

**THE RELATIONSHIP BETWEEN COPING AND ANXIETY DURING
ADOLESCENCE: THE IMPORTANCE OF CONSIDERING RACE/ETHNICITY
AND GENDER**

by

Alyson Cavanaugh

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Alyson Cavanaugh

Approved: _____
Christine McCauley Ohannessian, Ph.D.
Professor in charge of thesis on behalf of the Advisory Committee

Approved: _____
Rob Palkovitz, Ph.D.
Committee member from the Department of Human Development and
Family Studies

Approved: _____
Jill Neitzel, Ph.D.
Committee member from the Board of Senior Thesis Readers

Approved: _____
Alan Fox, Ph.D.
Director, University Honors Program

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ABSTRACT

The purpose of this study was to capture group differences in successful and unsuccessful adolescent adjustment by utilizing the framework of developmental psychopathology. The sample was drawn from the larger study, the University of Delaware's Adolescent Adjustment Project. The participants include 1,001 adolescent (mean age= 16.09) boys ($n=470$, 47%) and girls ($n=531$, 53%) drawn from 7 public high schools in the Mid Atlantic Region. Students identified as Caucasian (58%), African American (23%), Hispanic (12%), Asian (2%), and the remaining 5% of students identified as other. Results indicated that girls have significantly higher levels of anxiety than boys; anxiety did not differ by race. Coping choice also differed, in which girls were more likely to use religious coping and venting of emotions than boys. African American youth were more likely to use religious coping and denial than other racial groups. Cross-sectional correlations indicated that venting of emotions and/or use of denial was associated with higher levels of anxiety across gender and race. Longitudinal results indicated that, for girls, venting of emotions and denial predicted higher levels of anxiety, whereas humor predicted lower levels of anxiety. Similarly, for Caucasian youth, venting of emotions and denial positively predicted anxiety, whereas, humor and religious coping negatively predicted anxiety one year later. For Hispanic youth, venting of emotions also predicted higher anxiety. Overall, these findings have important implications for prevention and intervention programs to help youth successfully cope with anxiety.

Keywords: Adolescence, Anxiety, Coping Strategies, Gender Differences, Race Differences, Developmental Psychopathology

Chapter 1

INTRODUCTION

Adolescence is characterized by a vast array of developmental changes, along with new stressors. Ohannessian, Lerner, Lerner and von Eye (1998) describe a variety of changes that occur both within the adolescent self (pubertal development, maturation of cognitive development) and within his/her ecological context (e.g. family, work, peer relationships), as well as, normal transitions (e.g. school, entering workforce). The increased demands placed on adolescents during this time intensifies the need for the development of coping resources to adequately deal with new stressors. Furthermore, the development of coping strategies in adolescence is viewed as an important developmental process in determining both short and long term outcomes related to how adolescents continue to cope in adulthood (Ireland, Boustead & Ireland, 2005). The purpose of the current study was to capture this developmental process involved in successful and unsuccessful adolescent adjustment by examining the relationship between specific coping strategies and overall anxiety in adolescents across gender and race.

Coping is generally regarded as a targeted aspect of development, particularly during transitional times. Cicchetti and Rogosch (2002) apply a developmental psychopathology approach to adolescence by conceptualizing the targeted aspect of development relative to the capacities and abilities of the overall period of adolescent development. This paper will use a similar framework by referring to the core principles of developmental psychopathology identified by Masten (2006) in order to understand

how adolescents' coping choices and perceived resources affect their level of anxiety over time. Masten (2006) defines developmental psychopathology as "the study of behavioral health and adaptation in a developmental context" (p. 47). Developmental psychopathologists describe their field as an integrative framework with a multidisciplinary perspective, rather than a singular theory, classification system or medical model (Masten, 2006). Similarly, this paper will use a strengths based approach framed by developmental psychopathology that helps encapsulate gender and ethnic differences in relation to both protective and risk factors. In contrast, traditionally researchers have given more attention to the deficit or medical model.

To date, the influence of ethnicity has been relatively ignored in the stress and coping literature. Within the studies that have examined the influence of ethnicity on coping and stress, by virtue of their majority status, Caucasian youth have been used as the "norm," by which members of ethnic minority groups are compared (Aldridge & Roesch, 2008). Consequently, youth from minority groups have been overrepresented in stress and self-esteem literature as at-risk for deviance and problem behavior (Spencer & Tinsely, 2008). On the other hand, the field of psychological research has recognized the need to become more progressive and diversified. Governmental agencies, such as NIMH have required that all racial/ethnic groups be included in studies (Spencer & Tinsely, 2008). Hence, current research studies are beginning to use a more culturally appropriate design.

Researchers must also take into account the effects of sub-group differences (e.g. gender, ethnicity, culture) to understand which coping strategies emerge as possible protective factors as defined by cultural standards of anxiety. Taking a more positive view of adolescent coping may be more helpful in finding strengths and competencies within adolescents typically termed "at-risk," rather than viewing different experiences as

deficiencies in the cultural model. Conceptualization of coping styles and anxiety within different sub-populations (e.g. gender, ethnicity, at-risk families, etc) will enable researchers to more adequately understand the relationship between differential coping choice and anxiety. Furthermore, there is a need to develop a normative model of coping for the underrepresented and minority adolescent groups (Aldridge & Roesch, 2008). From here, I will turn to framing literature within developmental psychopathology that conceptualizes the period of adolescence, supports the application of normative and mutually informative principles, and offers findings on gender and ethnic based differences in relation to anxiety and coping strategies. Overall, I am framing this literature in order to provide analysis, as well as to illuminate the limitations of previous research.

Conceptualization of Adolescence

Conceptually, the period of adolescence has been divided into three different developmental periods, known as early adolescence (ages 10-13), middle adolescence (ages 14-17), and late adolescence (18 through early twenties) (Smetana, Campione-Barr & Metzger, 2006). The conceptualization of adolescence as a unique period across different points in time is important for identifying within group differences, as well as, examining risk factors before the onset of a disorder. Thus, developmental psychopathology is an important perspective for approaching development through the period of adolescence, particularly in regard to understanding prevention and treatment of the causes, problems and consequences associated with deviant and non-normative developmental pathways (Masten, 2006).

Accordingly, Steinberg and Morris (2001) state that adolescent development includes much variability due to the complexity of socialization processes that occurs

within a cycle of interactions among genetic, familial and non-familial influences. Hence, with the inclusion of varying contexts and groups, the developmental psychopathology concept, multi-potential, can be used to understand the variation of diverse outcomes and various pathways taken by individuals with the same beginning point (Cicchetti & Rogosh, 2002). The concept of multi-potentiality highlights the importance of the adolescent as an individual and the environment in which each adolescent matures. The current study applies this concept by examining outcomes as stepping stones of potential for further development. For example, the present study examines the starting point of adolescents' developing coping resources and the emergence of anxiety symptoms, to shed light on the many potential outcomes that each individual may encounter through varying pathways.

Using the framework of developmental psychopathology, the concept of equipotentiality can be applied to the stressors during the transition from childhood to adolescence as there is often diversity in the causes and correlates of the progression to various risk outcomes, such as depression and anxiety (Cicchetti & Rogosh, 2002). For example, a group of individuals may demonstrate similar characteristics of anxiety, but within each individual, the manifestation of anxiety often occurs through different pathways. Furthermore, the transition from late childhood to late adolescence is a developmentally important time to study as it is considered a period of heightened risk and a "crucial risk window" for the onset of several forms of persistent problem behaviors (Loeber, Loeber & White, 1999). Thus, the current study hopes to identify ways which certain groups of adolescents may be better prepared to combat the negative effects of associated stress through their repertoire of coping strategies. The framework of developmental psychopathology also supports the point that adaptive or maladaptive "ending points" are not in themselves the end, but rather become starting points for

numerous potentialities. Thus, this study hopes to bring these constructs full circle to identify helpful tools for intervention and prevention to help adolescents who may otherwise feel overwhelmed by anxiety without adequate coping resources.

Adolescents may experience additional stressful events, such as parental divorce, moving into a new home, parental job loss or death of a relative, which may generate a boundless cycle of mutually interacting stressors and symptomatology (Seiffge-Krenke, 2000). Furthermore, the dynamic period of adolescence offers a window of opportunity to study the relationship between evolving coping styles and overall anxiety. In relation to coping choice, Cicchetti and Rogosch (2002) draw attention to the importance of the active role of adolescents in directing their course of development. This developmental psychopathology concept is known as the agency principle (Masten, 2006). This paper will use this framework to better understand how adolescents act as “agents” in their development of coping resources.

More specifically, the present study examines symptomatology across middle adolescence by examining how group differences in coping choice across gender and race predict anxiety. This period of middle adolescence is an interesting developmental period as adolescents often express ambivalent feelings for the need of increased individuation, while often still wanting the support of family members and membership in a peer network (Smetana, Campione-Barr & Metzger, 2006). Subsequently, middle adolescence is a period of development when adolescents show increased anxiety along with the emergence of gender differences (Crocetti et al., 2009; Van Oort, et. al., 2009; Ranta et al., 2007; Parker & Hadzi-Pavlovic, 2004; Crawford et al., 2001). An important note is that this study conceptualizes differences between boys and girls to reflect sex differences, referred to as gender differences within this study. Similarly, this study conceptualizes differences between racial groups as race differences. Therefore, an aim

of this study is identify coping strategies that help protect adolescents and act as a buffer against stress associated with this developmental period across gender and race.

Normative Principle

Another important principle in preventive and positive based approaches for stress and coping interventions is the normative principle. In regard to the normative principle, Masten (2006) notes that psychopathology must be defined in relative terms, taking into account adolescents' sociocultural and historical context. Previous ethno-theories (e.g. Freud and Ambert) describe adolescence as a period of "storm and stress" in which all adolescents undergo dramatic transformations and experience pathological problems. However, current research does not support this model of intense psychological pain and turmoil. For most adolescent tasks, the stress associated with such events is often perceived differently by individuals, depending up their perceived level of resources (Frydenberg, 2004).

Hence, researchers have suggested that the period of adolescence may be better described as a period of coping (Frydenberg and Lewis, 1993), rather than a period of storm and stress. In support of this view, Cicchetti & Rogosh (2002) state that large individual differences exist for problem behavior antecedents, such as mood disruptions and increased risk taking, while also stating these behaviors are not atypical during adolescence. However, for most adolescents, problems associated with development may be transient as only a small percentage of adolescents experience serious psychosocial problems (Cicchetti & Rogosh, 2002). Thus, the boundaries between normal and abnormal, as well as between normative developmental challenges and psychopathology become difficult to ascertain. Moreover, researchers may need to expand their focus to explore both positive and negative functioning within general populations in order to

more accurately conceptualize a normative model of adolescent adjustment across subgroup populations.

Mutually Informative Principle: Risk & Protective Factors

The mutually informative principle of developmental psychopathology is similar to the view taken in this paper on risk and protective factors. The mutually informative principle states that variations in adaptation, both positive and negative, resilience and maladaptation, as well as, normal and deviant behavior are mutually important for studying and understanding pathological and normal development (Masten, 2006). The conceptualization of adolescence as a period of coping closely aligns with this developmental psychopathology principle, such that researchers are able to begin with a framework that does not specifically target destructive behaviors and resulting negative outcomes. The following paragraphs will highlight the existence of differential risk and protective factors, supported by Jessor's theory on problem behavior.

Recent studies have demonstrated the importance of examining different protective factors that may exist within and between groups according to cultural traditions and socialization processes. For example, Ohannessian (2009) examined relations within a multivariate model of variables including, technology, anxiety, depression and substance use within a large, diverse community sample. The results indicated that media use (e.g. playing video games and watching television) may serve as a protective factor for boys in decreasing internalizing syndromes (e.g. depression and anxiety), but not for girls. In regard to the mutually informative principle, this study contributes useful information to understand pathways of risk and resiliency across gender. Furthermore, these findings relate to the framework of the present study with the

goal of studying whether coping strategies may similarly act as risk or protective factors for anxiety symptoms across gender and race.

Another influential theory on problem behavior and risk and protective factors is Jessor's problem behavior theory. Jessor's problem behavior theory (1991) has been extended based on the main constructs to include both risk and protective factors. The approach of including protective factors within problem behavior theory generates opportunities to research resiliency over time and also to advance adolescent normative development theory. Protective factors are described as factors that decrease the likelihood of engagement in a problem behavior by providing models of positive, prosocial behavior; hence, protective factors may indirectly moderate the impact of risk factor exposure (Jessor, 1991).

In contrast, risk factors increase the likelihood of engaging in a problem behavior by providing models for those behaviors (e.g. peer models for drug use), greater opportunity for involvement (e.g. availability of alcohol/ marijuana), as well as, personal and contextual vulnerability (e.g. daily stressors in low income neighborhoods with few resources) (Jessor, 1991). Factors such as, ethnicity or socioeconomic status may heighten normal teen challenges and affect life goals (Spencer & Tinsely, 2008). Researchers attempting to understand the mechanisms underlying adolescent risk trajectories start by examining pre-existing risk and protective factors. Therefore, longitudinal studies are an imperative research design to examine problem behavior antecedents.

For example, Cicchetti and Rogosh (2002) warn that adolescents with multiple risk factors during early childhood are more likely to have weaker coping resources to overcome these challenges during adolescence. These adolescents are more likely to engage in increased risk behavior activity and less likely to have a desire for

personal autonomy, thereby resulting in greater peer involvement (Cicchetti & Rogosh, 2002). Moreover, for some individuals, the period of adolescence may represent a shift towards multiple problems that may subsequently lead to long term negative consequences and co-morbidity of pathological problems, such as eating disorders, depression, anxiety, onset of substance use/alcohol use disorder, juvenile delinquency, ADHD, etc (Burt, 2002). However, according to the developmental psychopathology framework, all humans have a varying degree of some risk. Thus researchers must utilize varying approaches and measures to help identify pathways that contribute to both normative and deviant development (Masten, 2006).

In regard to anxiety disorders, risk and protective factors include individual characteristics, family factors or factors within the broader social environment that either place youth at an increased risk for anxiety or enhance their resiliency (Graczyk, Connolly & Coapci, 2005). The risk trajectory of adolescent anxiety disorders may include, “repeated school absences, impaired relations with peers, low self-esteem, alcohol or other drug abuse and problems associated with adjusting to transitions” (U.S. Department of Health and Human Services, 1999). However, in relation to the constructs of multi-potentiality and equi-potentiality adolescents may have similar beginning or ending points but experience these developmental processes through varying pathways and routes. Thus, the following chapter will provide a literature review on anxiety disorders, specifically reviewing differences by gender and race, as well as highlighting limitations of current research.

Chapter 2

ANXIETY DISORDERS

In a report on mental health, the U.S. Department of Health and Human Services (1999) defines childhood and adolescent anxiety disorders as “intense fear, worry, or uneasiness that can last for long periods of time and significantly affect their lives.” This report states that anxiety disorders have become one of the most common mental, emotional, and behavioral problems to occur during childhood and adolescence, in which about 13 out of 100 children and adolescents (ages 9-17) experience some form of anxiety disorder (U.S. Department of Health and Human Services, 1999).

Additionally, current research studies suggest that adolescents also may be more likely to experience mild to moderate levels of anxiety in comparison to adolescents suffering with depression (Ohannessian et al., 1999). However, despite the overwhelming presence of anxiety in the lives of many adolescents, relatively little research has studied the relationship between anxiety and coping longitudinally, particularly within diverse samples.

Anxiety symptoms have been reported to occur during the transition from childhood to early adolescence. However, very little is known about the developmental trajectories of specific anxiety disorders (Van Oort, Greaves-Lord, Verhulst, Ormel & Huizink, 2009). Previous research suggests that there is a heightened level of anxiety during mid-adolescence to late-adolescence, along with observed gender differences (Crawford, et al., 2001; Crocetti, Hale III, Fermani, Raaijmakers, & Meeus, 2009; Parker

& Hadzi-Pavlovic, 2004; Ranta et al., 2007; Van Oort, et al., 2009). Thus, a major focus of the current study is to explore whether certain coping strategies differentially protect against high levels of anxiety during mid adolescence in a diverse group.

Anxiety by Gender

Previous research clearly shows the emergence of gender differences for anxiety in adolescence with females showing higher levels of internalizing distress (Chaplin, Gillham, & Seligman, 2009; Lewinsohn et al., 1998; Sung, Puskar & Sereika, 2006). In a study examining ethnic differences in anxiety by Varela, Weems, Berman, Hensley, and de Bernal (2007) simply being female was associated with more anxiety symptoms. In contrast to the wealth of research available on gender differences in depression, there is relatively stark research on anxiety and the possible causes related to higher female risk for anxiety.

Some studies that have examined gender differences in anxiety during early and middle adolescence. In relation to early adolescence, girls reported higher levels of overall anxiety, worry and oversensitivity compared to boys (Chaplin, Gillham, & Seligman, 2009), placing them at risk for developing an anxiety disorder (U.S. Department of Health and Human Services, 1999). Following puberty, girls were also shown to report increasingly higher levels of internalizing syndromes (anxiety/depression) than boys (Reardon, Leen-Feldner & Hayward, 2009; Trudeau Spoth, Randall, & Azevedo, 2007). These results are consistent with other research studies suggesting that predictors of internalizing syndromes for boys and girls may differ somewhat across this developmental stage.

Several other studies have specifically examined the female preponderance in anxiety. For example, girls have shown to develop anxiety disorders at a faster rate than

boys and also have a higher risk of having more anxiety than boys (Crocetti et al., 2009; Lewinsohn et al., 1998). Meanwhile, other studies do not provide a comprehensive developmental model of comparison for gender differences in anxiety. Feng, Shaw and Silk (2008) examined young boys' anxiety (age range= 2-10) trajectory and concluded that parental negative control was found to be a significant risk factor for both anxious and non-anxious boys. Their study is clearly limited because they only studied young boys' anxiety symptoms during early and middle childhood.

Other contributing literature provides evidence that females are more likely to experience anxiety, as well as specific anxiety disorders (Hayward et al., 2008). For example, according to the United States National Comorbidity Survey (2005) the rates for any lifetime anxiety disorder across separate anxiety disorders were nearly two times higher for females compared to males (Kessler, Berglund, Demler, Jin & Walters, 2005). Another national survey analyzed by Chen, Killeya-Jones and Vega (2005) showed that females were significantly more likely to experience higher levels of anxiety and specific types of anxiety disorders.

Additional factors must also be examined that relate to demographic and individual characteristics (e.g. ethnicity, socioeconomic status, personality, academic achievement, self-competence) in order to understand important pathways of normative development for minority populations. Some researchers have begun to examine ethnicity in relation to anxiety and gender. Kingery, Ginsburg, and Burstein (2009) assessed the Multidimensional Anxiety Subscale for Children (MASC) within a predominately African American sample. Gender differences, although small in magnitude, emerged within this sample as females reported significantly higher levels of anxiety than males (i.e., on the total score, and physical symptoms and separation anxiety subscales). Crocetti et al., (2009) examined the validity and comparison of the Screen for

Child Anxiety Related Emotional Disorders (SCARED) within a large, cross-national sample of adolescents from Italy and Netherlands. Similarly, significant gender differences were found, such that girls were more likely than boys to score significantly higher on all anxiety subscales (e.g. panic disorder, social anxiety, generalized anxiety & separation anxiety) (Crocetti et al., 2009).

Other studies examining gender and ethnicity have focused on a specific anxiety disorder, such as social anxiety. For example, in a large study of Spanish adolescents (age range= 12-17 years), females reported higher levels of social anxiety fears compared to males (Garcia-Lopez, Ingles, & Garcia-Fernandez, 2008). These findings are supported by other research suggesting that young adolescents are more likely to experience social fears due to the importance placed upon being accepted by peers (Ranta et al., 2007). In yet another study, gender differences did not emerge until mid-adolescence with females being significantly more likely than males to experience internalizing symptoms during mid (ages= 11-15 years) and late adolescence (ages= 16-24 years), in which there was a link to parental stress and adolescent internalizing symptoms for females. Overall these results suggest that, for females, the developmental stage may play a role in the severity and amount of anxiety symptoms, particularly during times of perceived stress.

Anxiety by Race

Although ethnicity is an important variable in assessing risk and protective factors, very few researchers have examined ethnicity in relation to anxiety. There is a relatively large gap in the anxiety literature that stems from a lack of valid, reliable, and standardized assessments to assess anxiety symptoms among minority youth (Safren et al., 2000). Kingery, Ginsburg, and Burstein (2009) draw attention to the need of

normative data for minority populations in order to help researchers more adequately understand risk and protective factors and to also help clinicians identify and treat minority youth who are at risk for a disorder. Current research also lacks prevalence rates for specific ethnic groups in order to establish mental health needs that would allow for more effective targeted services distributed across multiple subpopulations (Chen, Killeya-Jones & Vega, 2005).

Overall, research studies have provided relatively mixed findings on this topic. Kingery, Ginsburg, and Burstein (2009) tested the reliability and validity of the MASC within a predominately African American sample of adolescents. Convergent validity with the SCARED measure was found for the MASC and the means for the MASC and four sub-scales were nearly identical for predominately white, community samples studied by other researchers (March, Parker, Sullivan, Stallings, & Connors, 1997; Dierker, Albano, Clarke, Heimberg, Kendall, Merikangas, Lewinsohn, Offord, Kessler, & Kupfer, 2001; Muris, Merckelbach, Ollendick, King, & Bogie, 2002). However, alphas were higher for social anxiety (.84) and physical symptoms (.78) subscales compared to harm avoidance (.53) and separation anxiety (.58) subscales. Thus, these results suggest that additional subscales that assess physical symptoms may need to be added to present measurements to more adequately assess how anxiety manifests in minority youth (Kingery, Ginsburg, & Burstein, 2009).

Recent studies have raised attention to the importance of studying acculturative stress for minority youth. Polo and López (2009) examined the effects of cultural and contextual factors that may be associated with the mental health of immigrant and U.S.-born Mexican American youth and specifically measuring internalizing distress. Within this sample ($n=161$) 12.4% were classified as falling within the clinical range based on their Youth Self Report scores (YSR), an additional 9.9% were in the borderline

clinical range, and approximately 4 out of every 10 (39.8%) were identified as having “Possible Social Phobia” on the SPAI-C. When examining correlations among variables, higher acculturation was associated with higher social anxiety and higher loneliness. Also, English proficiency was negatively related to social anxiety and loneliness. Thus, future studies should consider the relationship between acculturative stress, bilingualism, and social anxiety for adolescent youth.

Other studies have used national databases to examine ethnic differences in adolescent psychopathology. Chen, Killeya-Jones and Vega (2005) examined prevalence rates of anxiety utilizing the 2000 NHSDA survey results based upon pre-determined cut-offs for symptom item clusters, including seven anxiety problems, in the Diagnostic Interview Schedule for Children (DISC). These results suggested that African American adolescents reported a higher rate of anxiety problems and were twice as likely to experience OCD compared to Caucasian adolescents. Also, African American adolescents were at increased risk for any anxiety cluster, severe co-occurrence and overall anxiety problems. In addition, all minority groups in this sample were more likely to report anxiety problems than Caucasian youth (Chen, Killeya-Jones, & Vega, 2005). Moreover, these findings support the point made in the present study that researchers can not apply normative models of anxiety outcomes based upon Caucasian youth. Instead, the present study furthers this study by exploring how anxiety is influenced by coping strategies across racial groups.

Other studies have included other cultural groups or used cross-national samples in order to control for acculturative stress when examining ethnic differences in anxiety. Weems, Hayward, Killen & Taylor (2002) examined ethnic differences in anxiety experienced by adolescents. It was found that Caucasian adolescents reported lower anxiety scores than both Asian and Hispanic adolescents. More specifically, Varela

and colleagues (2007) examined anxiety within a sample of Caucasian, Latin American and Columbian adolescents using the Children's Anxiety Sensitivity Index (CASI; Silverman et. al., 1991) and the Brief symptom inventory – 18 (BSI-18; Derogatis, 2000). This study found that there were no differences in the levels of anxiety experienced by these three groups. Although these ethnic groups were directly compared, only three groups were used and one was used as a control. Also, this study used a children's measure of anxiety sensitivity which may not be appropriate for this sample.

Overall, these mixed findings suggest that there is a gap in research that comprehensively examines gender and ethnicity in relation to anxiety. This lack of research is apparent as there is not an identifiable theory on normative adolescent development across ethnicity/race. Furthermore, researchers are unable to accurately measure anxiety with conclusive findings that can conceptualize anxiety across racial groups. This research is imperative to uncover developmental pathways of risk and protective factors that may also be moderated by coping choices. Thus, this review will turn to literature examining coping in adolescents to give a brief overview of available research on this topic, particularly in regard to gender and ethnicity.

Chapter 3

COPING THEORIES AND FRAMEWORKS

Various competing theories have been used to understand the role of coping in adaptive adjustment, especially during the developmental stage of adolescence. To date, the majority of studies examining adolescent coping conceptualize coping using the transactional model of coping by Lazarus and Folkman (1984). The transactional model defines coping as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (p.141). Lazarus & Folkman (1984) and Folkman and Lazarus (1980, 1985) have conceptualized coping within two primary coping typologies: emotion-focused and problem focused. Emotion focused coping is described as volitional, with the goal of easing negative affect and internal demands and conflicts, whereas problem focused coping is an attempt to deal with stressful interactions between the person and the environment (Compas et al., 2001). Emotion-focused coping strategies may include positive reappraisal and seeking social support to help deal with emotions. Strategies within the dimension of problem focused coping include, instrumental social support and planning.

Carver, Scheier and Weintraub (1989) propose an alternate dimension of problem-focused coping called active coping. Active coping is defined as the process of taking active steps to eradicate or lessen the effects of the stressor. Active coping differs from problem focused coping by including three additional scales: planning, suppression

of coping activities (Carver, Scheier & Weintraub, 1989). Another commonly used distinction among coping styles is the separation of active and avoidance coping. For example, denial and venting emotions are considered types of avoidant coping strategies. Aldridge and Roesch (2008) state that although there are many theoretical models and conceptual definitions used to understand coping, it can be generally defined as a “cognitive and/or behavioral attempt to manage (reduce or tolerate) situations that are appraised as stressful to an individual.”

Spencer and Tinsely (2008) propose an interactional model of coping and overall adolescent well-being partially defined by risk and protective factors. Within this model, productive coping outcomes include behaviors that lead to overall better adolescent well-being, such as academic achievement, positive relationships, and higher self-esteem and self-efficacy. In contrast, unproductive coping outcomes may include poor health habits, an underachievement orientation, incarceration or self-destructive behavior. Moreover, these productive and unproductive outcomes give way to protective and risk factors; hence, furthering the cyclical nature of the transactional model of coping.

Different Coping Strategies & Outcomes

Previous research suggests that certain coping strategies are either adaptive or maladaptive for adolescent adjustment. However, this distinction is too simplistic. Recent studies have demonstrated that outcomes vary upon multiple factors, indicating that no single coping dimension can be labeled as maladaptive (Aldridge & Roesch, 2008). Also, recent research suggests that conceptualizing emotion-focused coping as maladaptive and problem-focused coping as adaptive is too simplistic as the correlations are only modestly consistent, and the overall correlations with adjustment are relatively small in magnitude (Compas et al., 2001). Moreover, additional dimensions of coping

that do not fit within these coping typologies, (e.g. humor or religious coping) must also be examined within varying contexts to paint a more complete view of successful adolescent adjustment and adaptive coping.

Of the many kinds of coping strategies that have been studied, humor emerges as a multidimensional construct that has shown to predict a variety of outcomes. Depending on the type of stressor and the resulting motivation for use, humor may act in an adaptive or maladaptive way (Erickson & Feldstein, 2007). For example, humor may be used to self deprecate leading to low self esteem or may be used to laugh with friends in which humor enhances one's self concept. However, despite frequent use of humor within the lives of young people, humor as a coping style has been relatively unexplored in adolescent populations. Thus, it is important to study humor as a multidimensional construct. However, there are few sound psychological measures for humor in adolescent populations.

Although the study by Erickson and Feldstein (2007) does not examine gender and ethnic differences in humor, the study does shed light on the use of humor as a multidimensional construct. Findings from this study showed that positive dimensions of humor such as laughing, or joking (affiliative humor) and having a humorous outlook on life (self-enhancing humor) were both positively associated with approach coping and mature defense styles (maintaining a sense of reality), whereas aggressive and self-defeating humor were negatively associated with approach coping and positively associated with immature defense styles, such as distorting or denying reality (Erickson & Feldstein, 2007). These results exemplify how humor may act as a double edged sword, depending on the intended use.

Another coping strategy that has been shown to produce mixed results in previous studies is religious coping. Religious coping has been extensively examined

within old and young age groups dealing with severe health problems and hospitalizations, as it has been theorized to have beneficial results for these populations (Pargament, Koenig, & Perez, 1996). However, religious coping has been relatively unexplored in normative adolescent populations, particularly across gender and ethnicity. Of the studies that have examined group differences have been cross-sectional in nature (Davis et al, 2003; Pearce et al, 2003). In addition, there is a lack of consistency regarding the conceptualization of religious coping among recent studies (For a review see Cotton et al., 2006). The majority of studies suggest that religious coping/spirituality greatly depends upon existing third variables and upon the outcome being measured (Cotton et al., 2006). Another argument is that religious coping is often examined in the absence of good measures of religious identity; thus, you may be using a proposed model of “faith” to bring adjustment or maladjustment to the target individual in a study. For example, an outcome of religious coping as a construct may vary from church attendance to how many times a person prays. These reasons may explain the lack of consistency among findings on religious coping, particularly for adolescents within varying groups and contexts.

Coping and Gender Differences

Current research studies on adolescent coping specifically targets the positive relationship between internalizing distress and ruminative thought, particularly within girls. For example, in an early study by Carver, Scheier and Weintraub (1989) significant gender differences were found for focusing on and venting emotions with girls significantly more likely to report using this coping strategy than boys. Comparatively, in a study by Jaser et al., (2007) girls were somewhat more likely than boys to use disengagement coping. However, this finding differs from current literature and should

be interpreted with caution due to a small sample size. Collectively, these studies highlight ways in which girls negatively cope with stress during adolescence, which may therefore explain the female preponderance of anxiety.

In addition, other studies examine coping within the context of negative events as a significant risk factor for adolescents. In particular, girls have reported using significantly more negative coping strategies than boys at the baseline assessment (Sawyer, Phfeiffer & Spence, 2009). For boys, a significant interaction occurred, indicating that boys exposed to a higher number of negative life events and who used more negative coping strategies, had the highest levels of depressive symptoms (Sawyer, Phfeiffer & Spence, 2009). One important conclusion to be drawn from this study is that a high amount of negative experiences increases adolescents' risk of internalizing distress. Another possible interpretation is that girls may have more risk when experiencing a negative experience due to their existing repertoire of negative coping strategies.

Another longitudinal study by Frydenberg and Lewis (2000) monitored a group of Australian adolescents ($n= 168$) on three occasions over a 5-year period using the Adolescent Coping Scale (ACS; Frydenberg & Lewis, 1993). Significant gender differences were found, such that by the age of 16, girls were significantly more likely to report an increased inability to cope and declare feelings of helplessness than boys. Overall, for both boys and girls, the period between the ages of 13 to 15, were labeled as "critical points" or "downturns." For example, being socially active, turning to spiritual support and the use of physical recreation decreased in use between ages of 12 and 14. These results support that model of intervention during middle adolescence to help youth become aware of productive coping strategies and feel an increased sense of personal agency, which may be particularly helpful for girls. Similarly, the present study includes

additional coping dimensions (e.g. humor and religious coping) to explore whether these coping strategies emerge as protective factors during mid adolescence.

Coping and Race Differences.

Additionally, there is a need to include diverse samples particularly in humor and religious coping research, because they have been relatively neglected. In relation to religious coping, the majority of past research with adolescents has involved Caucasian, primarily Judeo-Christian samples. For example, Erickson and Feldstein (2007) conducted a study examining a new measure, the HSQ within a non-clinical, mostly Caucasian sample. Furthermore, this study should be replicated to more thoroughly examine if there are differential outcomes for the use of humor by race, instead of using Caucasian youth as the norm for comparison of coping outcomes.

Some studies that have explored race may have only focused on one racial group but assessed a variety of coping strategies, such as humor and religion. For example, Aldridge and Roesch (2008b) assessed daily stress, coping, and psychological health (positive and negative affect) within a group of 67 Mexican American adolescents categorized as having a low socioeconomic status (SES). As expected coping strategies typically grouped as approach coping (problem solving, positive thinking) were associated with positive affect, as well as, acceptance and humor. However, use of distracting actions, religious coping and acceptance were associated with higher levels of negative affect. Thus, these finding suggests that Mexican American adolescents utilize a fairly flexible variety of coping strategies. Another conclusion is that these results may differ from other studies due to varying conceptualizations of humor and religious coping.

Similar to the present study, Aldridge and Roesch (2008a) used the COPE measure but specifically targeted a large group of low SES, minority adolescents. This

study added a stress-growth measure in relation to depressive symptoms. The results suggest some adolescents were using a variety of coping methods but not employing these methods to the fullest capacity, whereas rest of the group was described as “active copers.” Overall, this study provides useful results for the present study as it uses a positive approach to understand minority adolescents coping instead of a deficit cultural model.

Similarly, Finkelstein, Kubazansky, Capitman and Goodman (2007) investigated whether psychological resources (e.g. optimism) influenced the association between parent education and perceived stress within a large sample of junior and senior non-Hispanic white and black adolescents. Parent education was used to represent socioeconomic status. The results from this study indicated that adolescents who had parents with low education had higher levels of perceived stress. The psychological resources, such as optimism and engagement coping held by these adolescents were associated with less stress whereas higher disengagement coping was associated with higher stress. Also, optimism was found to partially mediate the inverse SES-stress relationship. These findings are important for the present study as it draws attention to a potential confounding variable of environmental stress: SES, represented by parents’ education.

Conclusion of Literature Review

A majority of research studies examining adolescent anxiety and coping by gender and ethnicity have been cross-sectional and/or have not addressed both variables (Polo & López, 2009; Davis et al, 2003; Pearce et al, 2003). Guided by the longitudinal principle, the present study furthers current research by including a prospective, study that examines changes over time which is essential for beginning to understand the interaction

between systems that influence development, as well as, the many possible pathways of risk and resiliency (Masten, 2006).

This review illuminates the need to increase diversity within studies that examine both anxiety and coping in order provide a comprehensive view on pathways of risk and resiliency across all racial groups. Similarly, Steinberg and Morris (2001) challenge researchers to advance adolescent development theory by expanding their focus of normative development to include ethnic-minority and poor youth within developmental research designs, rather than specifically targeting problematic aspects of adolescence for these populations. Hence, in order to adequately represent diversity, studies must include data from multiple ethnic groups (African American, Hispanic, Asian American and Native American youth) and use group analyses within a single ethnic group and cultural background (Steinberg & Morris, 2001; Smetana, Campione-Barr & Metzger, 2006). The relationship between adolescent anxiety and coping choice has been largely ignored to date, particularly across gender and ethnicity. Hence, a major aim of the present study is to fill in the gaps of current literature.

The present study sought to extend current research by exploring the relationship between adolescent anxiety and coping in relation to gender and ethnic differences in a large, diverse community sample of adolescent boys and girls. More specifically, the following research questions were addressed: (1) Does anxiety differ by gender and/or race during adolescence? (2) Do coping strategies differ by gender and/or race during adolescence? (3) Are coping strategies related to anxiety during adolescence? Do these associations vary by gender and/or race? (4) Does coping predict anxiety over time during adolescence?

Chapter 5

METHODS

Participants

The sample for this study was drawn from the larger project, the University of Delaware's Adolescent Adjustment Project, during the Spring of 2007 (Time 1). The participants include a fairly diverse sample of 1,001 adolescent boys ($n=470$, 47%) and girls ($n=531$, 53%). All adolescents were in 10th (58%) or 11th (42%) grade and were attending a public high school in Delaware, Maryland, or Pennsylvania. Overall, 7 high schools within the Mid Atlantic Region agreed to participate in this study. Students at these high schools were fairly diverse including students who identified as Caucasian (58%), African American (23%), Hispanic (12%), Asian (2%), and the remaining 5% of students identified as other. The age range is from 15-17 years old with a mean age of 16.09 ($SD=.68$).

Measures

Adolescent Anxiety

The Screen for Child Anxiety Related Disorders (SCARED; Birmaher, Khetarpal, Cully, Brent, & McKenzie, 1995) was used to measure adolescent anxiety. The SCARED includes 41-items, which are completed in reference to the last three

months. SCARED items were summed to reflect an overall anxiety score. Examples of items include “I am nervous” and “I get really frightened for no reason at all.” Response scales range from 0 = not true or hardly ever true to 2 = very true or often true. The SCARED has been shown to have high levels of reliability (e.g., internal consistency, test-retest reliability) and validity (e.g., concurrent validity, discriminate validity) (Birmaher, Khetarpal, Cully, Brent, & McKenzie, 2003; Muris, Merckelbach, Ollendick, King, & Bogie, 2002). The Cronbach alpha coefficient for the overall anxiety (SCARED total) score in our sample was .93.

Adolescent Coping

The COPE (COPE; Carver et al., 1989) was used to measure how adolescents cope during difficult or stressful events in their lives. There are 36 total items which are summed to create a score for each subscale of coping. Each subscale represents a theoretical model of coping. This study used the following coping subscales: Humor, Religious Coping, Venting Emotions and Denial. Sample items include “I make fun of the situation” (humor) and “I let my feelings out” (venting emotions). The response codes range from 1 = I usually don’t do this at all to 4 = I usually do this a lot. The COPE has been shown to have satisfactory test-retest reliability and convergent and divergent validity (Carver et al., 1989; Phelps & Jarvis, 1993). In our sample, the Cronbach alpha coefficient for each subscale was: Humor (.86), Religious coping (.88), Venting Emotions (.81), and Denial (.78).

Procedure

In the spring of 2007, trained undergraduate and graduate students surveyed the adolescents in school. Before starting the survey, parental consent was obtained and

adolescents provided assent. The self-report survey took approximately 40 minutes to complete. Adolescents were given a movie pass for their participation.

Chapter 6

RESULTS

Data Analysis

The statistical software program, SPSS (version 17.0, SPSS Inc., Chicago, IL) was used for the analysis of the data. First, a series of analysis of variance (ANOVA) models were conducted to examine overall group differences in predicting anxiety and coping by gender and race/ethnicity. Next, bivariate correlations between the coping scales and overall anxiety were conducted at both Time 1 (2007) and Time 2 (2008) to examine whether coping strategies are related to anxiety by gender and race. Finally, separate linear regression models were conducted to examine whether the relationship between coping and anxiety during adolescence differs by gender and/or race over time. The questions that this study answers are the following:

Results Listed By Research Question

Question 1: Does anxiety differ by gender and/or during adolescence?

First, ANOVA models were conducted to examine group differences in anxiety by both gender and race at Time 1 and Time 2. When gender was examined, the model was significant for girls' anxiety at both Time 1 ($F(1,885) = 72.77, p < .001$) and Time 2 ($F(1,746) = 30.68, p < .001$). Girls were shown to report significantly higher

levels of anxiety than boys at both times (See tables 1 and 2). In contrast, the ANOVA models predicting anxiety from race were not significant at either time points. Thus, these results suggest that overall anxiety differs by gender, but not race during adolescence. These results also support models of the female preponderance of anxiety during adolescence.

Question 2: Do coping strategies differ by gender and/or race during adolescence?

ANOVA models were also conducted to examine group differences in coping strategies by both gender and race at Time 1 and Time 2. When gender was examined, religious coping was significant, such that girls had significantly higher levels of religious coping than boys at Time 1 ($F(4,923) = 29.89, p < .001$) and Time 2 ($F(1,815) = 22.65, p < .001$). Frequent use of venting emotions also was significant at Time 2 ($F(1,804) = 132.66, p < .001$), indicating that girls were significantly more likely to use venting emotions than boys (See tables 1 and 2).

Coping strategies also were observed to differ by race. Religious coping significantly differed by race at both Time 1 ($F(3,875) = 40.18, p < .001$) and Time 2 ($F(3,759) = 37.24, p < .001$). At Time 1, a Bonferroni post hoc test revealed that African American youth had significantly higher levels of religious coping than Caucasian youth (mean difference = 3.37, $p < .001$) and Hispanic youth (mean difference = 2.36, $p < .001$) (See table 1). At Time 2, a Bonferroni post hoc test revealed that African American youth similarly had significantly higher levels of religious coping than Caucasian youth (mean difference = 3.57, $p < .001$), Hispanic youth (mean difference = 2.60, $p < .001$), and Asian youth (mean difference = 3.57, $p < .001$). At Time 2, the use of denial significantly differed by race ($F(3,754) = 8.76, p < .001$). A Bonferroni post hoc test revealed that African American youth had significantly higher levels of denial than Caucasian youth

(mean difference= 1.24, $p < .001$) (See table 2). Collectively, these results suggest that certain coping strategies differ by gender and race during adolescence.

Table 1 Means and Standard Deviations among Study Variables at Time 1 by Gender and Race

Measure	Gender		Ethnicity			
	Boys	Girls	C	A-A	H	A
Venting Emotions	7.46 (2.91)	9.87 (3.21)	8.68 (3.34)	8.89 (3.19)	8.86 (3.37)	9.29 (3.39)
Denial	6.41 (2.77)	6.67 (2.86)	6.40 (2.70)	6.55 (2.83)	7.00 (3.03)	6.96 (2.60)
Religious Coping	8.41 (3.71)	9.28 (4.13)***	7.94 (3.78)	11.30 (3.62)***	8.95 (3.40)	9.30 (4.12)
Humor Coping	9.25 (3.46)	8.74 (3.52)	9.27 (3.58)	8.70 (3.33)	8.41 (3.36)	8.67 (3.28)
Total Anxiety	12.75 (11.39)	19.70 (12.72)**	16.78 (12.85)	15.15 (12.23)	18.08 (12.62)	17.74 (10.02)

Note: C stands for Caucasian, A-A stands for African-American, H stands for Hispanic, and A stands for Asian.

** $p < .05$ ** $p < .01$ *** $p < .001$*

Table 2 Means and Standard Deviations among Study Variables at Time 2 by Gender and Race

Measure	Gender		Ethnicity			
	Boys	Girls	C	A-A	H	A
Venting Emotions	7.47 (3.16)	10.02 (3.06)***	8.78 (3.37)	9.49 (3.12)	8.95 (3.39)	9.38 (3.72)
Denial	6.41 (2.96)	6.58 (2.95)	6.09 (2.75)	7.33 (3.23)***	6.92 (2.96)	7.00 (2.78)
Religious Coping	7.99 (3.85)	9.36 (4.21)***	7.86 (4.02)	11.43 (3.48)***	8.83 (3.39)	7.86 (3.91)
Humor Coping	9.09 (3.39)	8.78 (3.54)	9.08 (3.55)	9.03 (3.40)	8.24 (3.31)	8.27 (3.55)
Total Anxiety	12.23 (12.51)	17.48 (12.95)***	15.16 (3.20)	15.09 (12.77)	15.49(13.10)	15.25 (13.01)

Note: C stands for Caucasian, A-A stands for African-American, H stands for Hispanic, and A stands for Asian.

** p < .05 ** p < .01 *** p < .001*

Table 3 Bivariate Correlations between Study Variables by Gender and Ethnicity at Time 1

Coping Scale	Overall Anxiety					
	Gender		Ethnicity			
	Boys	Girls	C-A	A-A	H-A	A
Venting Emotions	.35***	.29***	.37***	.39***	.48***	.67**
Denial	.33***	.31***	.34***	.13	.51***	.37
Religious Coping	.10	-.04	.03	.03	.29**	.17
Humor Coping	.05	.02	-.05	.01	.11	.19

Note: C stands for Caucasian, A-A stands for African-American, H stands for Hispanic, and A stands for Asian.

** p < .05 ** p < .01 *** p < .001*

Question 3: Are coping strategies related to anxiety during adolescence? Do these associations vary by gender and/or race?

Bivariate correlations between the coping scales and overall anxiety were conducted at both times to examine whether coping strategies are related to anxiety by gender and race. When gender was examined, differences were found for relations between coping strategies and overall anxiety. At Time 1, frequent use of venting emotions was significantly associated with anxiety for boys, such that boys that had higher levels of venting emotions ($r = .35, p < .001$) reported higher levels of anxiety. Denial also was positively associated with anxiety for boys ($r = .33, p < .001$). Similarly, for girls, frequent use of venting emotions ($r = .29, p < .001$) and denial ($r = .29, p < .001$) were both positively and significantly associated with anxiety at Time 1 (See Table 3).

At Time 2, frequent use of venting emotions ($r = .43, p < .001$), denial ($r = .45, p < .001$), religious coping ($r = .20, p < .001$), and humor coping ($r = .17, p < .01$) were all significantly associated with anxiety, such that boys that had used these coping strategies reported higher levels of anxiety. For girls at Time 2, frequent use of venting emotions ($r = .25, p < .001$) and denial ($r = .43, p < .001$) were both positively and significantly associated with anxiety. Thus, for girls, the pattern was similar at both times (See Table 4).

Table 4 Bivariate Correlations between Study Variables by Gender and Ethnicity at Time 2

Coping Scale	Overall Anxiety					
	Gender		Ethnicity			
	Boys	Girls	C-A	A-A	H-A	A
Venting Emotions	.43***	.25***	.37***	.30***	.57***	.27
Denial	.45***	.31***	.38***	.31***	.39**	.41
Religious Coping	.20***	.02	.11*	.04	.39**	.16
Humor Coping	.17**	-.00	.09	-.11	.25*	-.18

Note: C stands for Caucasian, A-A stands for African-American, H stands for Hispanic, and A stands for Asian.

** p < .05 ** p < .01 *** p < .001*

When race was examined, certain coping strategies were related to anxiety, with this relationship varying by race. At Time 1, frequent use of venting emotions ($r = .37, p < .001$) and denial ($r = .34, p < .001$) were both positively and significantly associated with anxiety for Caucasian youth. Similarly, frequent use of venting emotions ($r = .48, p < .001$) and denial ($r = .51, p < .001$) were both positively and significantly associated with anxiety for Hispanic youth. Only frequent use of venting emotions was significantly associated with anxiety for African American youth ($r = .39, p < .001$) and Asian youth ($r = .67, p < .001$).

At Time 2, frequent use of venting emotions ($r = .37, p < .001$), denial ($r = .38, p < .001$) and religious coping ($r = .11, p < .05$) were significantly associated with anxiety for Caucasian youth. Similarly, frequent use of venting emotions ($r = .30, p < .001$) and denial ($r = .31, p < .001$) were significantly associated with anxiety for African American youth. All coping scales, including frequent use of venting emotions ($r = .57, p < .001$), denial ($r = .39, p < .01$), religious coping ($r = .39, p < .01$) and humor coping ($r = .25, p < .05$) were significantly associated with anxiety for Hispanic youth at Time 2. Overall, these findings show a pattern for higher levels of anxiety associated with denial and venting emotions. None of the coping scales were significantly associated with anxiety for Asian youth.

Question 4: Does coping predict anxiety over time during adolescence?

Separate linear regression models were conducted to examine the relationship between coping and anxiety over time. The model for girls revealed that frequent use of venting emotions ($\beta = .22, p < .001$) and denial ($\beta = .24, p < .001$) significantly predicted higher levels of anxiety over time (See Table 5). In contrast, the frequent use of humor

coping ($\beta = -.12, p < .05$) significantly predicted lower anxiety for girls over time. None of the coping strategies significantly predicted anxiety for boys over time.

For Caucasian youth, the frequent use of venting emotions ($\beta = .23, p < .001$) and denial ($\beta = .21, p < .001$) significantly predicted higher levels of anxiety over time (See Table 5). In contrast, the frequent use of humor coping ($\beta = -.12, p < .05$) and religious coping ($\beta = -.13, p < .05$) significantly predicted lower levels of anxiety for Caucasian youth over time. The frequent use of venting emotions ($\beta = .39, p < .001$) similarly predicted higher levels of anxiety for Hispanic youth over time.

Table 5 Linear Regression Weights Predicting Anxiety at Time 2 from the Coping Scales at Time1

Standardized Betas (β)	Gender		Ethnicity			
	Boys	Girls	C-A	A-A	H-A	A
Denial	.15	.24***	.21***	-.13	.24	.29
Humor	-.08	-.12*	-.12*	-.11	-.02	-.08
Religious Coping	-.13	-.08	-.13**	-.14	.16	-.33
Venting Emotions	.14	.22***	.23***	.25*	.39**	.66

*Note: C stands for Caucasian, A-A stands for African-American, H stands for Hispanic, and A stands for Asian.
* $p < .05$ ** $p < .01$ *** $p < .001$*

Chapter 7

DISCUSSION

The developmental period of adolescence marks the stage of rapid and far reaching changes in individual traits such as increased physical strength and growth in intellectual and emotional capabilities. Substantial changes are also occurring within adolescents' evolving social context, whether it may be the initiation of romantic and sexual relationships, friendship cliques or changes in family structure. All of these changes consequently shape each individual's worldview, which may result in increased stress (either positive or negative) that ultimately leads to increased demand on coping resources. The primary goal of the current study was to examine the relationship between adolescent anxiety and coping in relation to gender and ethnic differences. More specifically, the present study extended current research by utilizing a longitudinal and diverse sample to more adequately assess which coping processes are associated with increased anxiety across gender and ethnicity. Overall, results indicated that anxiety and coping varies across gender and ethnicity, in which additional mechanisms may influence the relationship over time.

The first research question examined whether anxiety differed by gender and/or race during adolescence. Consistent with the literature, clear gender differences existed in the present study, such that girls were found to have higher levels of anxiety than boys (Chaplin, Gillham, & Seligman, 2009; Lewinsohn et al., 1998). Additional research is needed to uncover the mechanisms that may contribute to this developmental

process resulting in girls having a higher likelihood of internalizing distress. One explanation is that girls may be more vulnerable to stress associated within family and peer relationships (Crawford et al., 2001). Another explanation may be that females have biological differences that make them more vulnerable to stress, particularly when they are in families with a high level of negative affect. Also, studies have found evidence for high levels of anxiety for girls following puberty (Reardon, Leen-Feldner & Hayward, 2009; Trudeau et al., 2007). Moreover, this peak of stress after puberty could be associated with females having to make decisions concerning sexual relations earlier than males. This added pressure for females is among a myriad number of decisions that adolescents must answer before having mature coping resources at their disposal.

Utilizing the developmental psychopathology framework, the systems principle may help account for gender differences for anxiety during adolescence. The systems principle states that individuals are a part of larger systems and as these systems interact, psychopathology may arise due to other complex interactions among the multiple systems embedded in an individuals' life across the lifespan (Masten, 2006). The developmental psychopathology perspective and the construct of equi-potentiality support the view taken in the current study that there are multiple causes for the female preponderance of anxiety (Murriss, 2006). Furthermore, additional research on successful and unsuccessful adaptation is needed to examine the origins of psychopathology, particularly the etiology of anxiety disorders during adolescence.

Meanwhile, anxiety did not differ by race. The lack of significant findings for race can be interpreted in a variety of ways. First, it may suggest that overall anxiety does not differ across racial groups. However, other studies have found racial differences in anxiety (Chen, Killeya-Jones and Vega, 2005; Weems, et al., 2002). An alternate interpretation is that anxiety may differ across race by specific anxiety disorders

(Ginsburg & Silverman, 1996). Another explanation for the lack of significant findings within the present study is likely due to the cross sectional examination of anxiety at two consecutive time points. Regardless, additional research is needed on the relationship between race and anxiety in order to understand important pathways of risk and protective factors that can lead to better intervention and prevention models.

The second research question addressed whether coping strategies differ by gender and/or race during adolescence. Coping strategies were found to significantly differ by gender and race. Girls were shown to use significantly higher levels of religious coping and venting emotions than boys. This finding suggests that girls are more likely to turn to religion and cope by venting their emotions to others in comparison to boys. Previous research has indicated that girls are more likely to use emotion focused coping, whereas boys are more likely to use problem focused coping (Byrne, 2000; Frydenberg & Lewis, 1991; Patterson & McCubbin, 1987). This finding may also suggest that boys are using a larger repertoire of coping strategies, rather than using a few coping strategies more frequently.

In regard to religious coping, there has been a lack of research examining the use of this coping strategy during adolescence and specifically examining between group and within group differences. Thus, this study contributes useful information to the existing coping literature. One possible interpretation is that girls are more likely to turn to religious coping and venting emotions as a way to gain social support and talk to others about their feelings. The COPE measure assesses religion in a general way which includes items, such as, *“I put my faith in God, I find comfort in my religion and I put my trust in God.”* Thus, it may be that girls are more likely to turn to religion and/or God because they are using similar processes that are related to the relationship aspect of venting emotions, such as their relationship to God and their church community. Another

interpretation is that girls are being exposed to a higher number of stressors, thus leading to higher anxiety which may motivate them to turn to a higher power and therefore use higher levels of religious coping. Overall, additional research is needed to explore pathways in which religious coping may be conceptually related to social support or venting of emotions.

Interestingly, race differences were found, such that African American adolescents were most likely to use religious coping when confronted with stress, in comparison to Caucasian and Hispanic adolescents. Thus, African American youth have developed systems for coping when faced with stress that includes religious coping. Previous studies have shown that religion and spirituality act as a protective force in African American families (Brody, Stoneman & Flor, 1996; Carothers, Borkowski, Lefever & Whitman, 2005; Taylor & Chatters, 1991). Overall, literature on religious coping provides mixed results due to varying conceptualizations and measures of “religion.” The functions of religion are likely to vary within individuals and across groups. Thus, it is very difficult to assess another individual’s faith identity based upon general measures. Functions of religion may include but are not limited to the provision of moral guidance, political leadership and feelings of community.

African American youth also were shown to use significantly higher levels of denial compared to all other ethnic groups. Collectively, these findings may suggest that African American youth are experiencing a higher number of stressors that they perceive are beyond their control, are therefore more likely to use denial and religious coping for support. Additional research should examine whether these two constructs examine similar outcomes by comparing religious coping and social support by race and gender. These two constructs may therefore be categorized within emotion focused coping, as

females were also more likely to use higher levels of venting emotions and religious coping.

The third research question addressed whether coping strategies are related to anxiety during adolescence and whether these associations differ by gender and/or race. Significant differences were found for both gender and race. Frequent use of venting emotions and denial were related to higher anxiety levels across gender and race. More specifically, venting emotions and denial were shown to predict higher levels of anxiety for both girls and boys, which is consistent with previous literature. Also, girls were shown to have higher levels of anxiety than boys at both time points, in which the relationship was significant among venting emotions and denial in predicting higher anxiety one year later. Collectively, these results suggest that girls' high levels of anxiety may lead to different outcomes when paired with certain coping strategies, such as venting emotions and denial.

Boys who used significantly higher levels of religious coping and humor had significantly higher levels of anxiety. However, the strength of these relationships is relatively small, and should be interpreted with caution. The large number of males and females within the large cross-sectional sample may have contributed to this significant finding. Another possible interpretation is that boys who are more anxious tend to use more religious coping and humor than boys who are less anxious. Thus, it is likely that other third variables are influencing the association between these coping strategies and anxiety.

When race was examined, certain coping strategies were related to anxiety, with this relationship varying by race. Once again, venting emotions was significantly associated with higher levels of anxiety for all ethnic groups. Also, denial was associated with higher levels of anxiety for all racial groups besides Asian youth which may be due

to a small sample of Asian adolescents ($n= 2\%$). These findings indicate that venting emotions and denial may be a maladaptive coping strategy or that anxious youth tend to vent about their emotions more than non-anxious youth. The direction of the relationship is unknown due to the use of cross-sectional data.

Also, religious coping was associated with higher levels of anxiety for Caucasian youth and Hispanic youth. Humor coping also was related to higher levels of anxiety for Hispanic youth. Mixed findings have been previously reported for humor and religious coping most likely due to the use of varying samples within other studies (Aldridge and Roesch, 2008). Different conceptualizations of coping may also account for these differential results. For example, Folkman & Lazarus (1988) considered humor, religious and acceptance as emotion-focused coping styles. Conversely, in the present study utilizes the COPE measure which conceptualizes religious coping as a single scale that assesses in a general way the tendency to turn to religion in times of stress (Carver, Scheier & Weintraub, 1998). Alternatively, religious coping may be used as a stress reducer for varying reasons, such as, a source of emotional support, a way for creating meaning in one's life and growth or as an active coping strategy.

The final research question addressed whether coping predicts anxiety over time. For girls, the frequent use of venting emotions and denial also significantly predicted higher anxiety. This finding is consistent with previous research suggesting that girls are prone to emotion-focused coping styles which have shown to significantly increase anxiety levels (Byrne, 2000; Frydenberg & Lewis, 1991; Patterson & McCubbin, 1987). The cross-sectional results revealed that girls had significantly higher levels of anxiety at both time points. It is important to note that this study did not assess whether anxiety predicts coping choice. However, these results show that a relationship does exist

between these variables, in which girls with high levels of anxiety should not be encouraged to use these coping strategies.

In contrast, the frequent use of humor significantly predicted lower anxiety for girls. Thus, despite high levels of anxiety reported by girls, those who used humor had less anxiety one year later. The strength of this relationship was .12, therefore, humor accounted for only 12% of the variance. Moreover, it is likely that other mechanisms influence the relationship between humor and decreased anxiety, such as social support or increased self esteem. This finding suggests that humor may be as useful, if not more protective for girls than boys, particularly during middle adolescence. Other research studies examining the relationship between humor, stress and gender have resulted in mixed results which are likely due to different samples, designs, and measures of humor.

In the current study, none of the coping scales predicted anxiety for boys. Turning to the developmental psychopathology framework, this non-significant finding suggests that additional research is needed to determine alternate pathways of risk and protective factors that are not examined within this study, such as alternate coping strategies (e.g. behavioral disengagement, planning, playing video games, etc.).

Ethnic differences revealed that frequent use of venting emotions and denial predicted significantly higher levels of anxiety for Caucasian youth. The frequent use of venting emotions similarly predicted significantly higher anxiety for Hispanic youth. This finding is consistent with previous literature, in that venting emotions and denial have been found to correlate with higher levels of anxiety. This finding supports the need for examining race differences, rather than applying a normative model based on Caucasian youth. Alternatively, this finding may suggest that Caucasian and Hispanic youth who are more anxious are more likely to use these coping strategies, which in turn lead to

higher levels of anxiety. Overall, additional research is needed to examine other variables that contribute to this relationship.

In contrast, the frequent use of humor coping and religious coping significantly predicted lower anxiety for Caucasian youth. The models were not significant for African American or Asian youth. Moreover, these results once again indicate that the Caucasian “norm” does not always apply to other groups, further supporting the importance of utilizing a cultural model to examine other racial groups. Recent studies show mixed findings for humor and religious coping, particularly when these coping styles are examined by race.

Using the framework of developmental psychopathology, the concepts of equi-potentiality and multi-potentiality can be applied to the relationship between anxiety and coping across gender and race. First, the results from this study indicate that there is diversity in the causes and correlates of the progression to various risk outcomes, such as increased anxiety. Moreover, although these results indicate starting points which may lead to risk, such as using maladaptive coping, the results cannot prove what pathways will occur as a result. Therefore, these concepts of developmental psychopathology direct attention to the need for following these adolescents within a longitudinal study over multiple time points and several years.

Limitations of Present Study

This study presents important information on relatively unexplored coping styles across gender and ethnicity, although there are several potential limitations. One limitation is the use of self report data, which could potentially create report bias. However, based on previous research, adolescents have been shown to provide relatively accurate self reports of their own coping and symptoms of internalizing distress (e.g.

anxiety & depression) (Cosi, Canals, Hernáñez-Martínez, & Vigil-Colet, 2009; Garnefski, Legerstee, Kraaij, van den Kommer & Teerds, 2002).

Another possible limitation of COPE is the examination of dispositional coping, which measures the adolescent's coping style used most frequently within the past three months, rather than identifying which coping styles are used differentially depending on the specific stressor. However, this study is important as it helps to build upon normative models of coping by gender and race, which is why the COPE was particularly useful. For example, specific coping styles, such as humor and religious coping have been relatively neglected in adolescents, particularly by gender and race. Moreover, future research can build upon this present study through important findings on the relationship between anxiety and coping that exist over time.

Also, there was also a relatively small sample of Asian American adolescents compared to other ethnic groups in the present study. Therefore, the statistical power may not have been as powerful when predicting anxiety from the coping scales for Asian American adolescents. Additionally, the sample of Hispanic adolescents was drawn from a relatively low income school. Additional research should examine whether school context is a factor in predicting anxiety and coping.

Although there were many significant correlations among the coping scales for gender and race, the strength of the relationships were relatively small to moderate for humor and religious coping. Moreover, these results do not indicate which aspects of humor and religious coping are beneficial or negative. Additional research should uncover which aspects of humor and religious coping are helpful as this study examines these variables in a general way, leaving out important aspects of the constructs used in everyday life. Also, these results should be interpreted with caution as the relationships were correlational which utilized a larger cross-sectional sample at two consecutive time

points. Thus, further replication is needed within other longitudinal samples of diverse adolescent youth, in order to assess how other third variables affect these results.

Finally, this study did not match adolescents when conducting the longitudinal results. There was only a small number of adolescents who participated at one time point. Although, the number of new adolescents is very small, changes in coping choice and anxiety could be a result of new participants or because the participants at large developed more mature repertoires of coping strategies. An alternate interpretation for differences in coping choice and anxiety at Time 1 (2007) compared to Time 2 (2008) may be that something changed in the world or society that influenced these adolescents on a macro level. This ecological view is important when determining all levels that influence adolescent development.

Future Research

There are many interesting areas of research that can build upon the present study. For example, a future study should utilize multiple informants of adolescents' internalizing stress including, parent and teacher report. Also, a future study should examine the impact of parents' internalizing symptoms on adolescents' coping and internalizing symptoms. This will enable researchers to examine internalizing symptoms within the surrounding family context to more adequately understand pathways of risk and resiliency. Future research studies that incorporate similar modeling will also help to examine multilevel and systems principle of developmental psychopathology. Additional future research may also extend this study by examining a full range of coping styles (e.g. instrumental and emotional social support) by specific anxiety disorders. Examining a fuller range of internalizing symptoms and coping mechanisms may illuminate additional gender and ethnic models of risk and protective factors.

Another future direction may be to examine age differences in order to more accurately understand how developmental processes shape differences across gender and race. This developmental principle of developmental psychopathology is important when examining how coping strategies evolve from immature to mature and focused coping typologies. In contrast, other research should extend beyond the individual self in order to assess cultural and societal changes that occur which may influence changes within these adolescents' repertoires of coping strategies. Utilizing an ecological framework, this future study can comprehensively assess how nature and nurture influence coping choice and anxiety.

Chapter 8

CONCLUSION

The current study yields important implications for mental health prevention programs in schools, by particularly focusing on helping girls turn to humor rather than venting emotions or denial. Furthermore, an effective program should help youth decrease non-productive coping strategies, while also increasing productive coping strategies for reducing stress and ease anxiety, such as humor. Mental health delivery in schools cannot be uniform across sub-populations of youth. For example, a beneficial approach may be to specifically target mid adolescent females who have been shown to use both productive and non-productive coping strategies to deal with their high levels of anxiety.

A conclusion drawn from this study is that differential protective factors exist, such as humor, that buffer against negative risk outcomes for girls. However, another conclusion is that girls are also more at risk because they are more likely to draw upon other emotion-focused coping styles, such as venting emotions and denial. In the context of school based prevention, it is therefore particularly important to help adolescent girls become cognizant of the role coping can play in reducing their anxiety. Increasing this awareness for all youth has important implications for how they are able to respond to difficulties in their lives to promote resilience for their future within and beyond school based settings.

Another conclusion drawn from the results of this study extend to the use of religious curricula in adolescent coping interventions. In this study religious coping predicted lower levels of anxiety for Caucasian youth. Interestingly, African American youth used higher levels of religious coping than the other racial groups at both time points. Nevertheless, the results of this study indicate that youth are using religious coping, in which certain aspects may be more helpful for different groups. Therefore, communities, youth organizations and faith based groups should join together in efforts to help adolescents incorporate aspects of religion into their daily lives. In terms of school based interventions, aspects of transcendence may be appropriate to teach in schools that are not faith based. For example, transcendence may be a helpful tool for adolescents to understand how there is meaning for their lives beyond the present moment. Another example is performing service in their community in which adolescents are giving back to others, which may provide similar aspects of social support that is received within the church community. Overall, it is important to challenge researchers to comprehensively assess one's religious faith, in order to understand which aspects of religion are helpful for youth coping with stress.

These results underscore the importance of considering both race and gender differences when exploring the relationship between coping and adolescent problem behaviors. Overall, this study contributes useful information on risk and protective factors developed over time, as well as a positive view of culture and gender in relation to anxiety and coping resources. The findings drawn from this community based sample implicate that a prevention program should apply primarily to youth in secondary schools, who may not yet show clinical levels of anxiety but show high levels of anxiety symptoms. Moreover, a universal prevention program can be useful in helping adolescents see themselves as "active agents" in their ability to employ a range of

productive coping strategies to reduce stress, thereby fostering personal agency and a sense of control in their lives.

Developmental psychopathology offers an appropriately integrative framework coupled with a multidisciplinary perspective that helps researchers work together with various service personnel in schools, communities and families that can create beneficial interventions for youth experiencing internalizing distress. The findings from the present study also support the view that all humans have needs and are vulnerable, and thus possess both risk and protective factors. Therefore, psychologists must take this into account when creating counseling programs for adolescents. This is specifically important for understanding risk and protective factors across ethnic groups, as well as, differential pathways of risk outcomes for boys and girls.

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