose, 2002; 2021). The most common way that co-rumination has been assessed is using the Co-Rumination Questionnaire (Rose, 2002). To date, researchers have little information about why co-rumination is related to depressive symptoms and positive friendship quality, but there is speculation about why co-rumination may be related to depressive symptoms and friendship quality.

Like rumination, the persistent negative focus of co-rumination contributes to depressive symptoms (Rose, 2021). This fits with research findings that suggest the concentration on negative issues (commonly found in co-rumination) can be considered problematic and lead to a depressed mood (Piraman, et al.,2016). Also, Schwartz-Mette and Smith (2018) concluded that adolescents likely burden themselves with their friend's distress when talking about problems, which may lead to internalizing symptoms.

As noted, at the same time co-ruminating with friends is related to positive friendship quality (Rose et al., 2014). This may be because of the overlap of co-rumination with self-disclosure and social support (Rose et al., 2014). Self-disclosure allows for individuals to develop closeness with others (Phillips et al., 2009). In addition, observational research indicates that when friends co-ruminate, they respond to one another in supportive ways which are also likely to contribute to positive friendship quality (Rose et al., 2014).

However, research has not considered the role of race in terms of co-rumination. For example, it is not known whether co-rumination is related to friendship quality among Black adolescents as found for White adolescents' friendship quality. Likewise, whether co-rumination is related to depressive symptoms among Black adolescents is not known. Understanding the associations with depressive symptoms is especially important within the Black community because in comparison to other races, Black youth face more negative health and social consequences due to their increased exposure to environmental stressors (Montgomery et al., 2011). Black adolescents are at a heightened risk for developing numerous adjustment issues in comparison to White adolescents, which heightens the importance of exploring predictors of adjustment problems among Black youth (Montgomery et al., 2011).

Researchers have also examined gender differences in co-rumination. Although gender is now known to exist on a continuum, past research assessed gender as a binary construct (Rose, 2002). These studies found that girls tend to have higher co-rumination than boys. These findings have emerged in self-report studies (Borowski & Zeman, 2018;

Stone et al., 2011) and in observational studies (e.g., Borowski & Zeman, 2018; Rose et al., 2014).

Problem Statement

Co-rumination has important implications for adjustment as it is a factor that is associated with increased friendship quality, but also with internalizing problems (Rose 2002; Rose et al., 2014). However, most research on co-rumination has been conducted with White youth. There has not been much research that examines whether there are differences in Black versus White adolescents in the degree of co-rumination. Further, no previous studies have examined whether the associations of co-rumination with friendship quality and depression differ by race. Additionally, previous research studies have not explored whether gender differences found among White youth would also show with Black youth. This study seeks to fill a gap in the research by focusing specifically on the potential differences related to the engagement of co-rumination and the associations with gender and adjustment amongst Black and White youth.

Purpose

The purpose of this quantitative study was to examine differences between Black and White adolescents' tendency to engage in co-rumination and in the associations of co-rumination with friendship quality and depressive symptoms. Gender difference in co-rumination and whether gender differences vary by adolescent race are examined in the current study. As stated earlier, it is now known that gender is not a dichotomous variable but rather that there are multiple gender identities including: transgender, nonbinary individuals (Joel et.al, 2014). However, because the previously collected data

used in this study assessed gender as a binary construct, the differences between girls and boys will be tested. The variables include co-rumination, race, gender, depressive symptoms, and friendship quality (Rose, 2002). The study involves secondary analyses of self-report data previously collected by Dr. Amanda Rose (chair of this committee). Participants included approximately 450 White adolescents and 150 Black adolescents who are 13-16 years old.

Research Questions and Hypotheses

Research Question (RQ) 1: Do Black and White adolescents differ in how much they co-ruminate as measured by the Co-rumination Questionnaire?

H_{1o}: Black and White adolescents do not differ in how much they co-ruminate.

H_{1a}: Black and White adolescents differ in how much they co-ruminate.

RQ 2: Is there an association between co-rumination as measured by the Co-rumination Questionnaire and depressive symptoms as measured by the Center for Epidemiologic Studies–Depression Scale?

H_{2o}: There is not an association between co-rumination and depressive symptoms.

H_{2a}: There is an association between co-rumination and depressive symptoms.

RQ 3: Does race moderate the association between co-rumination (as measured by the Co-rumination Questionnaire) and depressive symptoms (as measured by the Center for Epidemiologic Studies–Depression Scale)?

H_{3o}: Race does not moderate the association between co-rumination and depressive symptoms.

H3a: Race does moderate the association between co-rumination and depressive symptoms.

RQ 4: Is there an association between co-rumination as measured by the Co-Rumination Questionnaire and friendship quality as measured by the Friendship Quality Questionnaire?

H4o: There is not an association between co-rumination and friendship quality.

H4a: There is an association between co-rumination and friendship quality.

RQ 5: Does race moderate the association between co-rumination (as measured by the Co-Rumination Questionnaire) and friendship quality (as measured by the Friendship Quality Questionnaire)?

H5o: Race does not moderate the association between co-rumination and friendship quality.

H5a: Race does moderate the association between co-rumination and friendship quality.

RQ 6: Is there a Gender X Race interaction for co-rumination (assessed with the Co-Rumination Questionnaire) such that the size of the gender effect for White adolescents differs from the size of the gender effect for Black adolescents?

H6o: There is not a Gender X Race interaction.

H6a: There is a Gender X Race interaction.

Theoretical Framework

There are two theoretical frameworks that inform this study, response style theory and the Africentric thought theory. The construct of co-rumination builds on Nolen-

Hoeksma's response style theory (Ames-Sikora, et al., 2017). The response style theory suggests that rumination is an intrapersonal response style that individuals use to explore and process their feelings of sadness (Ames-Sikora et al., 2017). Additionally, the response style theory suggests that an individual's response to depressive affect and repeated focus on negative emotions determines the severity and duration of the depressive episode (Pössel, 2011). The response style theory applies to the study because the construct of co-rumination builds on rumination theory and research. Whereas rumination is an intrapersonal cognitive process, co-rumination is an interpersonal social process between relationship partners.

According to Mosley-Howard and Evans (2000), the Africentric thought theoretical framework suggests that the influence on African American beliefs, traditions, and practices come from African and American worldviews. It should be noted that the term 'African American' will be used for describing the Africentric thought theoretical framework, due to the consistent use of the term in work describing the theory, which references individual Americans of African descent and the focus on African culture (Nwoye, 2017). Therefore, the theory may be less relevant to Black adolescents who do not have an African ancestry.

According to the theory, African Americans function within their families and relationships based on the notion of collectivism, kinship bonds, spiritualism, and role flexibility (Mosley-Howard & Evans, 2000). The fundamental argument within the theory that Africentric views are considered more holistic in comparison to Eurocentric views suggests that disclosure between relationship partners, including co-rumination,

may be more common and valued among Black adolescents than White adolescents.

Africentric thought is an important concept in the study because it will assist in the acknowledgment that Black youth can have different upbringings and thinking patterns, which could impact their co-rumination engagement and the impact of co-rumination.

Nature of the Study

This study used a quantitative approach to address the research questions. Participant self-reports collected by Dr. Rose will be utilized for the proposed study with permission from Dr. Rose (who is also the chair of the committee). The dataset for the proposed study, which was collected by Dr. Rose in 2007-2009 includes approximately 450 White adolescents and 150 Black adolescents. Potential participants were recruited via rosters from a local school district in a mid-sized University town. Families were called and sent letters to invite their adolescent to participate in the study. Additionally, data regarding the participants' demographics (race and gender), depression, and friendship quality were based on survey data. For data collection, parental consent and participant (adolescent) assent were obtained, and the data were confidential. The names were replaced with identification numbers in the dataset shared by Dr. Rose for the current study.

Definitions

Adolescent: Individuals between 10 and 19 years of age (Petersen, 1988).

Co-Rumination: Mutual engagement of excessive problem talk, rehashing problems, speculating about problems, and dwelling on negative affect amongst friends (Rose, 2002).

Depression: Symptoms impacting an individual's daily life, including sadness, hopelessness, fatigue, and difficulty concentrating (U.S. Department of Health and Human Services, 2022).

Positive Friendship Quality: Degree of positive qualities in friendships, such as validation, caring, conflict resolution, help/guidance, and companionship within a friendship (Parker & Asher, 1993).

Assumptions

There were several assumptions made regarding this study. One assumption was that adolescents who participated are broadly representative of Black and White adolescents. If this is not the case, then the results may be generalizable only to adolescents from similar geographical regions, or even the community in which data were collected. Similarly, an assumption was made that the data collected in 2007-2009 are relevant to adolescents today. If not, this also would limit generalizability. Another assumption was that adolescents who participated in the study understood the questions. If adolescents did not have the cognitive ability to successfully process and respond to survey measures, the validity of the study would be compromised. To mitigate this concern, research assistants were present when adolescents responded to questionnaires. They were available to answer questions and did not detect any difficulties in terms of participants responding to the survey measures. As a result, the participants completed the survey measures truthfully.

Scope and Delimitations

Differences in co-rumination between Black and White adolescents are evaluated in the current study. Delimitations involves the inclusion and exclusion criteria of the study. To participate, adolescents were in the seventh or tenth grade, Black or White, and able to participate with a friend in the research laboratory on campus. Therefore, the study cannot provide information about adolescents in other grades, who are not Black or White, do not have transportation to campus, or do not have friends.

The contribution of the current research to the larger field depends on validity. The internal reliability was tested for each measure to ensure internal reliability as indicated by acceptable Cronbach alphas, which are typically .70 and higher (Rose, 2002; Poulin, et al., 2005; & Aoyama, et al., 2011). The three measures within the study have shown good internal reliability in the past. The Co-rumination Questionnaire Cronbach's $\alpha = .96$ (Rose, 2002), the CES-D Cronbach's $\alpha = .89$ (Poulin, et al., 2005), and the Friendship Quality Questionnaire Cronbach's $\alpha = .86$ (Aoyama, et al., 2011). Internal validity was also considered in terms of the degree to which the results fit with hypothesized relationships among variables. External validity cannot be proven. Thus, external validity will be discussed in terms of the likelihood that the results would generalize to other youth in similar geographic regions (Allen, 2017). One threat to validity in terms of generalizability is that the data were collected approximately 15 years prior to the completion of this study. Potential differences between adolescents in 2007-2009 versus 2022 will be discussed.

Limitations

A significant limitation of this dissertation study was that I was not present to document consent and confidentiality procedures. However, the institutional review board (IRB) application submitted by Dr. Rose for the original data collection was reviewed and approved by the University of Missouri (#05-05-313). Both parental consent and child assent forms were approved on the application. The IRB application submitted for this study was approved by Walden University's IRB (#02-16-23-0330536). Regarding confidentiality, names were collected as part of the original data collection. However, the names were replaced by identification numbers in the dataset shared by Dr. Rose, making the data anonymous to me as the author of this dissertation. Additional limitations as they relate to gender and race include the study is not exploring transgender and nonbinary individuals and is also not exploring races outside of Black and White populations. An additional limitation is that given the focus on friendships, the study only includes adolescents with friends and does not provide information about adolescents without friends. The data considered are also from a single point in time so the direction of the associations cannot be examined. Another limitation is that the dataset was collected by Dr. Rose approximately 15 years ago. Additionally, during this study, the race of the friend was not examined.

Significance

Ryder (1985) defines social change as a deliberate process of creating and applying ideas and strategies that promote the worth, dignity, and development of individuals, communities, and societies. This quantitative research study aligns well with

the mission of social change, advancing knowledge in the area of developmental psychology, by exploring a sample of Black and White adolescents and their engagement in co-rumination with friends. The potential inference that could be made about co-rumination at the conclusion of this study is whether co-rumination engagement differs as a protective factor or risk factor based on race. Specifically, that inference would contribute to future intervention and prevention programs by encouraging directors to present programs based on racial background. By considering differences between Black and White adolescents in terms of co-rumination, prevention and intervention programs can be created or revised to support social and emotional development among Black youth. Intervention and/or prevention programs would need to be different for Black versus White youth for the several reasons. For one, Black youth have experienced higher rates of anxiety and depression than White counterparts as of 2021 after years of dramatically lower rates (CNBC, 2022). Additionally, as of 2014, Black youth suicidal rates had tripled in comparison to White youth (CNBC, 2022). Finally, history of dehumanization, police brutality, and present-day racism compiled with the trauma of COVID-19 within the Black community has contributed to elevated negative mental and emotional health amongst Black youth (MHANational,2021). Such prevention and intervention programs could reduce the risk of Black youth developing emotional adjustment problems by providing youth with more adaptive forms of social support, including increasing positive interactions, which can contribute to positive self-worth, self-esteem, and positive affect (Lincoln et al., 2005).

Summary

Chapter 1 introduced the adjustment correlates of co-rumination, specifically depressive symptoms and positive friendship quality. In response to the gap in the literature, this quantitative study evaluates the potential difference in the degree to which Black adolescent friends and White adolescent friends engage in co-rumination, as well as the differences in terms of the association of co-rumination with gender, friendship quality, or depression. This study was built on well-accepted theoretical frameworks including the response style theory and the Africentric thought theory. The results of the study could contribute to social change by informing prevention and intervention efforts aimed at understanding risks associated with co-rumination in Black and White adolescent friendships.

The next chapter includes a review of the literature, as well as an examination of the theories that ground the study and an extensive analysis of relevant empirical research. Additionally, I will provide an explanation of the literature search strategy that was used in the study, as well more clarifying details of the research related to co-rumination with implications for relations with gender, depression, and friendship quality.

Chapter 2: Literature Review

Introduction

Co-rumination is defined as talking excessively about problems and revisiting the same problems repeatedly with a relationship partner, such as a friend (Rose, 2002). Co-rumination is positively associated with friendship quality, but it also increases the risk of internalizing problems (Rose, 2002; Rose et al., 2014). Despite the associations with adjustment, co-rumination among Black adolescents is not yet well understood. The purpose of this study was to examine the role of race in terms of co-rumination. For this study, data collected by Dr. Rose from 2007-2009 were used to examine potential differences between Black adolescent friends and White adolescent friends in the degree to which they engage in co-rumination. Additionally, the data from this study will be utilized to examine potential differences in terms of associations of co-rumination with gender, friendship quality, and depression.

This chapter includes the following topics: literature search strategy, review of response styles and Africentric theories, and a review of research related to co-rumination with implications for relations with gender, depression, and friendship quality.

Literature Search Strategy

Multiple databases were used for the literature search strategy, some of which included: EBSCO, PsycINFO, and Google Scholar. The search included the following topics: co-rumination, depression, Black and White adolescents, friendship, gender differences, response style theory, and Africentric theory. Authors who contributed to

seminal work associated with the topics included Nolen- Hoeksema, Rose, Meyer, Pagano, Hirsch, Borowski, and Zeman.

Theoretical Foundations

The two theories that used to guide this research are the response styles theory and Africentric theory. Each of these theories and their relevance for this research project is described in the subsequent sections.

The response style theory (RST) suggests that an individual's response to depressive symptoms determines the severity and duration of the depressive episode (Pössel, 2011). Nolen-Hoeksma (1991) suggested three different types of response styles to depressive or negative feelings. The three response styles are ruminative, distraction, and problem-solving response styles (Nolen-Hoeksma,1991). Rumination is the response style most relevant to the proposed study. RST suggests that ruminative response styles, which involve repeatedly focusing on negative emotions and stressful life events, lead to increased risk of depression (Pössel, 2011). Rumination is a cognitive pattern that focuses on negative content and leads to emotional distress. Numerous studies have found that ruminative response styles create risk for depression amongst children and adolescents (Weeland et al., 2017). The response style theory suggests that in comparison to males, females are more likely than males to ruminate over stressors, whereas males tend to distance themselves (Hilt et al., 2010). The co-rumination construct was developed based on RST; however, unlike rumination, which is individual and cognitive, co-rumination is social and between people (Rose, 2002). Co-rumination research suggests that females co-ruminate more and have a likelier chance of developing depression in comparison to

males (Rose, 2002). RST will guide the research as well as include several insights, some of which include understanding the differences in the experience of co-rumination for Black versus White adolescents and the impact co-rumination engagement has on emotional distress, emotional connection, and positive friendship quality.

Afrocentric thought or Afrocentric paradigm applies specifically to Black people with an African ancestry and involves how African and American societal structures influence African American's beliefs, traditions, practices, values, and history. Asante (2020) described Afrocentricity as thoughts and actions central to African values and perspectives, while also valuing cultural achievements. The Afrocentric paradigm values a collective identity that encourages mutual dependency and spirituality connecting all individuals to a higher being (Schiele, 1997). Mosley-Howard and Evans (2000) suggested that African Americans who maintain Africentric thought value the notion of collectivism, kinship bonds, spiritualism, role flexibility, and social support. Collectivism is the idea that individuals should value group identity more than individualism; kinship bonds relate to developing close relationships outside of biological bonds; spiritualism relates to the value of trusting and seeking guidance from a higher being; and role flexibility relates to family members sharing roles in order to ensure all needs are met within the family (Mosley-Howard & Evans, 2000). Collectivistic values lead to a positive impact on an individual's emotional health, socio-emotional development, and overall well-being (Mosley-Howard & Evans, 2000).

It should be acknowledged that not all Black people in the US have their family lines in Africa. In the current study, the Africentric theory is most relevant to Black

adolescents who have an African ancestry. However, the Africentric Theory remains relevant to my sample because of the trends related to beliefs, practices, and history that connect the Black community residing in the U.S., despite the birthplace of one's lineage.

Delineation of Assumptions of RST and Africentric Theory

Delineations are designed to set boundaries within research so that goals of the study are clear. There are delineations of the research project itself and of the application of the theories to the research. In terms of the research itself, delineations have been set by the research questions. Due to the study addressing differences between Black and White adolescents, the study does not provide information about adolescents of other races or individuals at other stage of life.

In terms of applications of the theories, although Africentric Theory can guide hypotheses related to race and response style theory can guide hypotheses related to co-rumination, neither theory considers both race and rumination. Therefore, whether the assumptions of Africentric Theory apply specifically to co-rumination, and whether the assumptions of response style theory apply across races is not specified. In addition, although Africentric theory is based on assumptions related to collectivistic values, these values are not explicitly assessed in the research.

Literature Review

Adolescent Friendships

During the adolescent stage, friendships allow adolescents the opportunity to grow socially and emotionally (Meyer, 2011). The development of interpersonal skills, social competence, and cooperation are just a few benefits friendships provide to

adolescents (Meyer, 2011). Adolescents also experience social support in their friendships, which is necessary for healthy development and functioning and impacts self-perceptions such as self-esteem (Lee et al., 2015).

As individuals progress through the adolescent stage, they experience an increase of positive qualities in their friendships (Furman & Rose, 2015). Specifically, there is an increase of self-disclosure and support in their friendships (Furman & Rose, 2015). The increase of self-disclosure typically occurs between ages 12 and 18 (Vijayakumar & Pfeifer, 2020). Between 12 and 18 years, adolescents begin experiencing increased independence, decreased reliance on their parental figures, and begin engaging in more disclosure with friends and romantic partners (Vijayakumar & Pfeifer, 2020). The progression of self-disclosure of adolescent relationships causes a decrease of disclosure to parents, but the source of emotional support from parents remains stable during early and late adolescence (Vijayakumar & Pfeifer, 2020). Disclosure of personal information assists in the maintenance of friendship as it encourages closeness and investment in relationships (Rude & Herda, 2010).

The Construct of Co-Rumination

Co-rumination is a form of disclosure in friendships (Rose, 2002). Specifically, co-rumination is the repeated, speculative discussion of problems or concerns with a focus on negative affect (Rose, 2002; Rose et al., 2014). Like rumination, co-rumination in friendships is associated with depressive symptoms, likely due to the persistent negative focus (Rose et al., 2014). Research suggests that co-rumination may be associated with depressive symptoms due to the cognitive and emotional vulnerability

that occurs as friends rehash negative situations and feelings (Stone et al., 2010).

Although friends' intentions may be to give and receive support, doing so through co-rumination has negative risks (i.e. emotional distress, depressive symptoms) (Stone et al., 2010). When adolescents co-ruminate, they spend less time engaging in positive activities that could diminish negative affect (Schwartz-Mette & Rose, 2012). Co-rumination may also heighten worries related to problems and the consequences of personal problems (Rose, 2002). Simply, the fixation on problems, excessive rehashing, and dwelling on negativity drive negative outcomes from co-rumination (Felton, et al., 2019).

Nevertheless, co-rumination is also associated with positive friendship outcomes, perhaps due to an increase in emotional closeness due to sharing problems and concerns (Stone et al., 2010). Engaging in a co-ruminative relationship has also been a positive experience for many adolescents as they have reported having a high level of support, as well as agreeable responses during their conversations with friends (Felton et al., 2019). Adolescents engaging in co-rumination have also been found to have higher quality relationships in emerging adulthood (Van Zalk & Tillfors, 2017).

Racial Differences in Friendships: Implications for Co-Rumination

Adolescent engagement in friendships vary somewhat when comparing the friendships of Black and White youth. Rude and Herda (2010) proposed that there are race differences in youths' values, which could affect relationships like friendships. As noted, within the African American culture, there is an importance placed on collectivistic values, social harmony, and interpersonal relationships (Lentz et al., 2016).

These findings are relevant to the present study to the degree to which Black adolescents in the current study have an African ancestry.

More generally, some research suggests greater social support, from multiple sources, among Black individuals than White individuals (Lincoln et al., 2005). Research has suggested that Black families will often provide support to their adolescent aged children, whether emotional or instrumental, to assist them in coping with the stressors of daily life (Cross et al., 2018). However, it should be noted that there is limited research regarding support networks for Black adolescents, which is detrimental due to the importance of support for social and emotional adjustment during the adolescent period and for the formation of racial/ethnic identity for minority youth (Cross et al., 2018). Within the Black community, family members, church relationships/religion, and neighbors are important sources for support (Taylor et al., 2001). In addition, Black individuals are more likely to depend on extended family for social support (Kim & McKenry, 1998). More specifically, research has concluded that the social support Black adolescents receive serve as a buffer to psychological distress and assists with psychological well-being, as well as socio-emotional adjustment (Cross et al., 2018).

Heightened social support might extend to the friendships of Black adolescents. For example, one study found that Black adolescents reported having more close friends than White adolescents (Lee et al., 2015). Collective values among Black adolescents have also been proposed to foster a willingness to share challenges with close friends (Lentz et al., 2016). These findings suggest that social support, and perhaps co-rumination, may be more common among Black friends than White friends.

Despite reason to suspect race differences in co-rumination, little research has examined racial differences in co-rumination. One study by Lentz et al., (2016) did examine race differences in co-rumination and found similar levels of co-rumination among Black and White adolescents in the 9th and 12th grades. However, the sample sizes of some racial and gender groups were small. Of the 445 boys, only about 25 were Black, and of the 432 girls, only about 90 were Black (Lentz et al., 2016). Although the authors did not present a power analysis, it seems possible that the study did not have sufficient power to detect racial differences.

This study extends past research by using a sample with sufficient power to compare the degree to which Black and White adolescents report engaging in co-rumination. In this study, 100 Black girls and 82 Black boys were participants, and 191 White girls and 196 White boys were participants. Specifically, it is hypothesized that Black adolescents will report greater co-rumination than White adolescents because of the higher reports of close friendships in previous studies and collectivistic values embedded within the culture, which fosters more willingness to share issues with friends (Lee et al., 2015; Lentz et al., 2016).

Relations Between Co-Rumination and Depressive Symptoms in the Friendships of Black and White Adolescents

In this study, there will be an examination of whether there are race differences in the association between co-rumination and depressive symptoms. As noted, co-rumination is related to a greater risk for depression (Bastin et al., 2018). Although research with samples of mostly White adolescents find associations between co-

rumination and depression (Lentz et al., 2016; Rose et al., 2007; Stone et al., 2011), whether these associations differ for Black and White adolescents is unknown (Lentz, et al., 2016).

I conjecture that the association between co-rumination and depression is stronger for White adolescents than Black adolescents. In some ways, Black youth have been found to be especially resilient. For example, although Black children and adolescents up to age 18 experience more stress than White children and adolescents on average (Montgomery et al., 2011), Black children and adolescents between the ages of 11-13 do not report greater depression than White children and adolescents (Stone et al., 2011). If Black youth are also especially resilient in response to the risk of co-rumination in terms of depressive symptoms, the association between co-rumination and depressive symptoms may be stronger for White adolescents than Black adolescents.

Relations Between Co-Rumination and Friendship Quality in the Friendships of Black and White Adolescents

This study evaluates the associations between co-rumination and friendship quality among Black and White adolescents. As mentioned previously, researchers have found that, in studies of mostly White participants (specifically those between ages 11-14 years old), co-ruminative relationships are related to emotional closeness (Felton et al., 2019; Rose, 2002). However, no studies have analyzed racial differences in the association between co-rumination and friendship quality in adolescence. This study examines whether the strength of the association between co-rumination and friendship quality differs for Black and White adolescents. It is suspected that the association

between co-rumination and friendship quality will differ for Black adolescents and White adolescents. The higher levels of familial support and greater involvement of extended family among Black adolescents than White adolescents suggest that Black adolescents may especially value close relationships (Way & Chen, 2000). If this is the case, engaging in co-rumination may be especially meaningful to Black adolescents and related strongly to friendship quality.

The Role of Gender

The role of gender will also be examined in the current research in two ways. First examining, whether the gender differences (i.e., girls engaging in more co-rumination than boys) typically found for co-rumination in mostly White adolescents are similar in the friendships of Black adolescents (Rose, et al., 2007; Spendelow, et al., 2017). The second examination of gender will highlight whether gender further moderates the associations of co-rumination with depressive symptoms and friendship quality among Black and White adolescents. Ultimately, the moderation analyses will test whether interactions between race and co-rumination predict depressive symptoms or friendship quality similarly for girls and boys.

Gender Differences in Co-Rumination in Black and White Friendships

In studies of mostly White adolescents, gender differences are found in co-rumination (Rose, et al., 2007). In fact, considerable research in predominately White samples indicated that girls co-ruminate more than boys between ages 12-14 during the early to middle adolescent stage (Borowski & Zeman, 2018; Stone et al., 2011; Taylor, et al., 2001). Additionally, during the early to middle adolescent stages, adolescents will

begin emotionally separating from their parents and begin developing stronger friendships with their peers (Christie & Viner, 2005). Additional findings indicate that friendships among females tend to involve greater disclosure of personal information than friendships among males (Aukett, et al., 1988). For example, societal gender roles suggest that girls and women are expected to utilize more communication to build relationships, whereas boys and men are expected to establish dominance and gain tangible desires via communication, which could also contribute to the higher engagement of co-rumination amongst girls (Merchant, 2012). Whether the findings that adolescent girls co-ruminate more than adolescent boys from studies with predominately White samples extend to Black adolescents is not known. One study of self-disclosure with a sample of adolescents ranging from 14-19 years old, found that, although White adolescent girls reported more self-disclosure in their friendships than White adolescent boys, Black adolescent girls and adolescent boys reported similar levels of self-disclosure in their friendships (Pagano & Hirsch, 2007). Accordingly, I hypothesize that gender differences in co-rumination found for White adolescents may not be found in the friendships of Black adolescents.

Gender as a Moderator of Associations Among Co-Rumination, Race, and Friendship Quality/Depressive Symptoms

Whether the associations among co-rumination, race, and gender interact in predicting depressive symptoms and in predicting friendship quality are an area of interest within the study. A primary question of the study is whether co-rumination and race interact when predicting depressive symptoms and/or friendship quality. Testing the

three-way interaction among co-rumination, race, and gender will provide information about whether the predicted co-rumination by race interactions are similar for girls and boys. There is a strong basis for expecting that the association between co-rumination and depressive symptoms among Black adolescents and among White adolescents will differ further for girls and boys. Likewise, there is a strong basis for expecting that the association between co-rumination and friendship quality among Black adolescents and White adolescents will differ for girls and boys. However, research with mostly White samples typically do not find that relations of co-rumination with depression and friendship quality differ for girls and boys (Rose, 2021).

Due to Black adolescents facing more environmental stressors, childhood trauma (i.e. parental death, extreme deprivation), and exposure to traumatic events (i.e. threatened with a weapon, racist acts), I hypothesize that there will be significant differences in the association between co-rumination and depressive symptoms and friendship quality for Blacks versus White adolescents. Specifically, there is a higher report of value of emotional dependence that exists within the Black community in comparison to the White community and because Black girls internalize more problems than White girls (Carlson & Grant, 2008; Lincoln, et al., 2005).

Summary and Conclusions

This chapter reviewed the Response Styles Theory and Africentric theories to conceptualize possible predictors of co-rumination in Black and White adolescent friendships. Conceptually, attachment theory, rejection sensitivity theory, and gender role orientation theory each suggests potential relationships of the relevant construct(s).

Literature also was reviewed including many quantitative studies that indicated that several racial differences found in constructs including gender, friendship quality, and depression were related to co-rumination. As demonstrated, the literature supports the presence of co-rumination, but not a thorough look at predicative factors related to the differences of co-rumination engagement amongst and White Adolescents, which this quantitative study will consider. The gap in literature is present due to the lack of consideration regarding Black and White adolescent friends engaging in co-rumination, as well as the differences in terms of the association of co-rumination with gender, friendship quality, or depression and the impact co-rumination in adolescent friendships.

Chapter 3 will discuss the research method including the research design and rationale, methodology, data analysis plan, and threats to validity of how to address the gap in research. This present study will examine the strength of the relation between co-rumination and friendship quality for Black and White adolescents and whether the relations among co-rumination, race, depression, or friendship quality are moderated by gender.

Chapter 3: Research Method

Introduction

The purpose of this study was to investigate whether differences in co-rumination exist as a function of an adolescent's race and gender, as well as exploring racial differences in the links between co-rumination and the two outcome variables of friendship quality and depressive symptoms. The results from the secondary analyses will be interpreted through the lens of the response style and Africentric thought theories. The results from the study will assist in creating prevention and interventions to address risks associated with co-rumination engagement for Black and White adolescents. This chapter includes an explanation of the research design and methodology, population and sampling, procedures for data collection, and instruments used in the study. Additionally, this chapter will present the data analytic plan and potential threats to validity.

Research Design and Rationale

This current study will use a quantitative research design to address the research questions. A quantitative design is appropriate to test theories and establish generalizable facts regarding a specific topic through the examination of associations among variables assessed with instruments, such as survey measures (Creswell & Creswell, 2018). The study design is a nonexperimental correlational design, meaning manipulation of an independent variable is not a requirement of the design (Creswell & Creswell, 2018).

To address RQ1, whether there are differences in levels of co-rumination between Black and White adolescents, co-rumination is the dependent variable and race is the independent variable. To analyze RQ1, a two-sample *t*-test was conducted. To address

RQ2, whether there is an association between co-rumination and depressive symptoms, a bivariate linear regression was conducted with co-rumination as the independent variable, and depressive symptoms as the dependent variable. To address RQ3 of whether race moderates the effects of co-rumination and depressive symptoms, a multiple regression analysis will be conducted, with co-rumination as the independent variable, depression as the dependent variable, and race as a moderating variable. To address RQ4 of whether there is an association between co-rumination and friendship quality, a bivariate linear regression analysis will be conducted with co-rumination as the independent variable and friendship quality as the dependent variable. To address RQ5 of whether race moderates the association between co-rumination and friendship quality, a multiple linear regression analysis will be conducted with co-rumination as the independent variable, friendship quality as the dependent variable, and race as the moderating variable. To address RQ6 of whether there is a race by gender interaction in co-rumination, a mixed model ANOVA will be conducted with co-rumination as the dependent variable and race, gender, and their interaction as independent variables.

The majority of the studies described in Chapter 2 utilized a nonexperimental correlational design, which is common in social sciences when studying the association between variables without manipulating a variable (Creswell & Creswell, 2018).

Therefore, the current study is comparable to past studies to allow for a clear extension of the literature.

There are few time and resource constraints in this study due to the use of the previously collected data including: the expectation of owning a computer with the ability

to run SPSS programming, as well as the expectation of learning the procedures of the study and gaining familiarity with the dataset. However, the constraints that do exist that would affect my ability to collect data, analyze it, and report the results are technical and cultural constraints. Due to my inexperience in utilizing SPSS, I could experience challenges in running the correct tests and interpreting the results correctly. To address this constraint, I connected with a research tutor to gain better training on SPSS. As it relates to the cultural constraint, there was the possibility to find an abundance of results that are not relevant to present day culture in the dataset. To address this constraint, I planned to accept the relevance of the data that didn't relate to my research.

Methodology

Population

According to the U.S. Census Bureau, there were roughly 74,019, 405 youth under the age of 18 in 2007 in the United States (Bureau, 2022). The target population for this study included Black and White adolescents in the United States. The U.S. Census Bureau (2022) indicated there were 56% White adolescents and 14% Black adolescents in the United States in 2007. The most recent proportion in the United States, as of 2022, indicated there were 49% White adolescents and 14% Black adolescents (U.S. Census Bureau, 2022).

Sampling and Sampling Procedures

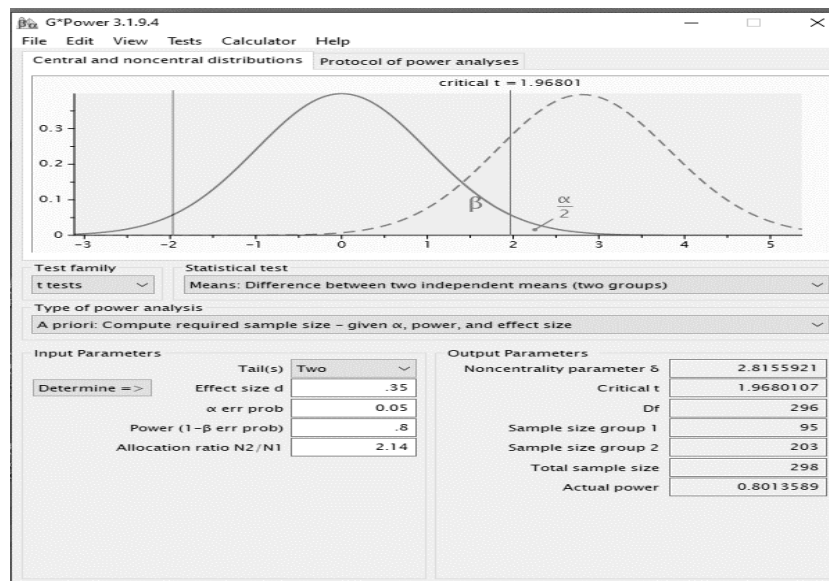
The sample used in this study was collected in 2007-2009 and consisted of students in seventh and tenth grades. The data collection included observations and self-reports, but, for the current study, only self-reports will be used. To be included in the

study, individuals had to have a same-sex best friend with whom to participate who were within two years of age of each other and not relatives. This inclusion criterion meant excluding adolescents who did not have a friend who met the study's criteria. There are likely differences between adolescents who did and did not have a friend to participate that could not be tested with these data.

As described in more detail in the following sections, the sample for the study included 569 adolescents. To determine whether the number of participants available could detect expected effects, power analyses were conducted via G*Power 3.1.92 (Hedberg, 2017). Power analyses provide information about the likelihood that tests will detect effects of a particular size with a particular sample size. Power of 0.80 is considered the minimal power needed to detect an effect of a particular size (Serdar et al., 2021). A medium effect size was used in the power analyses rather than large effect size because effect sizes within social sciences are typically not large (Serdar et al., 2021).

For the RQ1, a G*Power analysis was conducted for a *t*-test, with .80 power and with an allocation ratio (ratio of White adolescents to Black adolescent) of 2.14. The G*Power analysis is presented in Figure 1. The power analysis indicated that a total sample of 298 adolescents, with 95 Black adolescents and 203 White adolescents, was needed. The current sample exceeds these requirements.

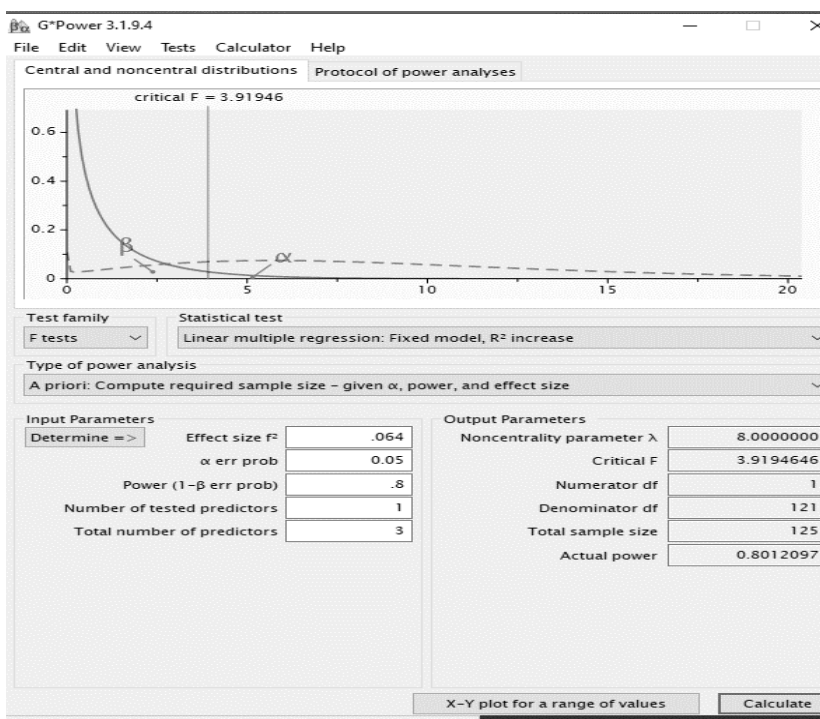
Figure 1

Power Analysis for T Test

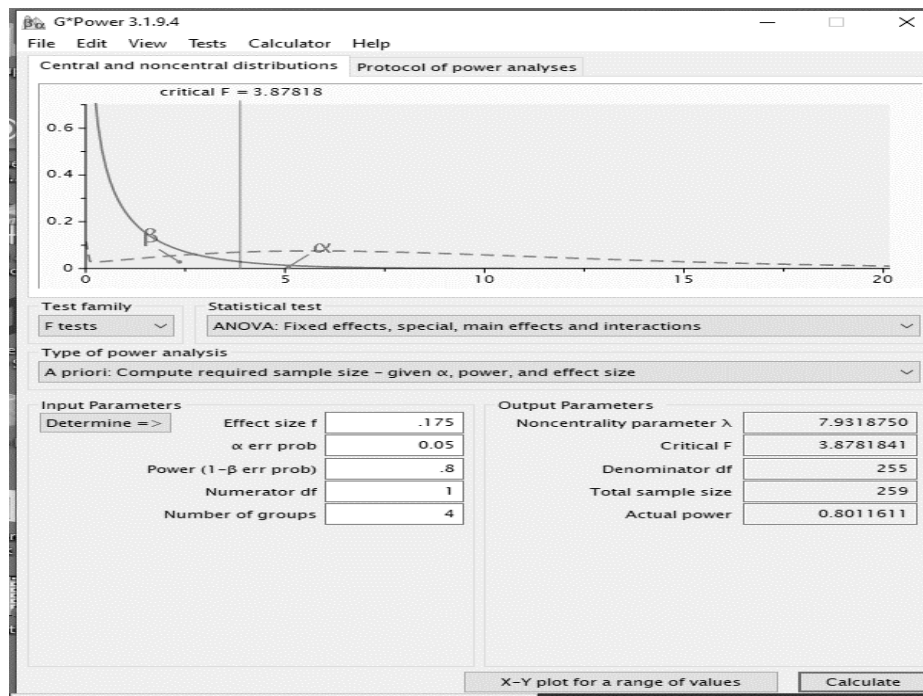
For Research Questions 2, 3, 4, and 5, linear regression analyses were conducted. For Research Questions 2 and 4, each model has one predictor. For Research Questions 3 and 5, each model has three predictors consisting of two main effects and one interaction. A G*Power analysis was conducted for a model with three predictors. The output is presented in Figure 2. In addition, the effect of interest is the interaction. Therefore, the power analysis testing the R^2 change was conducted. The total number of predictors was 3, and the number of tested parameters was 1. The analysis indicated that the required sample size was 125, which the current sample exceeds. Additional power analyses were not conducted for the models with a single predictor because there was sufficient power for the more complicated models with three predictors; that means that there also is sufficient power for the models with only one predictor.

Figure 2

Power Analyses for Multiple Linear Regression Analyses.



For Research Question 6, which tested race and gender differences in co-rumination, a G*Power analysis was conducted for an ANOVA. For the analysis, the number of groups was set at 4 and the numerator df was set at 1. The output is presented in Figure 4. The sample size required was 259, which my sample exceeds.

Figure 3*Power Analysis for ANOVA***Procedures for Recruitment, Participation, and Data Collection**

The dataset used for the study is derived from a secondary dataset. Therefore, this study did not require recruitment of new participants. For the original data collection, students' names were randomly selected from rosters within the school district, and these families were called and sent letters asking the adolescent to participate (see Rose et al., 2014, 2016). Recruitment continued by sending 1,771 letters home to families (see Rose et al., 2014; 2016); of these families, 937 were reached via telephone. The adolescents were invited to participate in the study with a close or best friend of the same-sex and not a family member. If the participant was unable to find a close or best friend for the study,

they were excluded from participation. Ultimately, there were 628 adolescents in 314 friend pairs.

In addition, for the current study, the sample was limited to participants who identified as Black or White. Of the 628 participants, the resulting sample size for the current study was 569 adolescents. The sample included 387 White adolescents and 182 Black adolescents. There were 278 male participants and 291 female participants. More specifically, 100 Black girls and 82 Black boys were participants in the study, and 191 White girls and 196 White boys were participants.

The role of the friend's race was beyond the scope of this study; however, for descriptive purposes, most adolescents participated with a friend of the same race. Of the 182 Black adolescents, 124 (68%) participated with a Black friend and 39 (21%) participated with a White friend; the remaining 11% participated with a friend of a race other than Black or White. Of the 387 White adolescents, 326 (84%) participated with a White friend and 39 (10%) participated with a Black friend; the remaining 6% participated with a friend of a race other than Black or White).

In terms of data collection, researchers conducted the study within a university laboratory. Parental consent and youth assent were obtained. The friends were then separated to complete the questionnaires. Participants completed paper and pencil copies of questionnaires. The questionnaires used in this study took between 20- 30 minutes to complete. Researchers later entered the data into the computer.

Dr. Rose granted permission for the use of the data that were collected in Columbia, Missouri. The IRB at the University of Missouri also granted approval for me

to access the data. Prior to accessing the data, approval was also obtained from Walden University's IRB. Dr. Rose sent the de-identified data in an excel file.

Instrumentation and Operationalization of Constructs

Demographics

The demographics of the participants were obtained by adolescents self-reporting their gender and race. For gender, participants were asked to circle "boy" or "girl." For race, participants were given a list of possible races/ethnicities to choose from including European American/White, African American/Black, American Indian, Pacific Islander, Asian American, and Latino/a. Only participants that rated themselves as African American/Black or European American/White were included in the study.

Co-Rumination

Co-rumination was assessed with the Co-Rumination Questionnaire (CRQ; Rose, 2002). The CRQ has a total of 27 items (Rose, 2002). Consistent with the definition, co-rumination items assessed the degree to which the friends repeatedly discussed problems, encouraged one another to continue discussing problems, and focused on negative emotions (Rose, 2002). Participants were asked to consider how they typically talk about problems when they are with same-sex close friends (Rose, 2002). A sample item from the questionnaire (Rose, 2002) was, "We spend most of our time together talking about problems that my friend or I have." Participants rated each item using a 5-point Likert scale ranging from 1 (not at all true) to 5 (really true) in terms of how true the description of how they typically talked about problems with friends. Co-rumination scores are computed by taking the mean score of the ratings across the 27 items (Rose, 2002).

Higher scores indicate greater self-reported co-rumination with friends. The CRQ has been utilized in previous studies (e.g., Lentz et al., 2016; Rose et al., 2007; Starr & Davila, 2009, see Rose, 2021 for a review). The internal reliability of the measure has been found to be high (e.g., $\alpha = .96$; Rose, 2002). Construct validity of the measure is supported by research indicating expected relations with related variables (i.e., rumination and disclosure, Rose, 2002).

Depressive Symptoms

Depressive symptoms were assessed with Center for Epidemiologic Studies–Depression Scale (CES-D), which was developed for the purpose of assessing depressive symptoms amongst youth (Radloff, 1977). This measure is used with both children and adults (e.g., Beekman et al., 1997; Radloff, 1977; Roberts et al., 1991; Sawyer et al., 1986). Participants were asked to consider whether they felt or behaved in a way described in the item (Radloff, 1977). The questionnaire (Radloff, 1977) has a total of 20 items with a 4-point Likert scale. Participants rated each item using a 4-point Likert scale with descriptors ranging from 1 (Rarely or none of the time- less than a day), to 4 (Most or all of the time- 5-7 days). The total score is computed by taking the mean score of the ratings across the 20 items (Radloff, 1977). Higher scores represented greater self-reported depression. The depression scale has been utilized by many researchers, past research indicates that the internal reliability of the measure was high (Cronbach's alpha $> .80$; e.g., Beekman et al., 1997; Radloff, 1977; Roberts et al., 1991; Sawyer et al., 1986) including with samples of youth.

Friendship Quality

Friendship quality was assessed with a revised version of the Friendship Quality Questionnaire (Parker & Asher, 1993; adapted by Rose, 2002). Items assessed companionship (3 items), intimacy (3 items), validation and caring (3 items), help and guidance (3 items), and conflict resolution (3 items). As recommended (Furman & Rose, 2015), and, as in past research (Rose et al., 2014; 2016), all 15 items are used to create a single positive friendship quality score. The Friendship Quality Questionnaire also includes three items that assess conflict (Parker & Asher, 1993). Previous work (Furman, 1996; Parker & Asher, 1993; Rose, 2002; 2004) indicates that the positive friendship quality score and the conflict score are not significantly related to one another. Therefore, in past research, they have been treated as separate variables (Lansford et al., 2003). In the current study, only positive friendship quality will be considered because conflict is not consistently related to co-rumination (Rose, 2021) and it will keep the number of research questions manageable within the study. For each item, participants were asked to answer with the specific friend in mind with whom they visited the lab. Participants rated each item using a 4-point Likert scale ranging from: 1 (*not at all true*), to 5 (*really true*) in terms of the degree to which the item was true of their friendship. Positive Friendship Quality scores are computed by taking the mean score of the ratings across the 15 positive items in the Friendship Quality Questionnaire (Parker & Asher, 1993). Higher scores indicated more positive friendship quality.

Past research supports the reliability and validity of the measure. The internal reliability of the friendship quality measure has been found to be high in past research

(e.g., $\alpha = .86$; Aoyama et al., 2011, Crawford & Manassis, 2011; Selfhout et al., 2009; Verswijvel et al., 2018; Woods et al., 2009). Research finding that adaptive social skills are related to experiencing higher friendship quality (Rose & Asher, 2004) supports the validity of the measure.

The Friendship Quality Questionnaire also includes three items that assess conflict (Parker & Asher, 1993). Previous work (Furman, 1996; Parker & Asher, 1993; Rose, 2002; 2004) indicates that the positive friendship quality score and the conflict score are not significantly related to one another. Therefore, in past research, they have been treated as separate variables (Lansford et al., 2003). In the current study, only positive friendship quality will be considered because conflict is not consistently related to co-rumination (Rose, 2021) and it will keep the number of research questions manageable within the study.

Data Analysis Plan

Dr. Rose will provide the data in Excel format and will be converted into an IBM SPSS Statistics data file to perform the statistical analyses. Due to the data in this study being previously collected data, the data cleaning and screening were completed before the data were in my possession. The data cleaning process consisted of two sets of research assistants entering the data and then comparing the entered data to ensure accuracy. Secondly, the researchers looked for participants with scores outside the possible range to identify errors and also screen for potential outliers. No scores outside of the possible range or notable outliers were identified.

Psychometric and Descriptive Information

To determine the internal reliability of the measures in this sample, Cronbach's alphas will be computed. The means and standard deviations for all variables will be presented and correlations among the variables will be presented.

Primary Analyses to Address Research Questions

RQ1: Do Black and White adolescents significantly differ in how much they co-ruminate as measured by the Co-rumination Questionnaire?

H_{1o} : Black and White adolescents do not significantly differ in how much they co-ruminate.

H1a: Black and White adolescents significantly differ in how much they co-ruminate.

For the first research question regarding whether Black and White youth differ on levels co-rumination, I will conduct an independent samples t -test. Race will be the independent variable and co-rumination will be the dependent variable. The t value will be evaluated. T values with p values smaller than .05 will be considered significant.

RQ2: Is there an association between co-rumination as measured by the Co-rumination Questionnaire and depressive symptoms as measured by the Center for Epidemiologic Studies–Depression Scale?

H2o: There is not an association between co-rumination and depressive symptoms.

H2a: There is an association between co-rumination and depressive symptoms.

To address the second research question of whether there is an association between co-rumination and depressive symptoms, I will conduct a linear regression. Depressive symptoms will be the dependent variable, and co-rumination will be the independent variable. The magnitude and direction of the standardized beta coefficient will be interpreted. Beta coefficients with p values smaller than .05 will be considered significant.

RQ3: Does race moderate the association between co-rumination (as measured by the Co-rumination Questionnaire and depressive symptoms (as measured by the Center for Epidemiologic Studies–Depression Scale)?

H3₀: Race does not moderate the association between co-rumination and depressive symptoms.

H3_a: Race does moderate the association between co-rumination and depressive symptoms.

To address the third research question regarding whether race moderates the association between co-rumination and depressive symptoms, I will conduct a multiple linear regression analysis. Depressive symptoms will be the dependent variable, and co-rumination will be the independent variable. Race will be the moderating variable. The magnitude and direction of the standardized beta coefficient will be interpreted. Beta coefficients with p values smaller than .05 will be considered significant.

RQ4: Is there an association between co-rumination as measured by the Co-Rumination Questionnaire and friendship quality as measured by the Friendship Quality Questionnaire?

H4o: There is not an association between co-rumination and friendship quality.

H4a: There is an association between co-rumination and friendship quality.

To address the fourth research question of whether there is an association between co-rumination and friendship quality, I will conduct a linear regression. Friendship quality will be the independent variable and co-rumination will be the dependent variable. The magnitude and direction of standardized beta coefficients will be interpreted. Beta coefficients with p values smaller than .05 will be considered significant.

RQ5: Does race moderate the association between co-rumination (as measured by the Co-Rumination Questionnaire) and friendship quality (as measured by the Friendship Quality Questionnaire)?

H5o: Race does not moderate the association between co-rumination and friendship quality.

H5a: Race does moderate the association between co-rumination and friendship quality.

To address the fifth research question regarding whether race moderates the strength of the association between co-rumination and friendship quality, I will conduct a multiple linear regression analysis. Friendship quality will be the dependent variable, co-rumination will be the independent variable, and race will be the moderating variable. The magnitude and direction of standardized beta coefficients will be interpreted. Beta coefficients with p values smaller than .05 will be considered significant.

RQ6: Is there a Gender X Race interaction for co-rumination (assessed with the Co-Rumination Questionnaire) such that the size of the gender effect for White adolescents differs from the size of the gender effect for Black adolescents?

H6o: There is not a Gender X Race interaction.

H6a: There is a Gender X Race interaction.

An ANOVA will be used to test the sixth research question regarding whether there is a Gender X Race interaction for co-rumination. Co-rumination will be the dependent variable, and gender and race will be the independent variables. This analysis will test the gender main effect, the race main effect, and the Gender X Race interaction. The interaction, which will test whether the strength of the gender effect differs for Black and White adolescents, is of particular interest in the study. For each main effect and interaction, the F value will be evaluated. F values with p values smaller than .05 will be considered significant.

Statistical Assumptions

The respective statistical assumptions within a t -test are that the population within the study should be randomly selected and that each group is normally distributed (Kim & Park, 2019). The respective statistical assumption within the linear regression is that linear relationships must exist between the outcome and independent variables (Uyanık, & Güler, 2013). The respective statistical assumptions within an ANOVA include: all responses for each factor level have a normal population distribution and the data are independent (Creswell & Creswell, 2018). For all analyses, the data should be normally distributed, which will be evaluated by obtaining skewness and kurtosis values for the

continuous variables (co-rumination, positive friendship quality, and depression).

Skewness and kurtosis values ranging from -2 to 2 are thought to represent a normal distribution (Kim, 2013; West et al., 1995). However, moderate variation from these values is considered acceptable given that analyses based on the general linear model, including regression and ANOVA, are robust to deviations from normality (Blanca Mena et al., 2017).

Threats to Validity

Internal and external validity will both be considered. Internal validity refers to whether the methods used assess the constructs intended to be assessed within a study (Allen, 2017). Importantly, as described previously, the internal validity of the measures to be used in this dissertation have been demonstrated in past research (e.g., Sawyer et al., 1986; Woods et al., 2009). Supporting internal validity, the constructs have been found to be related to other variables in meaningful ways (Sawyer et al., 1986). As noted, past studies also indicate high internal reliability (e.g., Beekman et al., 1997; Radloff, 1977; Roberts et al., 1991; Sawyer et al., 1986).

External validity refers to whether the findings of the research generalize to a larger population (Allen, 2017; Creswell & Creswell, 2018). Threats to external validity include whether the results could be generalized to other populations, such as younger children, and other geographic locations. The data were originally collected in Columbia, Missouri in 2007-2009 and drew from participants who attended public schools. Therefore, the data may only be generalizable to adolescents from other mid-sized Midwestern towns. It should also be noted that because all participants attended public

schools, the results may not be generalizable to adolescents attending other school settings such as a private school, charter school, or a homeschool program.

Additionally, the data were collected over ten years ago and generalizability to the present day could be limited. More specifically, since 2009, there have been several global events that could have an influence on co-rumination engagement amongst Black and White adolescents including the Black Lives Matter Movement.

Ethical Procedures

The proposed study utilizes archival data collected by Dr. Amanda Rose in 2007-2009. Parental consent and youth assent were both obtained in the original research and consent/assent forms are presented in the Appendices. Consent, assent forms, and survey data were kept confidential, with hard copies of each survey labeled with identification numbers. Documents linking names and identification numbers were stored separately from the data. For the dissertation, the data that will be provided are anonymous because the file to be shared by Dr. Rose has only id numbers and no information linking the id numbers to any identifiable information. Dr. Rose has kept the electronic data in a secure location on a password-protected computer. Additionally, I have reviewed the original IRB application approved by the University of Missouri to ensure that all procedures met ethical standards. Approval through Walden's IRB will be sought out after the approval of this proposal.

Summary

This chapter provided information about the research design of this nonexperimental correlational study. The chapter described each instrument utilized in

the study as well as providing sample items and information about how each item is measured, while also highlighting the instruments' reliability and validity as demonstrated in past research with adolescent populations (e.g., Beekman et al., 1997; Radloff, 1977; Roberts et al., 1991; Sawyer et al., 1986). The information found within the data analysis plan section included a description of the statistical tests to be conducted to address the primary research questions. Additionally, issues related to internal and external validity were discussed as well as ethical issues related to the study.

Chapter 4: Results

The purpose of this quantitative study was to examine differences between Black and White adolescents in terms of their engaging in co-rumination and the associations with friendship quality and depressive symptoms. Additionally, I explored whether race moderated the association between co-rumination and depressive symptoms, as well as the association between co-rumination and friendship quality. Whether there is a gender by race interaction for co-rumination was also examined. Additionally, demographic information of the participants and descriptive analyses are presented.

Data Collection

The data collection for this study occurred in Columbia, Missouri, between 2007 and 2009 and was conducted by Dr. Amanda Rose. As detailed in Chapter 3, participants completed the following questionnaires: demographics, CRQ, CES-D, and Friendship Quality Questionnaire.

Originally, the participants were recruited using a roster that included adolescents who attended middle school and high school in a local public school district and were randomly selected to invite to participate in the study. Letters describing the study's purpose were sent to a total of 1,771 families. Out of 1,771, 937 families were reached via telephone; of them, 616 families did not wish to participate in the study. The remaining 321 interested adolescents were accepted into the study, but 7 adolescents were excluded from the study because their friend did not meet the requirements of the study (both adolescents did not report being a best or close friend).

Prior to beginning the study, interested adolescents were asked to provide contact information for their best or close friend. The final number for the study was 628 adolescents in 314 friend pairs, including 157 seventh grade dyads (80 girls and 77 boy dyads) and 157 tenth grade dyads (83 girls and 74 boy dyads). However, the sample size for the current study was 569 adolescents because only Black and White adolescents were included in the current analysis. The less than 2% each of American Indian, Pacific Islander, and Asian American participants, 3.7% Latino/a participants, as well as the 5.78% participants that reported more than one race, were excluded from the final study. The final number of adolescent participants for this study totaled 387 White adolescents and 182 Black adolescents who were 13-16 years old. Of the 182 Black adolescents, 124 (68%) participated with a Black friend and 39 (21%) participated with a White friend (the remaining 11% participated with a friend of a race other than Black or White). Of the 387 White adolescents, 326 (84%) participated with a White friend and 39 (10%) participated with a Black friend; the remaining 6% participated with a friend of a race other than Black or White.

Table 1 displays the characteristics of the sample for the 569 participants, including the number and percent of adolescents by sex, race, and grade. The racial breakdown is similar to the community where participants were recruited (Midwest region). As of 2022, there were roughly 8,840 individuals under the age of 18 (Bureau, U. S. C, 2022). At the time data was collected there was roughly, 75% of White adolescents, and 12% of Black adolescents (Bureau USC, 2010).

Table 1
Characteristics of Sample

Characteristic		<i>N</i>	%
Grade	7 th	288	50.6%
	10 th	281	49.4%
Sex	Female	291	51.1%
	Male	278	48.9%
Race	Black	182	32.0%
	White	387	68.0%

For all continuous variables – co-rumination, depression, and positive friendship quality – skewness and kurtosis values were computed to evaluate normality of the data. Skewness values were -.05 for co-rumination, -.82 for positive friendship quality, and 1.44 for depression. Kurtosis values were -.61, .61, and 2.58. Formal statistical tests were not conducted for these values because they are not considered reliable in large samples (e.g., greater than 300; Kim, 2013). With one exception, all skewness and kurtosis values fell in the recommended range of -2 to 2 (Kim, 2013; West et al., 1995). The kurtosis value for depression was somewhat greater than 2. This deviation was considered acceptable, however, given that analyses based on the general linear model are robust to deviations from normality (Blanca Mena et al., 2017).

Table 2 provides the means, ranges, and standard deviations for the study variables. The mean for the co-rumination variable was 2.88 (SD = .85), suggesting the participants co-ruminated on average “a little” with friends. The standard deviation of .85 indicates that the average distance between each data point and the mean was .85 points.

The mean for the friendship quality variable was 2.92 (SD = .69), indicating the participants rated their friendship quality high on average. The standard deviation was .69, indicating that the average distance between each data point and the mean was .69 points. The mean for the depression variable for the sample was 1.57 (SD = .41) indicating that the participants had low levels of depression on average. The standard deviation indicated that the average distance between each data point and the mean was .41 points.

Table 2

Ranges, Minimums, Maximums, Means, and Standard Deviations for Study Variables

Variable	Range	Minimum	Maximum	Mean	Standard Deviation
Co-rumination	4.00	1.00	5.00	2.88	.85
Friendship Quality	3.93	.07	4.00	2.92	.69
Depressive Symptoms	2.40	1.00	3.40	1.57	.41

Table 3 presents the correlations among gender, race, co-rumination, friendship quality, and depression. As the table indicates, gender was negatively and significantly associated with co-rumination, friendship quality, and depression. Because gender was coded 0 for girls and 1 for boys, this meant that girls scored higher than boys on co-rumination, friendship quality, and depression. Race was negatively and significantly associated with depression. Because Black adolescents were coded 0 and White adolescents were coded 1, this meant that Black adolescents reported more depressive symptoms than White adolescents. Finally, co-rumination was significantly and positively associated with depression and friendship quality.

Table 3

Correlations Among Grade, Gender, Race, Co-Rumination, Friendship Quality, and Depression

	1	2	3	4
Gender				
Race	305			
Co-Rumination	-.39**	-.08		
Friendship Quality	-.43**	-.00	.56**	
Depression	-.22**	-.17**	.23**	.08

Notes. * $p < .05$. ** $p < .01$.

Research Questions

In the previous section, the descriptive statistics were provided. In this section, the results from the analyses testing the research questions are described.

RQ1: Do Black and White adolescents differ in how much they co-ruminate as measured by the Co-rumination Questionnaire?

H_{10} : Black and White adolescents do not differ in how much they co-ruminate.

H_{1a} : Black and White adolescents differ in how much they co-ruminate.

An independent samples t -test was performed to examine whether Black and White youth differed in levels of co-rumination. Co-rumination was the dependent variable, and race was the independent variable. The t test did not reach statistical significance, $t(568) = 1.83$, $p = .07$, so the null hypothesis that Black adolescents and White adolescents do differ in how much they engage in co-rumination was not rejected (co-rumination scores; Black adolescents, $M = 2.97$, $SD = .90$; White adolescents, $M = 2.83$, $SD = .92$).

RQ2: Is there an association between co-rumination as measured by the Co-rumination Questionnaire and depressive symptoms as measured by the Center for Epidemiologic Studies–Depression Scale?

H2o: There is not an association between co-rumination and depressive symptoms.

H2a: There is an association between co-rumination and depressive symptoms.

A linear regression analysis was performed to examine the association between co-rumination and depressive symptoms. The overall regression model was statistically significant, $R^2 = 0.53$, $F(1, 567) = 32.04$, $p < .001$. Co-rumination was a significant positive predictor of depression, $\beta = .48$. The $R^2 = .05$ indicates that co-rumination accounted for 5% of the variance in adolescents' depression scores. The null hypothesis that co-rumination is not associated with depression was rejected.

RQ3: Does race moderate the association between co-rumination as measured by the Co-rumination Questionnaire and depressive symptoms as measured by the Center for Epidemiologic Studies–Depression Scale?

H3o: Race does not moderate the association between co-rumination and depressive symptoms.

H3a: Race does moderate the association between co-rumination and depressive symptoms.

For Research Question 3, a regression analysis was conducted in which depression was predicted from co-rumination, race, and the Co-rumination X Race interaction. The overall model was significant $R^2 = 0.77$, $F(3, 565) = 15.68$, $p < .001$.

Standardized betas, t values, and p values for the individual predictors are presented in Table 4. As presented in the table, only co-rumination was a significant predictor of depression. Because race did not significantly moderate the association between co-rumination and depressive symptoms, the null hypothesis was not rejected.

Table 4

Co-Rumination, Race, and the Interaction Between Co-rumination and Race as Predictors of Depression

Predictor	β	t value	p value
Co-rumination	.22	3.30	.001
Race	.14	1.02	.31
Co-Rumination X Race	-.01	.07	.95

RQ4: Is there an association between co-rumination as measured by the Co-Rumination Questionnaire and friendship quality as measured by the Friendship Quality Questionnaire?

H4o: There is not an association between co-rumination and friendship quality.

H4a: There is an association between co-rumination and friendship quality.

A linear regression analysis was performed to examine the association between co-rumination and friendship quality. The overall regression model was statistically significant, $R^2 = 0.55$, $F(1, 567) = 252.24$, $p < .001$. Co-rumination was a significant positive predictor of friendship quality, $\beta = .69$. The $R^2 = .31$ indicated that co-rumination accounted for 31% of the variance in adolescents' friendship quality scores. The null hypothesis that there is not an association between co-rumination and friendship quality was rejected.

RQ5: Does race moderate the association between co-rumination as measured by the Co-Rumination Questionnaire and friendship quality as measured by the Friendship Quality Questionnaire?

H5o: Race does not moderate the association between co-rumination and friendship quality.

H5a: Race does moderate the association between co-rumination and friendship quality.

A multiple linear regression analysis was performed to examine whether race moderates the strength of the association between co-rumination and friendship quality. Specifically, friendship quality was predicted from co-rumination, race, and the interaction between co-rumination and race. The overall model was significant $R^2 = 0.31$, $F(3, 565) = 84.36$, $p < .001$. Standardized betas, t values, and p values for the individual predictors are presented in Table 5. None of the predictors were significant and because race did not significantly moderate the association between co-rumination and depressive symptoms, the null hypothesis was not rejected.

Table 5

Summary of Regression Analysis Predicting Friendship Quality from Co-Rumination, Race, and Their Interaction

Predictor	β	t value	p value
Co-rumination	.56	9.55	.001
Race	.04	.36	.72
Co-Rumination X Race	-.01	.04	.97

The overall regression was statistically significant, $R^2 = 0.31$, $F(3, 565) = 84.36$, $p < .001$). However, the main effect of race was not significant, and race did not

significantly moderate the association between co-rumination and friendship quality ($\beta = .06, p = 0.72$). Therefore, the null hypothesis was not rejected.

RQ6: Is there a Gender X Race interaction for co-rumination (assessed with the Co-Rumination Questionnaire) such that the size of the gender effect for White adolescents differs from the size of the gender effect for Black adolescents?

H6o: There is not a Gender X Race interaction.

H6a: There is a Gender X Race interaction.

An ANOVA was performed to test the Gender X Race interaction for co-rumination. Co-rumination was the dependent variable, and gender, race, and their interaction were independent variables. The overall model was significant, $F(1, 565) = 21.64, p < .001$. The effect of gender was also significant, $F(1, 565) = 79.81, p < .001$, with girls ($M = 3.2, SD = .75$) scoring higher than boys ($M = 2.54; SD = .82$). However, the effect of race was not significant, $F(1, 565) = 2.18, p = .14$, and the Gender X Race interaction was not significant, $F(1, 565) = 1.35, p = .25$. Therefore, the null hypothesis that the combination of race and gender is not significantly related to co-rumination was not rejected.

Summary

This study involved analyzing a dataset collected from 2007-2009 by Dr. Amanda Rose. Participants were asked for demographic information and completed questionnaires (CRQ, CES-D, and Friendship Quality Questionnaire). In terms of the co-rumination scores, there was no statistical significance in differences of co-rumination between Black adolescents and White adolescents. The associations of co-rumination with

friendship quality and depressive symptoms were statistically significant. However, race did not significantly moderate the associations of co-rumination with friendship quality or depressive symptoms.

In the following chapter, Chapter 5, comparisons of current findings and that of previous research will be discussed. Study limitations will be discussed and recommendations for future research will be provided. Lastly, I will present implications for positive social change.

Chapter 5: Discussion, Conclusions and Recommendations

The purpose of this quantitative study was to examine differences between Black and White adolescents' tendency to engage in co-rumination, and in the associations of co-rumination with friendship quality and depressive symptoms. Gender difference in co-rumination and whether gender differences vary by adolescent race were examined in the current study. To address the research questions, the specific research design was a nonexperimental correlational design involving survey data assessing depressive symptoms, co-rumination, and friendship quality. Findings indicated statistical significance between co-rumination and depressive symptoms, as well as co-rumination and friendship quality, but the effect of race was not significant on its impact on the association between co-rumination and friendship quality, nor on co-rumination and depressive symptoms. An additional finding within the research study was that race did not have a significant effect on co-rumination differences amongst gender. Results and findings of the associations with previous literature are discussed in detail below.

Interpretation of Findings

The first research question examined whether Black and White adolescents differ in how much they engage in co-rumination. The *t* test did not reach statistical significance, and Black adolescents and White adolescents did not differ in how much they engage in co-rumination. These study findings were similar to those of Lentz et al., (2016), who examined race differences in co-rumination and found similar mean levels of co-rumination among Black and White adolescents in the 9th and 12th grades. There are two explanations for this nonsignificant finding. Comparable to Lentz et al. (2016), there

were far less Black participants in this study in comparison to White participants, which could have also influenced the findings. The lack of representation of black participants in the study can lead to reduced statistical power, and as a result, the study may not have enough statistical strength to detect meaningful differences among black participants. Secondly, research has suggested that Black families will often provide support to their adolescent aged children whether emotional or instrumental, to assist them in coping with the stressors of daily life, which is consistent with the Africentric theory (Cross et al., 2018). It should be considered that despite Black adolescents engaging differently than White adolescents in their family systems, it does not create a difference in co-rumination engagement in comparison to White adolescents (Lincoln et al., 2005).

The second research question examined the association between co-rumination and depressive symptoms. As hypothesized and as found in previous research, higher levels of co-rumination are associated with higher rates of internalizing problems (Piraman et al., 2016; Schwartz-Mette & Smith, 2018). The significant association between co-rumination and depressive symptoms could have occurred due to the persistent negative focus that occurs during co-rumination engagement, which can be considered problematic and can lead to a depressed mood (Piraman et al., 2016). Additionally, adolescents are more likely to burden themselves with their friend's distress when talking about problems, which also leads to internalizing symptoms (Schwartz-Mette & Smith, 2018). It should be noted that due to the time period (2002-2018) most of the cited research within the study was conducted, additional research should be conducted in order to build better theories on more recent findings than may exist within

this decade. Findings by Ohannessian et al. (2021) concluded that social media usage amongst adolescents influenced co-rumination engagement, which also predicted an increased rate of internalizing symptoms.

The third research question examined whether race moderated the association between co-rumination and depressive symptoms. The study's findings determined that race did not significantly moderate the association between co-rumination and depressive symptoms. According to Cohen (2004), the stress buffering model suggests that as adolescents receive social support from social relationships, they are protected against detrimental mental health symptoms. It should be considered that the lack of significance within the study could have occurred due to the similarities of social support that exist in both Black and White populations, which could provide an explanation for the co-rumination and depressive symptom association similarities found in the results. However, social support does work differently for Black and White adolescents, such as White female adolescents experience higher decreases in self-depreciation in comparison to Black female adolescents that experience familial social support (Adams, 2010). Although the operational difference in social support does exist, peer and family social support for both Black and White adolescents contribute to a successful transition throughout the adolescent period (Adams, 2010).

The fourth research question examined the association between co-rumination and friendship quality. As hypothesized, and comparable to Felton's findings (2019), co-rumination is positively associated with friendship quality. Co-rumination and friendship quality could have a significant association due to the overlap of self-disclosure and

social support, which allow for individuals to develop closeness with others (Rose et al., 2014; Phillips et al., 2009). Additionally, previous research has indicated that when friends co-ruminate, they respond to one another in supportive ways, which is likely to contribute to positive friendship quality (Rose et al., 2014).

The fifth research question examined whether race moderated the association between co-rumination and friendship quality. Previous research findings suggest that Black adolescents that value collectivistic values have a willingness to share challenges with close friends (Lentz et al., 2016). Due to this finding, it can be conjectured that as a result of this willingness, Black adolescents would experience a higher engagement of co-rumination and higher friendship quality. However, the study's findings concluded that race did not significantly moderate the association between co-rumination and friendship quality. Significance could have been lacking due to the possibility that most friendship dyads observed during this study were from same-race friendships, which could have created similar results for Black and White adolescents. Of the 182 Black adolescents, 124 (68%) participated with a Black friend; of the 387 White adolescents, 326 (84%) participated with a White friend. The absence of significance could suggest that the race of the participant did not matter in comparison to the races of both friends within the dyad in the context of examining differences in the association between friendship quality and co-rumination engagement. Rude and Herda (2010) suggests that same-race friendships, in comparison to interracial friendships, are more stable, and individuals within these friendships experience more closeness and intimacy as compared to individuals in interracial friendships. The findings in the Rude and Herda (2010)

research could suggest that same-race friends may co-ruminate more than interracial friends due to their reported higher levels of closeness and; of the friendship dyads within this study were same-race friendships, it would be suspected that each dyad would produce the same result. Whether or not the results would have been the same if a best friend paired with the same race friend versus a different race best friend should be considered for future research, but the role of friend's race was beyond the scope of this study.

The final research question examined whether the combination of race and gender impact co-rumination engagement. The interaction between race and gender did not significantly impact co-rumination engagement. It should be considered that the lack of significance occurred because societal gender roles may be more impactful as they relate to co-rumination engagement than an individual's race. Societal gender roles suggest that girls tend to utilize communication more to build relationships, whereas boys tend to establish dominance; this could also contribute to the higher engagement of co-rumination amongst girls (Merchant, 2012). Although, differences occur in reported levels of self-disclosure and levels of closeness among Black and White adolescent friendships, these differences may not be impactful enough to see a significant difference in co-rumination engagement (Pagano & Hirsch, 2007). Due to these findings, it can be conjectured that gender roles in the absence of the race variable may bring forth more statistical significance as relates to co-rumination engagement amongst adolescents.

Theoretical Frameworks

Response Style Theory

One of the key theories this study was grounded in was the response style theory by Nolen-Hoeksema. The response style theory suggests that ruminative response styles, which involve repeatedly focusing on negative emotions and stressful life events, lead to increased risk of depression (Pössel, 2011). Although co-rumination is an extension of a ruminative response style, co-rumination is unlike rumination in that it is social and between people (Rose, 2002). Findings in this study, mirrored the response style theory's foundation in concluding that persistent focus on negative emotions, as found in co-rumination engagement, significantly impacts depressive symptoms.

Africentric Theory

The second theory that served as the foundation for this study was Africentric theory, which suggests that African Americans who maintain Africentric thought value the notions of collectivism, kinship bonds, spiritualism, role flexibility, social support, and developing close relationships (Mosley-Howard & Evans, 2000). Although there were no statistically significant differences in co-rumination engagement between Black adolescents and White adolescents, the findings can suggest that Africentric thought can still lead to co-rumination engagement, but not to the extent where co-rumination engagement varies by race.

Limitations of the Study

There were some limitations in the study. Most notably was that the dataset was collected by Dr. Rose between 2007-2009, approximately 15 years ago. Due to the date

of the data collection, generalizability could be difficult for present-day adolescents.

Utilizing older data within this study has provided foundational insights; however it also provided time specific context (Polit et al., 2010). Factors like technological advancements, societal norm changes, and methodological advancement may not hold the same relevance in 2023 as when the data were first retrieved in 2007. To address the concern of generalizability and determine whether results remain consistent, future researchers could collect data again and evaluate if the results are replicated. A second limitation of this study was the use of archival data, which meant I was not present to document consent, confidentiality procedures, or other contributing aspects of the research collection process. Another third limitation is the absence of further examination of the friend's race as a participant in the study and the role it has on co-rumination engagement. Although, the structure of the friendship dyad was known (same-race friendship versus cross-race friendship dyads), the exploration of co-rumination engagement of friends of different racial backgrounds could have yielded results that differ from friends from the same racial background.

The fourth limitation is the grade level differences of the participants. Due to the significant age difference between 7th and 10th graders, it can be assumed that social engagement differences may occur that could effect co-rumination engagement. For example, previous research concluded that adolescents between 12 and 13 years old (the typical age of a 7th grader within the U.S.) were more influenced by their peers than adolescents; whereas, adolescents that are 15 years old (the typical age of 10th grader within the U.S.) experience an equal influence from peers and adults (Foulkes et al.

2018). Moreover, including participants from different age and grade levels introduces a potential limitation, as they may reside in distinct developmental stages regarding their comprehension of friendship. For example, in Selman's five stages of friendship development (1981), adolescents between the ages of 12 and 13 years old could be at the Fair-Weather cooperation stage, which includes friendships based on common interests, or at the Intimate Mutual sharing stage, which includes friendships experiencing deeper levels of intimacy. However, it should also be noted that the Intimate and Mutual sharing stage can last up to 15 years old, whereas some adolescents that are 12 and older could be at the Autonomous Interdependence stage, which consists of appreciating the differences between themselves and their friends (Selman, 1981). Differences in social engagement and comprehension of friendship can account for differences in co-rumination engagement, which should be considered for future research studies.

The fifth limitation is a lack of understanding regarding the impact of the COVID-19 pandemic and present-day racism on adolescent relationships, friendship quality, and depressive symptoms. Research has confirmed that Black youth have experienced higher rates of suicide, anxiety, and depression than White counterparts as of 2021 after years of dramatically lower rates (CNBC, 2022). The history of dehumanization, police brutality, and present-day racism compiled with the trauma of COVID-19 within the Black community has contributed to elevated negative mental and emotional health amongst Black youth (MHANational, 2021). Without replicating the study to factor in the impact of COVID-19 and present-day racism, results may not be generalizable to present-day adolescents.

Recommendations

In the current study, no significant racial differences were found between Black and White adolescents in co-rumination; Black adolescents co-ruminated the same amount as White Adolescents. However, future research should examine the influence of the COVID-19 pandemic and present-day racism has on co-rumination engagement, as well as the exploration of patterns of problem talk frequently within racial groups. The utilization of a qualitative design could assist in better observing themes found in adolescent friends' discussion of problems. An additional recommendation that should be considered is the increased use of social media for the purpose of communication and its influence on friendship dynamic and co-rumination engagement.

Snethen and Zook (2016) mention that social media provides individuals with ample opportunities including receiving support from their communities, developing relationships, interacting with groups with similar interests, and exploring available resources in their community. Community participation patterns, which are similar to the patterns found on social media platforms, are important especially as adolescents transition into adulthood because it influences engagement across their lifespan (Snethen & Zook, 2016). During the pandemic, youth had fewer opportunities to connect to peers in person, creating more opportunities for adolescents to build connections with peers over digital mediums. Exploring whether co-rumination engagement deviates for in-person versus digital mediums should be examined.

Future research could also investigate the current research questions in a broader population. The broader population could include more diverse racial/ethnic samples that

include individuals from Latinx and Native American populations. Additionally, it is now known that gender is not a dichotomous variable, but rather that there are multiple gender identities (Joel et.al, 2014). Including multiple gender identities could provide insight about the effects of co-rumination engagement in comparison to the White racial/ethnic group.

Finally, the role of the pandemic and present-day racism could be examined. According to Ehrenfeld and Harris (2020), due to the pandemic and spotlight of police violence against Black people, Black adolescents are more at risk for depression, anxiety, and stress and have suffered disproportionately due to higher death rates and hospitalization rates. Whether support increased or decreased due to both events should be examined. Racial differences in these effects should also be examined.

Implications

The present study revealed that co-rumination is associated with friendship quality and depressive symptoms; however, the main effect of race was not significant and did not significantly moderate the association between co-rumination, friendship quality, and depressive symptoms. These findings could serve as a basis for understanding how to tailor intervention and mental health programming efforts in ways that assist school administrators, teachers, counselors, and therapists in teaching adolescents' strategies for self-care and coping skills. Those skills can serve as protective factors against depressive symptoms that increase through co-rumination engagement. Interventions focused on friendship quality would be especially relevant for adolescents between the ages of 12 and 13 years old, as they may be between the previously

mentioned Selman friendship stages, fair weather cooperation stage and intimate mutual stage, and could need assistance navigating how to build stronger friendships that yield high friendship quality as they navigate through the stages (Selman, 1981). For older adolescents that may be on the last Selman friendship stage, Autonomous Interdependence, they would benefit from interventions focused on coping with depressive symptoms as they may experience challenges in accepting that differences exist between themselves and their peers (Selman, 1981).

Additionally, the social competence and social influence interventions can assist youth in resisting peer pressure, teaching cognitive skills to manage anxiety and stress, as well as teaching self-management for personal and social skills (Faggiano, et al, 2014). Resilience-focused interventions would also be effective for adolescents as research has concluded resilience-focused interventions significantly decrease depressive symptoms, anxiety and psychological distress (Dray et al., 2015). Overall, the interventions recommended could assist youth on strategies to increase positive interactions, which can contribute to positive self-worth, self-esteem, and overall great socio-emotional and mental health.

Additionally, positive social change implications are evident in this study. As previously discussed, the findings can assist on an individual level with the development of intervention and prevention efforts for adolescents. In the education system, a series of mental health programs that directly target the costs (depressive symptoms) and benefits (higher friendship quality) of co-rumination engagement and how to navigate through either outcome could be implemented during school hours and in after school

programming; this could build a two-pronged approach that would be highly influential in creating a support system for adolescents. Developing during-school-hours programming related to co-rumination engagement and its impact on well-being and friendship quality could help with the development of effective coping strategies for adolescents. Programming could consist of sessions spent deciphering what makes a good friend, managing conflicts in friendships, accepting differences between yourself and friends, and emotional regulations. Creating afterschool programming for the entire family system could provide an opportunity for parents to learn how to navigate the adolescent stage through a parental lens, as well as learning how they can continue to emotionally support their adolescent children despite their children beginning to emotionally separate and begin developing stronger friendships with their peers (Christie & Viner, 2005). Prevention and intervention programming are a necessity in community systems as adolescents continue to face determinantal socio-emotional and mental health concerns (Domitrovich, et al, 2010). Adolescents with greater social and emotional adjustment are more likely to adjust well in adulthood, which could contribute to greater productivity in their communities, schools, and workplaces (Pettit et al, 2011).

Conclusion

This study built on existing literature on co-rumination, friendship quality, and depressive symptoms by demonstrating that the association between co-rumination, friendship quality, and depressive symptoms are significantly positively related, but race is not a significant moderating factor for co-rumination engagement. The results also illuminated the importance of considering racial, sex, and grade-related differences in

associations between co-rumination, friendship quality and depressive symptoms.

Although, differences of co-rumination engagement between Black adolescents and White adolescents did not differ, educating adolescents about the role of friendship quality and depressive symptoms regarding co-rumination engagement could be valuable. Providing educational opportunities for adolescents could encourage positive social change by helping adolescents understand the importance of positively navigating friendships and coping with depressive symptoms. Giving adolescents the opportunity to achieve greater mental and emotional adjustment provides them with tools for success that could help to better manage stressors as they arise, which would not only be beneficial for their friendships and familial relationships, but also for society.

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Appendix A: Parental Consent

We are inviting your child and his/her friend to participate in a research project, “Interactions Among Friends in Childhood and Adolescence: An Observational Assessment” that my research team and I are conducting with the support and approval of the Department of Psychological Sciences at the University of Missouri. The purpose of this research is to learn how friends’ interactions with one another, especially in terms of friends providing support to one another, relate to how they feel about themselves and about the relationship. One of our goals in conducting this research is to learn more about how to promote children's social and emotional adjustment.

Your child’s participation would involve a visit to our laboratory and involve him or her recording daily social interactions for a period of one week. In addition, nine months after visiting the laboratory, your child will complete a packet of questionnaires (either in person at our laboratory or another location or we could send the questionnaires through the mail).

In terms of the visit to our laboratory, your child’s participation would involve our videotaping your child interacting with his/her friend. We will be asking the friends to work on a structured task, such as a puzzle, together, to talk about problems they have been upset about recently, to talk about fun things to do with other kids their age, and to just talk about whatever they want to talk about. This will take about 30 minutes. We will be observing their interaction on a television monitor in an adjacent room. If either of the friends becomes visibly upset about the problem being discussed or if the friends engage in a conflict with one another to the degree to which we become concerned, we will end the interaction immediately. Also at the lab, your child would complete questionnaires. The questionnaires include questions about interpersonal styles, including with friends and parents. For example, participants will be asked whether and how they talk about problems with their friends and how they and their friends support one another. They will also be asked about how they feel about themselves, including whether they feel anxious, whether they enjoy spending time with other people their age, whether they generally feel happy or more depressed, and whether different life events have happened to them. They will also be asked what their friendship is like and how satisfied they are with the friendship.

This part of the session **will last about two hours**. In terms of your child recording daily activities, his or her participation would involve recording every social interaction that is at least five minutes long. Your child will also be asked to record every interaction that is shorter than five minutes if a problem of any sort was discussed. For each interaction, questions will be asked about who was in the interaction, what they were doing, and how they felt during the interaction. These social interactions would be recorded for a one-week period. The questionnaires your child will complete nine months after the laboratory visit will be similar to the questionnaires that they completed at the laboratory visit. Completing these questionnaires **will take about two hours**. It is possible that talking about a problem with a friend in the laboratory assessment or thinking about themselves and their relationships as a result of completing the

questionnaires or of recording daily interactions could make some children feel discomfort or distress. In similar projects in the past, however, children have generally reported enjoying participating in the research.

We want you to know that your child will be told that he/she may choose not to participate and may stop participating anytime. Your child may also choose to participate but to end the videotaped interaction early or to skip questions on the questionnaire. Also, information from your child is confidential. The videotapes, questionnaires, and records of daily interactions will be kept in our laboratory for at least five years after the research project is completed, after which they may be destroyed or they may continue to be kept in our lab. Only members of my research team will have access to the videotapes and questionnaires. The only exception is in the unlikely event that the information about your child indicates that he or she is experiencing a severe degree of psychopathology (e.g., depression) or if child abuse is detected.

If we were concerned that a child were suffering from depression or another problem, we would talk with that child's parent about resources available to help the child. If we were concerned about child abuse, we would alert the appropriate authorities. In addition, we may have the opportunity to show portions of the videotapes to scientific, educational, or media audiences. You may give your child permission to participate in the study, however, without granting permission for videotapes to be shown to these audiences. Also, we may want to contact you and your child in the future to invite your child to participate in a research project. If you would prefer that we not contact you in the future, though, we will not contact you again.

To thank your child for participating in the laboratory visit and for recording social interactions for one week, we will be giving your child _____ (*inducement will range from \$40 to \$80 depending on funds available*). To thank your child for completing the questionnaires nine months after the laboratory visit and mailing them back to us, we will give your child ____ (*inducement will range from \$20 to \$50 depending on funds available*). If your child chooses to stop participating in the project before completing the project, your child will be given a portion of what he or she would be given for participating in the entire project that is comparable to the proportion of the project that he or she completed.

Signing below gives your child permission to participate in this research. Your child will not be able to participate without a signed permission slip. If you have any questions about this research, please do not hesitate to contact me at [REDACTED]. For more information regarding human participation in research, please contact the UMC Campus IRB Office at [REDACTED].

Sincerely,

Amanda J. Rose
Associate Professor of Psychological Sciences

I have read and understand the information about this study, I have had an opportunity to ask questions about this research, and I do give permission for _____ to participate in this research.

(signature of parent or guardian)

(date)

I give permission for portions of the videotape of _____ to be shown to scientific, educational, and media audiences.

(signature of parent or guardian)

(date)

I give permission for the researchers to contact my family in the future to invite _____ to participate in a research project.

(signature of parent or guardian)

(date)

I give permission for portions of the videotape of _____ to be shown to scientific, educational, and media audiences.

(signature of parent or guardian)

(date)

I give permission for the researchers to contact my family in the future to invite _____ to participate in a research project.

(signature of parent or guardian)

(date)

Appendix B: Youth Assent

Research Project

I have the chance to be part of a research project. It is called, "Interactions Among Friends in Childhood and Adolescence: An Observational Assessment." Dr. Amanda Rose is doing this project with the Department of Psychological Sciences at the University of Missouri. They want to learn how friends act with one another. They also want to know how friends make one another feel better when one has a problem. They want to learn how the friends feel about themselves and their friendship. Their goal is to learn how to help children and teenagers have good relationships and feel good about themselves.

I know that I will visit a laboratory. I know I will write down what I do with other people for one week. I know that nine months after I visit the laboratory I will complete questionnaires (in person, such as at the laboratory, or the researchers will send the questionnaires to me through the mail).

When I visit the laboratory, I know that the researchers will videotape me and my friend.

While they videotape us, we will:

- work on a project together, like a puzzle
- talk about problems we have had recently
- talk about fun things to do with other kids our age
- just talk about whatever we want to talk about

This will take about 30 minutes. I know that the researchers will have us stop talking and stop videotaping us if they are worried because my friend or I look upset. I know they also will have us stop talking and stop videotaping us if we get into a fight or argument.

When I visit the laboratory, I know that I will answer questionnaires. I will answer questions about:

- the way I usually act with other people my age (for example, how I talk about problems with my friends and how my friends and I support one another)

- how I feel about myself (for example, whether I feel anxious, whether I enjoy spending time with other people my age, and whether I generally feel happy or more depressed)
- what my friendship is like and how happy I am with my friendship

This will take about two hours.

For the other part, I will write down all of the times that I do things with other people. I will write down what we did if we are together for at least five minutes. If we talk about a problem, I will also write down what we did even if we were together for less than five minutes. When I write about being with someone, I will write down who I was with, what we were doing, and how I felt. I will write these things down for one week.

Nine months later I will answer more questionnaires. These questionnaires will be a lot like the ones I completed during my laboratory visit. Answering these questionnaires will take about an hour.

I know that talking about a problem with my friend could make me feel uncomfortable or sad. I also know that thinking about myself and my relationships could make me feel uncomfortable or sad.

I know that I can choose not to be in the study. I know that I can stop being in the study anytime. I can also stop being videotaped anytime I want to. I know that I can skip any questions on the questionnaires that I want to. I also know that my answers are confidential. This means that only the researchers will see the videotapes and questionnaires. The only time this is not true is if what I say or how I answer the questions make the researchers think that I am very sad or have some other serious problem or if they are worried that a parent or another adult has done something to hurt me. If they are worried that I am very sad or have some other serious problem, they would talk with my parent. They would tell my parent about other adults who might be able to help. If they were worried that someone was hurting me, they would talk to my parent about it and would tell other adults who could help me.

I know that the researchers may want to show my videotapes to other people. I know that I can say that I do not want the videotapes to be shown to people other than the researchers.

I know that the researchers may want to call me or send me a letter to see if I want to be in another research project. I know that they will not call or send me a letter if I ask them not to.

I know that I need to have a permission slip signed by my parent in order to be in this research project.

I know that I will receive _____ (*inducement will range from \$40 to \$80 depending on funds available*) after visiting the laboratory and writing down the things I do with other people for a week. I know that I will receive _____ (*inducement will range from \$20 to \$50 depending on funds available*) after answering the questionnaires that I get in the mail and mailing them back. I know that if I decide to stop being in the project after doing only part of the project, I will receive part of the money that I would have gotten if I completed the whole project. If I have any questions, I know that I can call Amanda Rose at [REDACTED]. If I have any other questions about people participating in research at the University, I can contact the UMC Campus IRB Office at [REDACTED]

I have read and understand this information about this study. I have had the chance to ask questions about this study. I do want to participate in this research.

(my name printed)

(date)

(my signature)

I give permission for the videotape of me to be shown to scientific, educational, and media audiences.

(my name printed)

(date)

(my signature)



I give permission for the researchers to contact my family in the future to ask me to be in study again.

(my name printed)

(date)

(my signature)

Appendix C: CITI Training through the University of Missouri



Completion Date 28-May-2022
Expiration Date N/A
Record ID 49198436

This is to certify that:

Andrea Gourdine


Has completed the following CITI Program course:

Student's
(Curriculum Group)
Doctoral Student Researchers
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Walden University

Not valid for renewal of certification through CME.



Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w9579cd68-68ba-4280-9f23-8bbbb4c5aea8-49198436

Appendix G: IRB Approval Letter



Institutional Review Board
University of Missouri-Columbia
 FWA Number: 00002876
 IRB Registration Numbers: 00000731, 00009014

310 Jesse Hall
 Columbia, MO 65211
 573-882-3181
 irb@missouri.edu

January 21, 2022

Principal Investigator: Amanda J Rose, PhD
 Department: Psychological Sciences

Your Annual Update to project entitled Interactions Among Friends in Childhood and Adolescence: An Observational Assessment was reviewed and approved by the MU Institutional Review Board according to the terms and conditions described below:

IRB Project Number	00-05-313
IRB Review Number	367560
Funding Source	National Institute of Mental Health (NIMH)(NIH)(PHS) National Institutes of Health Research Council Grant
Initial Application Approval Date	July 20, 2000
Approval Date	January 21, 2022
IRB Expiration Date	March 21, 2023
Level of Review	Administrative
Application Status	Approved
Project Status	Closed - Data Analysis Only
Risk Level	Minimal Risk
Type of Consent	Child Assent - Written Parental Consent (One Parent)

The principal investigator (PI) is responsible for all aspects and conduct of this study. The PI must comply with the following conditions of the approval:

- No subjects may be involved in any study procedure prior to the IRB approval date or after the expiration date.
- All unanticipated problems must be reported to the IRB on the Event Report within 5 business days of becoming aware of the problem. Unanticipated problems are defined as events that are unexpected, related or possibly related to the research, and suggests the research places subjects or others at a greater risk of harm than was previously known or recognized. If the unanticipated problem was a death, this is reportable to the IRB within 24 hours on the Death Report.
- On-site deaths that are not unanticipated problems must be reported within 5 days of awareness on the Death Report, unless the study is such that you have no way of knowing a death has occurred, or an individual dies more than 30 days after s/he has stopped or completed all study procedures/ interventions and required follow-up.
- Major noncompliance must be reported to the MU IRB on the Event Report within 5 business days of the research team becoming aware of the deviation. Major noncompliance are deviations resulting from investigators' failure to comply with the IRB approved protocol when these

deviations caused harm or have the potential to cause harm to research subjects or others, and may have affected subject's rights, safety, and/or welfare. It also includes subjects' failure to comply with the protocol when these deviations caused harm. Minor noncompliance include deviations that had no harm to a research subject or others. Minor noncompliance should be reported at the time of continuing review. Please refer to the MU IRB Noncompliance policy for additional details.

- All changes must be IRB approved prior to implementation unless they are intended to reduce immediate risk. All changes must be submitted on the Amendment Form.
 - All recruitment materials and methods must be approved by the IRB prior to being used.
 - The project-generated annual report must be submitted to the IRB for review and approval at least 30 days prior to the project expiration date. If the study is complete, the Completion/Withdrawal Form may be submitted in lieu of the annual report.
 - Securely maintain all research records for a period of seven years from the project completion date or longer depending on the sponsor's record keeping requirements.
 - Utilize the IRB stamped consent documents and other approved research documents located within the document storage section of eCompliance. These documents are highlighted green.
- If you have any questions, please contact the IRB Office at 573-882-3181 or muresearchirb@missouri.edu.

Thank you,
MU Institutional Review Board