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Minority stress and the well-being of sexual minority college students viewed through the lens of a (bio)ecological model of human development

R. M. Johnson
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Minority stress and the well-being of sexual minority college students viewed
through the lens of a (bio)ecological model of human development

by

R.M. Johnson

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

Major: Education (Educational Leadership)

Program of Study Committee:
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Iowa State University

Ames, Iowa

2005

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has met the dissertation requirements of Iowa State University

Signature was redacted for privacy.

Major Professor

Signature was redacted for privacy.

For the Major Program

For my mother.

A promise.

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ABSTRACT

Minority stress comes from “the juxtaposition of minority and dominant values and the resultant conflict with the social environment experienced by minority group members” (Meyer, 1995, p. 39). Because minority stress is additive to general stressors that are experienced by all people, stigmatized people must accomplish an adaptation effort above that required of similar others who are not stigmatized. Using Bronfenbrenner’s bioecological systems theory of human development as a guiding framework, this study explored the key environments in sexual minority college students’ developmental trajectories that contributed to or buffered minority stress(ors). As the results of this study show, the adverse mental health outcomes of minority stress(ors) can lead to psychological distress and suicidality. These outcomes have major implications for sexual minority college students in their persistence toward a four-year degree. This study uses Structural Equation Modeling (SEM) to test a hypothesized causal model for contextual factors that contribute to or protect against minority stress for sexual minority college students.

CHAPTER 1

INTRODUCTION

“No society can long sustain itself unless its members have learned the sensitivities, motivations, and skills involved in caring for other human beings.”

Urie Bronfenbrenner

After he told his seventh grade classmates that he was gay, they referred to him routinely as "faggot" and began to hit him and spit on him. He was subjected to a mock rape in a science lab by two of his classmates, who told him that he should enjoy it; twenty other classmates looked on and laughed. He attempted suicide at the end of his eighth grade year. In high school, the abuse worsened. He was attacked several times in the school bathroom and urinated on during at least one of the attacks. When he took the bus to and from school, other students regularly called him "fag" and "queer" and often threw objects such as steel nuts and bolts at him. In the ninth grade, he again attempted suicide. The next year, he arrived at school early one day and was surrounded by eight boys, one of whom kicked him in the stomach for five to ten minutes while the others looked on and laughed. Several weeks later, he collapsed from internal bleeding caused by the attack. He left school in the eleventh grade.

(Hatred in the Hallways, retrieved from: www.hrw.org/reports/2001/uslgbt/Final-06a.html)

Young adulthood (ages 18-22) is an important and vital period of human development. For young adults who are members of a socially stigmatized group (i.e., marginalized based on race/ethnicity, sexual orientation, religion, etc.), the events, supports, and environments to which they are exposed during this developmental period can have a significant impact toward cultivating positive or negative self-esteem, healthy or unhealthy mental well-being, and successful or unsuccessful adjustment to adulthood. If an affirming foundation is not established, a negative life trajectory and stagnated personal growth may result.

Lesbian, gay, and bisexual (LGB) youth must transition through young adulthood within a society that conveys rejection, elimination, and condemnation of their sexual

orientation. This message is even more resounding for sexual minority youth who grow up in rural areas. Away from large urban and major metropolitan areas, LGB rural youth have little to no access to positive sexual minority role models and LGB information resources. What occurs during this critical period of development, the decisions made, and the support (or lack of support) received from family, peers, teachers, and society may have fundamental implications for the mental welfare of sexual minority youth.

Problem

Research has shown that sexual minority individuals, compared with those who are heterosexual, have higher rates of major depression, anxiety, substance abuse, suicide attempts and completions, and risky sexual behavior (D'Augelli, 2002; Meyer, 2003). While these differences are not great, they are notably consistent across studies (Cochran & Mays, 2000a, 2000b; Gilman et al., 2001; Mays & Cochran 2001; Sandfort, De Graff, Bijl, & Schnabel, 2001). In addition, sexual minority youth from rural areas lack many of the resources (e.g., informational resources, social networks, and role models) that are available to sexual minority youth in large urban areas (Sears, 1991).

Once identified (or ascribed an identity) as a sexual minority youth, many of these youth experience harassment, discrimination, and abuse in most of the environments in which they interact. Because a number of sexual minority youth are coming out at earlier ages, the time period for abuse and harassment is increasing (Broido, 2000; D'Augelli & Hershberger, 1993). In 1998, the median age for coming out was 13; compare this with the median age of 20 in 1979 (Savin-Williams, 1994). One can see that today there are an additional seven years of potential victimization with which a sexual minority youth may

have to contend, and all within what is already considered a difficult developmental time, the context of adolescence.

Furthermore, away from home environments and high school harassment (Hatred in the Hallways, 2001) sexual minority youth attending college continue to face discrimination and harassment in the campus environment (e.g., Evans & D'Augelli, 1996; Evans & Rankin, 1998; Evans & Wall, 1991; Rankin, 2003). Particularly problematic for sexual minority college students is their rate of retention. Sherrill and Hardesty (1994, as cited in Sanlo, 2005), noted that "31% of sexual minority college students left for a semester or longer and 33% dropped out altogether due to harassment on campus" (p. 98). Attending college as a sexual minority student only adds to the level of stress students must contend with in college, which Astin (1998) indicated is increasing for student populations overall.

Purpose

The purpose of this study was to gain an understanding of the environmental factors in the developmental trajectories of sexual minority college students (ages 18-22) from the rural Midwest that affect their mental well-being.

Research Questions

- 1) Do the exogenous variables of family support, LGB community involvement, college campus environment, religious emphasis (in the family), sex category, and race/ethnicity have a significant direct effect on the level of minority stress experienced by sexual minority college students?
- 2) Does minority stress have a significant direct effect on the level of psychological distress experienced by sexual minority college students?

- 3) Do the exogenous variables of family support, LGB community involvement, college campus environment, religious emphasis (in the family), sex category, and race/ethnicity have a significant direct effect on the sexual minority college student's level of psychological distress and/or an indirect effect through the mediation of minority stress?
- 4) Does the variable of personal epistemology (sexual minority college student's level of epistemological development) mediate the effects of minority stress on (a) psychological distress, (b) suicidal thoughts, and/or (c) suicidal attempts?
- 5) What are the effects of minority stress and psychological distress on suicidal thoughts and suicidal attempts for sexual minority college students?

Theoretical Framework

Evans and Wall (1991) were among the first to focus on the impact of the college environment on sexual minority college students. Since publication of their groundbreaking text *Beyond Tolerance: Gays, Lesbians and Bisexuals on Campus*, research focusing on the development of sexual minority college students has continued to increase. A growing body of literature has provided information regarding the challenges of sexual minority youth, including suicide risk (D'Augelli, Hershberger, & Pilkington, 2001), coming out to family (Waldner & Magruder, 1999), and college climate for lesbian, gay, bisexual, and transgendered students (Evans, 2002; Evans & Broido, 1999; Rankin, 2003; Waldo, 1998).

Few studies, however, have focused on contextualizing the experiences of sexual minority youth in a systemic manner that concentrates on individuals and their developmental environments. Using Bronfenbrenner's (2001, 2005) bioecological

(formerly published as ‘ecological,’ 1979, 1992) systems theory of human development as a guiding framework in this study, I proposed a causal model of development that focused on sexual minority college students and their environments, specifically, in the rural Midwest. Bronfenbrenner’s theory puts development of the individual in the contexts of the environment in which the individual is embedded and the individual’s own biology is the primary environment that shapes the lens for perceiving contextual experiences. Bronfenbrenner (2005) defined the bioecology of human development as:

The scientific study of the progressive, mutual accommodation, throughout the life course, between an active, growing human being and the changing properties of the immediate settings in which the developing person lives, as this process is affected by the relations between these settings, and by the larger contexts in which the settings are embedded. (p. 107)

Bronfenbrenner developed his theory by altering Lewin’s (1935) landmark equation for behavior:

$B = f(PE)$ in which *behavior* is a function of the interaction between a person and his or her environment.

Bronfenbrenner substituted Lewin’s “B” with a “D” and transformed the formula to focus on development:

$D = f(PE)$ in which *development* is a function of the interaction between a person and his or her environment.

Bronfenbrenner distinguished that “D” refers to the phenomenon of development at a particular point in time. By incorporating the dimension of time and substituting words for symbols, Bronfenbrenner (2005) translated the formula to:

The characteristics of the person at a given time in his or her life are a joint function of the characteristics of the person and of the environment over the course of that person's life up to that time. Thus science defines development as the set of processes through which properties of the person and the environment interact to produce constancy and change in the biophysical characteristics of the person over the life course. (pp. 108-109)

In Bronfenbrenner's (2005) model of bioecological human development, the focus is on the "layers" of the environment, which he identified as microsystem, mesosystem, exosystem, and macrosystem, and the interactions between the individual and his or her environment based on processes that occur in each of these systems. Following is a brief description of each layer (i.e., system) and how the layer provided a framework for this study.

Microsystem. The microenvironment is "a pattern of activities, roles, and interpersonal relations experienced by the developing person in a given face-to-face setting with particular physical and material features and containing other persons with distinctive characteristics of temperament, personality, and systems of beliefs" (Bronfenbrenner, 2005, p. 148). This system is the layer closest to the developing individual and typically includes structures with which the individual has direct contact such as family and school environments. Bronfenbrenner stated that interactions and relationships at this level have the greatest influence and strongest impact on the developing individual. In this study, I used the measured variables of "family support" to represent the microsystem of family, "LGB community involvement" to represent the microsystem of LGB community, "college campus environment" to represent the

microsystem of the college environment, and “religion” to represent the microsystem of family religion in their lives, and examined the impact of these variables on the developing individual with respect to minority stress(ors), psychological distress, and suicidality. I also used the variable of personal epistemology to measure the individual’s level of epistemological (cognitive) development to determine what effect, if any, cognition has on “how” individuals perceive and contend with stressors in their microsystems and macrosystems and the potential subsequent impact of these systems on individuals’ mental well-being.

Mesosystem. The mesosystem comprises the linkages and processes taking place between two or more settings containing the developing person. In other words, a mesosystem is a system of microsystems (Bronfenbrenner, 2005). For example, using the microsystems identified in this study, a mesosystem would be the connection between the two microsystems of “family support” and “LGB community involvement.”

Concentrating on the mesosystem in this study, I explored the relationships between microsystems and whether the influence of one microsystem (e.g., LGB community involvement) can promote or constrain effects of another microsystem (e.g., family support or lack of support) on the individual’s minority stress(ors) and/or psychological distress. For example, if an individual is raised in a family environment that has no level of tolerance for, or acceptance of, a sexual minority identity, can involvement in an LGB community microsystem alleviate some of the potential negative effects of the family microsystem on the individual’s mental well-being?

Exosystem. The exosystem layer encompasses the larger social system in which the developing individual does not necessarily function directly, but in which events may

occur that influence processes (e.g., procedures, courses of action) within a setting that does contain the developing individual. For example, in a study centered on understanding college students with a mixed race identity, Renn (2003) suggested the following processes as examples included in an exosystem that have the potential to impact college students with a mixed race: federal financial aid policy, immigration policy, and institutional policy makers. In this study, potential processes in an exosystem that might influence the development of sexual minority individuals could include: legality of marriage between same-sex couples, university policies with regards to domestic partner benefits, campus domestic partner housing policies, anti-discrimination policies at a partner's place of work, and university anti- or non-discrimination policies. Within the scope of this study, I did not define or measure specific variables for the exosystem layer. In the future, I plan to address the impact of the processes at this level on the LGB individual; however, such examination was beyond the scope of the study.

Macrosystem. Bronfenbrenner (2005) defined the macrosystem as consisting of: The overarching pattern of micro, meso, exosystems characteristics of a given culture, subculture, or other broader social context, with particular reference to the developmentally instigative belief systems, resources, hazards, lifestyles, opportunity structures, life course options, and patterns of social interchange that are embedded in each of these systems. A societal blueprint for a culture or subculture. (pp.149-150)

Bronfenbrenner cited social class, race/ethnicity, and region (rural vs. urban) as examples of this system. In this study, I used the variables of "sex category" and "race/ethnicity" to represent and measure the macrosystem effects on the developing individual. Rurality is

also considered a macrosystem in this study; while it is not a measured variable, it was an eligibility requirement for participation in the research.

Chronosystem. Bronfenbrenner added the chronosystem to his model to account for the temporal changes in the individual's environment, which produce new conditions that affect development. Specifically, the chronosystem accounts for sociohistorical events that occurred over time and their influence on the interactions between developing individuals and the macro-, exo-, and microsystems in which they are embedded. Because the results of this study are cross-sectional and not longitudinal, I cannot measure the influence of the chronosystem at this time.

Figure 1.1 provides an illustration of Bronfenbrenner's bioecological model and the variables identified in this theoretical framework. In addition, the proposed causal model for this study, using the variables identified through the theoretical framework, is outlined in detail in Chapter 3.

Significance of the Study

This study is important because it sought to identify factors within specific contexts that help promote or limit optimal development for sexual minority youth. Identifying potential predictors that affect the mental well-being of sexual minority youth from the rural Midwest will aid in designing public policies, educational programs, and intervention programs that will help lower the threats (e.g., anxiety, depression, and suicide) to the mental health of this population.

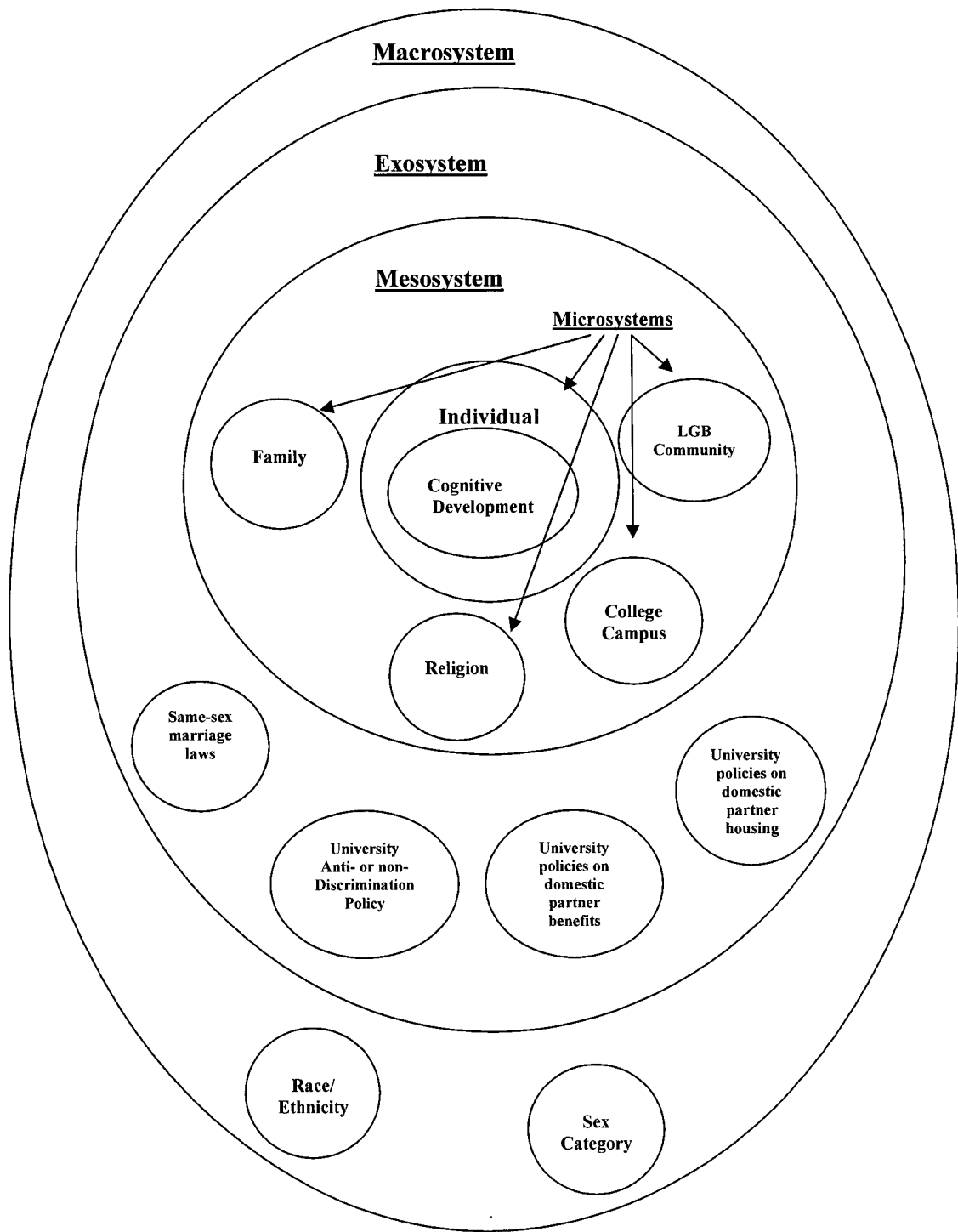


Figure 1.1 Theoretical Model Based on Bronfenbrenner's (Bio)ecological Systems of Human Development

Waldo, Hesson-McInnis, and D'Augelli, (1998) noted that several researchers have hypothesized psychological distress results in LGB populations from negative life experiences based on sexual orientation, but rarely has this hypothesis been examined empirically and in youth populations. The intent of this study was to contribute an empirically tested model focusing on the environmental contributors to minority stress(ors), psychological distress, and suicidality for sexual minority youth in rural areas.

Definitions of Key Terms and Acronyms

This section provides definitions for key terms and acronyms used in this study. Some terms will be used interchangeably throughout the study and these are also noted here.

LGB – lesbian, gay, bisexual, used interchangeably with sexual minority.

Minority Stress – Psychosocial stress derived from minority status (Meyer, 1995).

Psychological Distress – defined for the purpose of this study as comprised of one's level of anxiety and level of depression.

Rurality – For the purpose of this study, rural is defined as living in an area with a population under 100,000. Rural was defined rather broadly for the scope of this study because of the large number of small cities, rural areas, and farms in the Midwest region of the country. This definition, however, excludes major urban and metropolitan areas in the Midwest such as Des Moines, Iowa; Omaha, Nebraska; and Kansas City, Missouri.

Suicidality – the potential for one to take his or her own life.

Sexual Minority – any individual who does not identify as heterosexual. Used in this study synonymously with lesbian, gay, and bisexual.

Youth – studies have used a rather broad range of ages to define “youth.”

Some studies have used “youth” to define participants as old as 26 years of age as noted by D’Augelli and Hershberger (1993).

*Note: To provide consistency with the literature, I have used the term youth when referring to traditional age college students (18-22 years-old) in this study.

Victimization - “A term that encompasses a range of behaviors from verbal harassment to physical assault” (Waldo et al., 1998, p. 308).

Summary

This study informs educators and policy makers by identifying environments in the micro- and macrosystems that systemically contribute to the positive or negative well-being of sexual minority college students. Identification of these environments provides insight into the developmental trajectory of sexual minority youth from the rural Midwest, toward a healthy or unhealthy adjustment in adulthood. Furthermore, it helps to identify where resources can best be used toward promoting positive mental health outcomes and developing resiliency in the face of abuse, harassment, and minority stressors.

Chapter 2 presents an overview of the conceptual and empirical research that provided the theoretical framework for the causal model that was tested in this study. To provide a general developmental understanding of the sexual minority youth in this study with regard to a sexual minority identity, the chapter begins with a review of three seminal models of LGB identity development. Development is unique to each individual; for that reason, not all of the participants in this study will identify with any or all of the sexual minority identity development models presented. The models, however, provide a

foundational and theoretical understanding of some of the common themes and issues facing individuals who are on a developmental path toward a sexual minority identity.

Following the review of the LGB identity development models, I discuss and present research focusing on sexual minority mental health and stress, and the potentially devastating outcomes (e.g., suicide, anxiety, and depression) that affect sexual minority youth based on the stigmatization of a sexual minority identity. Subsequent to the review of the literature on mental health and stress, I explain epistemological (cognitive) development, how it can be measured and was measured in this study, and its relevance to psychological distress for sexual minority youth. In the final sections of Chapter 2, I review the literature on sexual minority youth for each of the micro- and macrosystems identified; specifically, 1) religious (emphasis) environment, 2) abuse and harassment in the college campus environment, 3) family support or lack of support, 4) involvement in an LGB community, 5) rurality, 6) race/ethnicity, and 7) sex category.

In Chapter 3, I describe in detail the methodological approach used in this study, philosophical assumptions, theoretical model and hypothesized relationships, participants and sample, statistical power and sample size, data collection procedure, variables and instrumentation, data analysis procedure, design issues, delimitations, and limitations.

In Chapter 4, I provide the results of the data analyses. Specifically, I discuss the hypothesized model, the evaluation of the model, the revisions to the model based on modification indices and goodness of fit tests, the final estimation of the model, and the decomposition of the total effects of the exogenous variables on the endogenous variables. In closing the chapter, I answer each of the research questions defined in Chapter 1, based on the results of the data analyses.

The results of the research are reviewed and examined in Chapter 5. Based on the results of this study, implications are drawn for theory and research, and suggestions are presented for future studies. As a final thought, the issues surrounding the concept of the sexual minority individual as victim versus resilient actor are summarized. The chapter closes with a summative conclusion of the study.

CHAPTER 2

LITERATURE REVIEW

"I refused to mentally associate myself with the gay people that we'd been warned about. They were doomed to burn in Hell. I believed all the warnings, I learned to hate the disgusting perverts also. It seemed impossible for me to be one of them... I knew I could not kill myself because suicide was a sin. I fantasized about it, though. Maybe I could slit my wrists and pray for forgiveness as my life flowed down the drain. But I was never brave enough to carry out any plan. Most nights I cried in my pillow as I prayed for death... I am a 19-year-old college student. I am disabled. I am gay. And I am a Christian." ...Travis
(Retrieved from: www.fsw.ucalgary.ca/ramsay/gay-lesbian-bisexual/2a-suicide-gay-bisexual.htm)

When proposing and testing a causal model such as the one introduced in this study, it is imperative to outline a strong theoretical base for the hypothesized model and relationships among variables. In this chapter, I review the literature and provide a rationale for each variable included in the hypothesized model focusing on the microsystems and macrosystems in the developmental trajectories of sexual minority college students and the impact of these systems on their mental health.

The review of literature in this chapter is divided into a number of subsections. In the first section of this chapter, I review three of the most commonly cited models for LGB identity development and those most often discussed in higher education student development courses (Cass, 1979, 1984; D'Augelli, 1994; McCarn & Fassinger, 1996). Reviewing these models provides a foundation for understanding the sexual minority identity development processes for the participants in this study. Each of these models provides a framework for how a sexual minority individual negotiates and subsequently comes to terms with a stigmatized sexual identity. Following an examination of sexual minority identity development, the next section addresses mental health; specifically,

anxiety and depression, suicidality, and stress. The section opens with an overview of mental health as it relates to sexual minority youth; followed by a subsection that explains the concept of stress, minority stress, and how stress affects the mental and physical well-being of an individual. A discussion and review of the literature linking stress reactions to cognition closes the section.

How individuals appraise stressful events within a given context (i.e., how they make meaning of that event) is influenced by their personal epistemology (also referred to as cognitive development, c.f., Hofer & Pintrich, 1997). The section following mental health and stress provides an overview of personal epistemology, how it can be measured, and subsequently was measured in this study.

In each of the ensuing sections, I provide a review of the research that I have identified and hypothesized as having some bearing on the sexual minority youth's developmental well-being within the micro- and macrosystems of Bronfenbrenner's bioecological theory of human development. These sections include the microsystems of religious (emphasis) environment, college campus environment, family, and LGB community, and the macrosystems of sex category, race/ethnicity, and rurality.

Sexual Minority Identity Development

Research focusing on sexual minority identity development has presented identity development models theoretically grounded in:

The assumption that oppressive contextual influences exert impact on normative developmental processes and attempt to articulate a common sequence of recognizing, accepting, and affirming a stigmatized sexual identity that is unique to lesbians and gay men in the culture at this time. (Fassinger, 1998, p. 14)

Most of these sexual minority identity development models are based in either a psychological or sociological perspective (Levine & Evans, 1991). The psychological models “concentrate on internal changes experienced by individuals as they come to identify as homosexual;” whereas, the sociological models “tend to focus on the impact of community, development of social roles, and managing stigma” (Evans, Forney, & Guido-DiBrito, 1998, p. 91). The majority of the sexual identity development models begin with lack of awareness of same-sex inclinations, proceed through various stages or processes of confusion and acceptance, to identity affirmation and integration of a sexual minority identity into the individual’s life.

In this section, I review three prominent models of sexual minority identity development. The first model discussed, Cass’s (1979, 1984) model of homosexual identity formation, is predominantly from a psychological perspective. The second model, D’Augelli’s (1994) lifespan model portrays sexual identity development through a sociological lens (i.e., the impact of one’s environment). The final model reviewed in this section, McCarn and Fassinger’s (1996) inclusive model of lesbian, gay, and bisexual development, represents sexual minority development as both internal (the individual) and external (group membership).

Cass’s (1979, 1984) Model of Homosexual Identity Formation

Cass’s model was one of the first sexual identity models to be tested empirically with a measure of developmental stages and it remains one of the most cited and widely used models in sexual identity development research. Cass (1979) proposed six developmental stages (see Table 2.1) in which an individual become increasingly tolerant of a homosexual identity. Cass believed, “all individuals move through [these stages] in

order to acquire an identity of 'homosexual' fully integrated within the individual's overall concept of self" (p. 220). This remains one point of criticism in Cass's model; specifically, that all individuals must go through all of the six stages. Additionally, Cass's model has been criticized because her research sample consisted of gay men, yet she subsequently generalized her findings to lesbians.

Cass's model of development begins with *Stage One: Identity Confusion*, where there is an awareness that the individual's thoughts, feelings, and/or actions might be considered homosexual, which prompts confusion with the individual's previously held identity. Arriving at this point may have occurred through thoughts, dreams, emotional connections, or behavioral exploration (e.g., kissing someone of the same sex). In this stage, "Who am I?" becomes the burning question" (Cass, 1979, p. 223). Choosing not to explore this part of one's identity leads to identity foreclosure at that time; this is not to say that this stage cannot resurface, and it usually does. In *Stage Two: Identity Comparison*, if the individual does not move to identity foreclosure, the individual accepts the possibility that his/her sexual orientation may be homosexual. At this point, the individual seeks to gather information about what it means to be homosexual, deals with the potential social isolation, and faces incongruities between sense of self and other's concepts of the individual. Identity foreclosure is also an option at this stage. *Stage Three: Identity Tolerance*, marks the move from the possibility of being gay/lesbian to the probability of being gay/lesbian. Individuals in this stage increase contact with the gay/lesbian community, if one is accessible to them. Internally, the individual views him or herself as gay/lesbian, though the individual continues to present externally as heterosexual. A move to the fourth stage requires the individual to see him

or herself as gay/lesbian; if this does not happen, the individual reaches identity foreclosure. In *Stage Four: Identity Acceptance*, there is increasing contact with the gay/lesbian community, which helps to validate and normalize a gay identity as a way of life. Increasing conflict with heterosexuals occurs. At this point, the individual may choose to “come out” to selective individuals. Foreclosure at this stage results if the individual wants to avoid strong negative reactions from heterosexuals; however, if the individual encounters strong negative reactions from heterosexuals, there is movement to the next stage. *Stage Five: Identity Pride*, recognizes incongruence between the individual’s gay/lesbian identity and society’s rejection of homosexuality, which leads to intense pride in and identification with the gay community. Individuals in this stage become angry with the heterosexual norms in society. Continued negative reactions from heterosexuals lead to foreclosure at this stage, while positive reactions from heterosexuals move individuals to the final stage. In *Stage Six: Identity Synthesis*, positive interactions with the heterosexual community lead to a reevaluation of the oppositional stance taken in the identity pride stage, subsequently resulting in a reconciliation between the heterosexual and gay communities. The individual’s sexual identity is now integrated into all other aspects of self and is not viewed as the “only” identity.

Table 2.1

Cass's (1979) Model of Homosexual Identity Formation

Stage	Description
Stage One: Identity Confusion	Awareness of thoughts, feeling or actions that might be gay, lesbian, or bisexual Confusion regarding "Who am I?"
Stage Two: Identity Comparison	Acceptance of possibility of being gay, lesbian, or bisexual Initial gathering of information regarding what it means to be LGB Increasing congruence between one's behavior and self perception Increasing conflict with heterosexuals
Stage Three: Identity Tolerance	Increased contact with LGB community, if accessible Self-concept is LGB, but continues to present oneself as heterosexual (thus living between two worlds) Increasing tolerance of LGB self-concept, but has not achieved acceptance
Stage Four: Identity Acceptance	"Who am I?" is mostly resolved Strong connection with LGB community Increasing conflict with heterosexuals
Stage Five: Identity Pride	Increased pride and identification with LGB communities Anger toward heterosexual community and society heterosexual "norms" Openly discloses identity to gain recognition for LGB individuals
Stage Six: Identity Synthesis	Integration of sexual identity as one aspect, not the only aspect of one's identity Identity not hidden, but not focal point Decrease in anger and pride

*Adapted from Levine and Evans (1991).

D'Augelli's (1994) Lifespan Model of LGB Identity Development

D'Augelli (1994) viewed sexual identity development as a social construction; specifically, individuals are shaped by their social circumstances and environments (see Figure 2.1). As a result, D'Augelli noted that identity changes over the course of an individual's lifespan, just as social circumstances and environments change. To achieve a lesbian, gay, or bisexual identity, D'Augelli indicated two actions the individual must

take, 1) the individual must consciously distance him or herself from a heterosexist life, and 2) create a new identity including homosocial and homosexual dimensions.

Influences on identity development come in the form of three interrelated variables D'Augelli referred to as 1) personal subjectivities and actions, 2) interactive intimacies, and 3) sociohistorical connections. Personal subjectivities and actions include sexual behaviors and meanings ascribed to those behaviors, and perceptions and emotions about one's sexual identity. Interactive intimacies center around the influences of individuals with whom the person is close (e.g., family, peers). Sociohistorical connections are "the social norms, policies, and laws found in various geographical locations and cultures and well as the values existing during particular historical periods" (Evans, et al., 1998, p. 95).

Within the three contexts mentioned above, D'Augelli (1994) posited six interactive processes that affect sexual minority development. These processes do not occur sequentially as in Cass's (1979) stage model, but rather a process takes precedence depending upon the social and cultural context in which the individual is embedded. There is no progression through stages; however, there is an internal degree of progression for each process. The processes are 1) exiting heterosexual identity, 2) personal LGB identity status, 3) social identity, 4) offspring status, 5) intimacy status, and 6) entering a LGB community. While D'Augelli suggested that the environment and cultural contexts of the individual have a strong influence over development, he also pointed out that individuals have an impact on their own development.

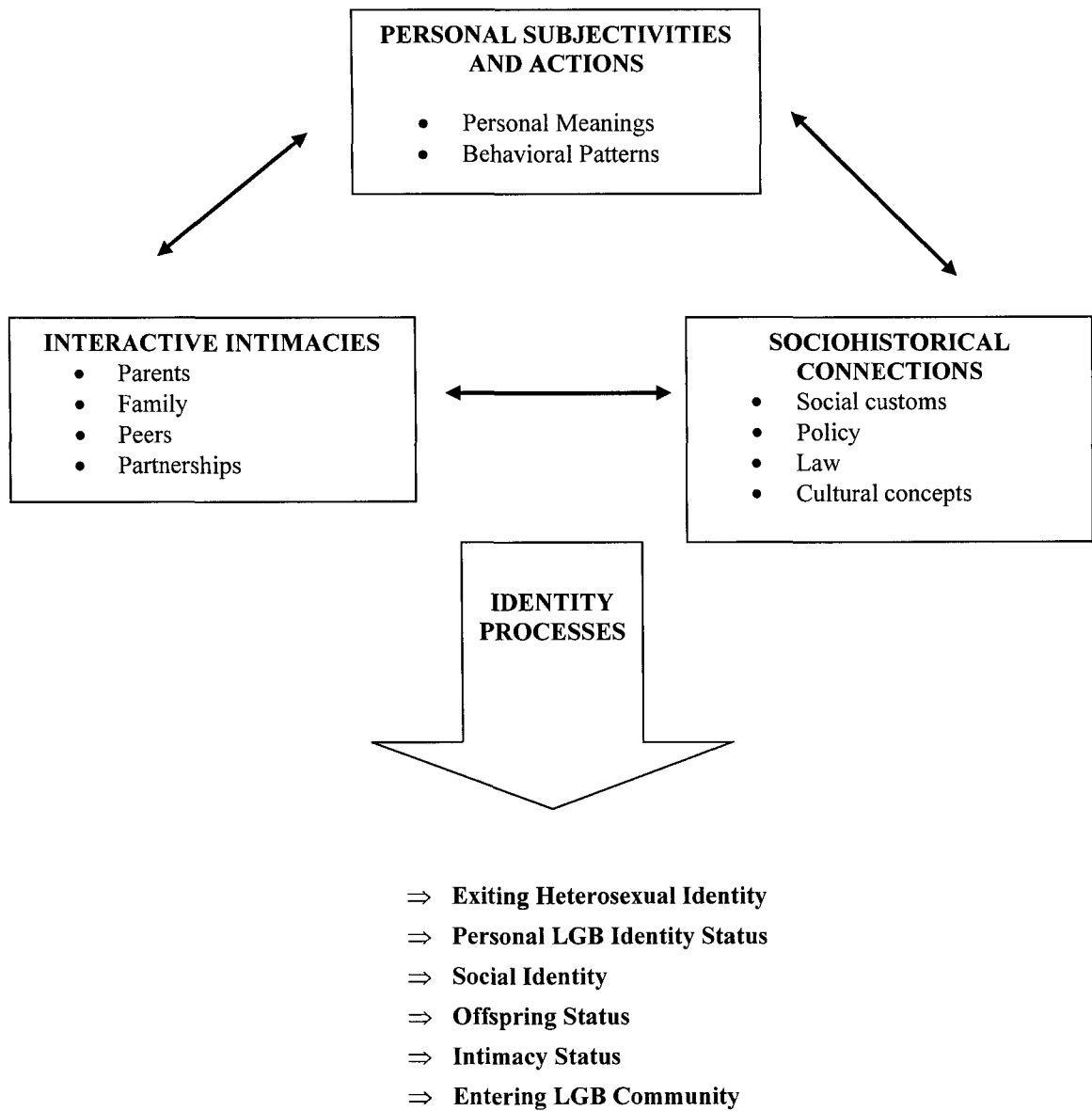


Figure 2.1 D'Augelli (1994) Lifespan Model of LGB Identity Development

McCarn and Fassinger's (1996) Model of LGB Identity Development

Drawing from the assertion that LGB identity development exhibits a critical distinction from other minority identity development processes (e.g., race, ethnicity, and

gender) (Wall & Evans, 1991), in that it is usually not visible to oneself and others, McCarn and Fassinger (1996) noted two distinct processes that an LGB person must negotiate simultaneously; personal and social identities. Noting that previous models suggested that developmental maturity is achieved with some level of “outness,” McCarn and Fassinger considered the social realities of individuals who are compelled to maintain privacy for contextual reasons. For example, Fassinger (1998) indicated, “LGB individuals who are members of racial/ethnic, religious, or occupational groups in which homophobia is especially virulent are likely to experience strong pressure to hide their identities in order to maintain needed and valued ties to those groups” (p. 16).

As a result, McCarn and Fassinger (1996) suggested a developmental model (see Figure 2.2) that is more “inclusive of demographic and cultural influences and less reliant on identity disclosure as a marker of developmental maturity” (p. 16). The model distinguishes between two separate (but reciprocal) processes of identity formation; 1) an internal individual process of awareness - labeled (I), and 2) identification regarding group membership and group meaning – labeled (G). Each of these two processes follows a four-phase sequence, preceded by non-awareness. The sequence of phases starts with 1) awareness, followed by 2) exploration, 3) deepening commitment, and finally 4) internalization/synthesis. At the awareness phase, one might experience feeling different (I) or recognize the existence of different sexual orientations (G). In the exploration phase, one might explore strong erotic feelings for same-sex people (I) or one’s position within a LGB community (G). For the deepening commitment phase, one is likely to experience self-knowledge about choices of sexuality (I), or increasing involvement within the LGB community with an awareness of sexual minority oppression (G).

Finally, in the internalization/synthesis phase one internalizes love for same-sex people into one's overall identity (I) or identity as a member of a minority group (G). McCarn and Fassinger (1996) indicated that because there are two branches to the model; an individual could be at different phases in each branch.

Individual Sexual Identity (I)

Group Membership Identity (G)

1. Awareness

*of feeling different

*of existence of different sexual orientations in people

2. Exploration

*of strong/erotic feelings for same sex people or a particular same sex person

*of one's position regarding gay people as a group (both attitudes and membership)

3. Deepening/Commitment

*to self-knowledge, self-fulfillment, and crystallization of choices about sexuality

*to personal involvement with a reference group, with awareness of oppression and consequences of choices

4. Internalization/Synthesis

*of love for same sex people, sexual choices into overall identity

*of identity as a member of a minority group, across contexts

Figure 2.2 McCarn and Fassinger's Inclusive Model of Lesbian/Gay Identity Formation
*Source: Fassinger, 1998

The preceding LGB identity development models (Cass, D'Augelli, and McCarn and Fassinger) provide descriptions of how individuals may come to terms with a same-sex sexual orientation identity. It is evident that the developmental process that each of these models depicts can be difficult and at times traumatic for the individual going

through this experience. As a result, the process of coming to terms with a non-heterosexual identity in a society where heterosexuality is considered the “norm” can take a toll on one’s physical and mental well-being.

Sexual Minority Mental Well-Being

It was not too long ago that being a gay man, lesbian, or bisexual person was considered a pathology; an illness. In recent years, this conceptualization has changed from an illness perspective (i.e., being non-heterosexual as the problem) to an affirmative perspective that “non-heterosexual people are normatively different; heterosexism is the problem” (Garnets & Kimmel, 2003, p. 647). In the medical realm, no longer is a non-heterosexual orientation pathologized with an assumption that the sexual minority individual must be mentally ill. Despite this retraction linking sexual minority people with pathology, the mental well-being of sexual minority individuals continues to be affected by the persistent societal stigmatization of a non-heterosexual identity.

To say that the process of coming to terms with a sexual minority identity is not an easy one is an understatement. Meyer (1995, 2003) posited that in our society, sexual minority status leads to stigma-related stressful life events (e.g., victimization, abuse, and harassment) and taking on a sexual minority identity as a member of a distinct and stigmatized group. The repercussions of and stress from a stigmatized and marginalized identity can lead to poor mental health that includes major depression, anxiety, and suicidality (Cochran, 2001; Cochran & Mays, 2000a, 2000b; D’Augelli & Hershberger, 1993; Fergusson, Horwood, & Beautrais, 1999; Lock & Steiner, 1999; Mays & Cochran, 2001; Meyer, 1995, 2003; Rosario, Rotheram-Borus, & Reid, 1996; Safren & Heimberg, 1999; Vincke, De Rycke, & Bolton, 1999).

“Many factors contribute to the mental health problems of lgb youths, although few studies have directly linked aspects of these youths’ lives to the distress they experience” (D’Augelli, 2002, p. 434). Using a large sample of 542 youths from diverse geographic regions, D’Augelli found that the sexual minority youth in his sample reported more mental health problems than their heterosexual counterparts; specifically, relating to somatization, obsessive-compulsive disorder, interpersonal sensitivity, depression, and psychoticism.

In this study, I examined the participants’ level of mental well-being by measuring psychological distress (using anxiety and depression scales), suicidality (using a questionnaire) and minority stress (using a scale designed to measure specific stressors that relate to LGB individuals).

Major Depression and Anxiety (Psychological Distress)

Cochran (2001) found that relative to heterosexual populations, major depression was consistently higher for non-heterosexual populations. Meyer (2003) also found higher rates of stress-sensitive psychiatric disorders (i.e., anxiety, depression) for sexual minority individuals. Further, Schneider (1991) noted that over half of her sample of gay and lesbian youth had experienced severe anxiety or major depression. While anxiety and depression by themselves are devastating mental health outcomes for sexual minority youth; if left untreated, they have the potential to lead to thoughts of and attempts at suicide (Russell, 2005). In their sample of LGB college students ($n = 70$) from Midwest colleges and universities, Westefeld, Maples, Buford, and Taylor (2001) found that the LGB college students were more depressed, lonely, and had fewer reasons for living than the control group of heterosexual students ($n = 141$).

Suicidality

Dear Family and Friends,

I'm sorry it had to end this way but it was my fate. I couldn't handle life anymore. You see, the reason I ran away before to commit suicide is the same reason I did again. I'm gay. I never wanted to be and I always wished it would change, but it didn't. I wanted to live a normal life but God created me this way for some reason and there was nothing I could do to change it. I was born this way, believe me I would not choose this way of life for I know how hard and unaccepted it is. I'm painfully sorry you all had to deal with this but I couldn't deal with it. This way I could live a peaceful afterlife instead of a life of fear, agony, and manic depressiveness. Please realize I did not want to hurt anyone I just wanted to end my own pain. I love you all dearly and will someday see you all again hopefully with your understanding hearts and souls. I just hope God will bring me to heaven.

Love always and eternally,

Bruce

(Retrieved from: www.youth-suicide.com/gay-bisexual/news/deadly.htm#bruce)

When examining the lives of sexual minority college students, the most critical factor to understand is how the sexual minority college student gets to the point of considering (and in some cases attempting and completing) suicide. What can be done to prevent this from happening? What elements in the individual's environment and/or cognitive development contribute to suicidality? Are there any protective factors that help alleviate or buffer the emotional distress that drives the individual to this state of hopelessness and despair?

Gibson (1989, as cited in D'Augelli & Hershberger, 1993) stated "that most suicide attempts by lesbians and gay men occurred in their youth, that lesbian and gay youth are twice to three times as likely to commit suicide than their heterosexual peers, and that lesbian and gay male suicide may constitute up to 30% of all completed youth suicides" (p. 424). Gibson's findings have been somewhat controversial, with researchers pointing out that his data came from organizations directly involved with mental health issues and as a result may include individuals more likely to report

suicide attempts. However, since Gibson's report on youth suicide, there have been a number of studies focusing on suicide rates for sexual minority youth that have consistently found high rates of sexual minority suicidality (D'Augelli, 2002; D'Augelli, Hersberger, & Pilkington, 2001; Grossman & Kerner, 1998; Hammelman, 1993).

D'Augelli and Hershberger (1993) found in a sample of 194 sexual minority youth that only 40% responded that they had never thought about killing themselves, in contrast to 42% (81) who stated that they had made at least one suicide attempt. In a follow-up study, D'Augelli, Hershberger, and Pilkington (2001) discovered that self-labeling with a sexual minority label, gender atypicality, low self-esteem, and substance abuse were associated with suicide risk. Schneider, Fabrerow, and Kruks (1989) indicated that young gay men who attempted suicide were those who identified their same-sex attractions at an earlier age, recognized their feelings earlier, and had their first relationship sooner than their counterparts who had not attempted suicide.

How "out" a sexual minority youth is to family and friends may also contribute to how likely a sexual minority youth is to take his or her life. D'Augelli and Hershberger (1993) found, "the less 'out' a child was to his or her parents correlated significantly with a likelihood to contemplate suicide...the more 'out' the youth, the less suicidal thoughts" (p. 437). Given this knowledge, it would appear that family and social support would be extremely important for sexual minority college students.

D'Augelli and Hershberger (1993) identified the following predictors for suicide attempters within their LGB sample:

- 1) for males and females, loss of friends due to disclosure,

2) for females, attendance at a gay bar,

3) for males, mental health issues related to low self-esteem, problems with alcohol, and hostility, and

4) for females, mental health issues related to low self-esteem, problems with depression, somatization, obsessive compulsiveness, interpersonal sensitivity, and depression.

What leads to suicide, depression, anxiety, and poor mental health? Some experts suggest a biological predisposition (e.g., Turecki, 2001; Verberne, 2001). In many cases, however, it is the stress experienced from a stigmatized LGB identity (whether the identity is accepted or merely perceived by others) that has a direct impact on the individual's mental well-being and can lead to the outcomes of anxiety, depression, and in very severe instances, suicide. Dohrenwend (2003, as cited in Meyer, 2003) stated that "stress...is concerned with the external events or conditions that are taxing to individuals and exceeds their capacity to endure, therefore having a potential to induce mental or somatic illness" (p. 675).

Stress

Stress has an effect on the sympathetic nervous system and can cause the body to respond in a variety of ways; physiological, emotional, and/or behavioral, all of which may have minor to severe implications for the sexual minority college student's academic performance, physical health, and/or emotional well-being (Girdano, Everly, & Dusek, 2001).

Stress defined. Hans Selye is considered the father of modern stress research (Girdano et al., 2001; Lerman, & Glanz, 1997). Selye (1976) defined stress very simply

as a response elicited by an external event. Describing stress, Selye (1976) suggested two types of stress; good stress, which he called *eustress*, and bad stress, which he labeled *distress*. Whether stress is good or bad, *eustress* or *distress*, both have an impact on one's body and mind by affecting the sympathetic nervous system. It is important, both physiologically and psychologically for the body and mind to work in harmony; this concept of the body and mind interaction is often referred to as psychosomatic (Girdano et al., 2001). This definition led to the term psychosomatic disease, which is described as being a result of excess emotional arousal, maladaptive coping, and chronic distress (Girdano et al., 2001). To further explain this phenomenon, some emotions such as anxiety, anger, fear, and frustration can increase the body's susceptibility to organic disease. Psychosomatic diseases established a link between emotions and how they could affect the body, resulting in physical ailments (Girdano et al., 2001). According to the psychosomatic phenomenon, distressing emotions inhibit the body's ability to protect itself from disease.

One of the foremost theories regarding stress and how it affects the body is Selye's general adaptation syndrome (GAS), also referred to as the biological stress syndrome (Girdano et al., 2001; Lerman, & Glanz, 1997; Selye, 1976). Figure 2.3 depicts the various stages of Selye's GAS theory. Selye believed that everyone has a homeostatic level, where the body functions at a balanced state, and to stay at this level one needs to balance the positive and negative stressors. When a person is confronted with a stress event, there will be a slight dip in the homeostatic level and then a rise above the homeostatic level to confront that event. This is the first phase of the GAS; it is called the *alarm phase*. The second phase is the *resistance phase* where the body confronts the

stress event; this takes place above the homeostatic level. The final phase is divided into two categories, *recovery phase* or *exhaustive phase*. The recovery phase takes between 24 to 36 hours; the more an individual can stimulate the parasympathetic nervous system, the closer the recovery can be to 24 hours. If there is a recovery phase then there is no exhaustive phase. However, if the individual does not go into the recovery phase or complete the recovery phase the individual will eventually find him or herself in the exhaustive phase, which increases his or her risk of disease. One cause of high blood pressure, for example, results when an individual's body has not returned to the homeostatic level. If one continues to function above the homeostatic level, poor mental health and well-being may result.

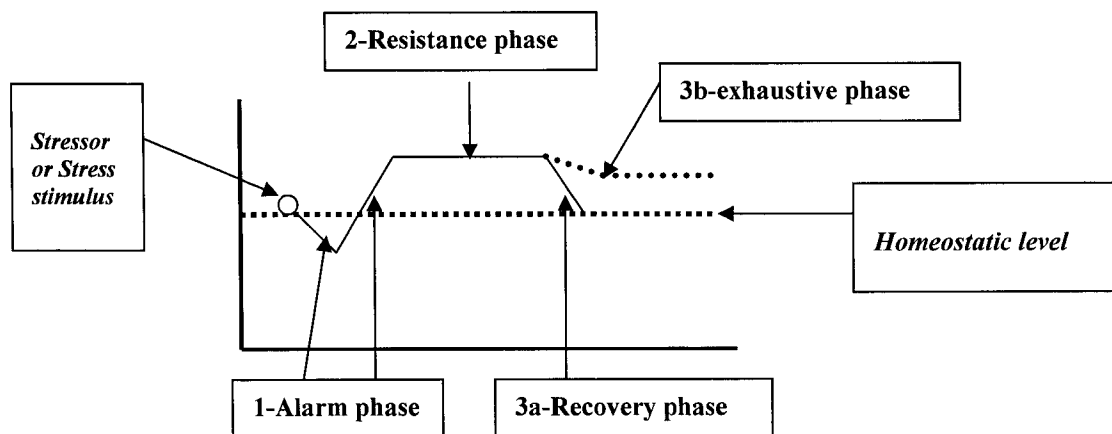


Figure 2.3 Selye's General Adaptation Syndrome

Selye often referred to stress as the disease of adaptation (Girdano et al., 2001). His focus on the body and mind's ability to adapt, to work in a psychosomatic environment, led to a second theory on stress, which is referred to as the adaptive energy theory (see Figure 2.4).

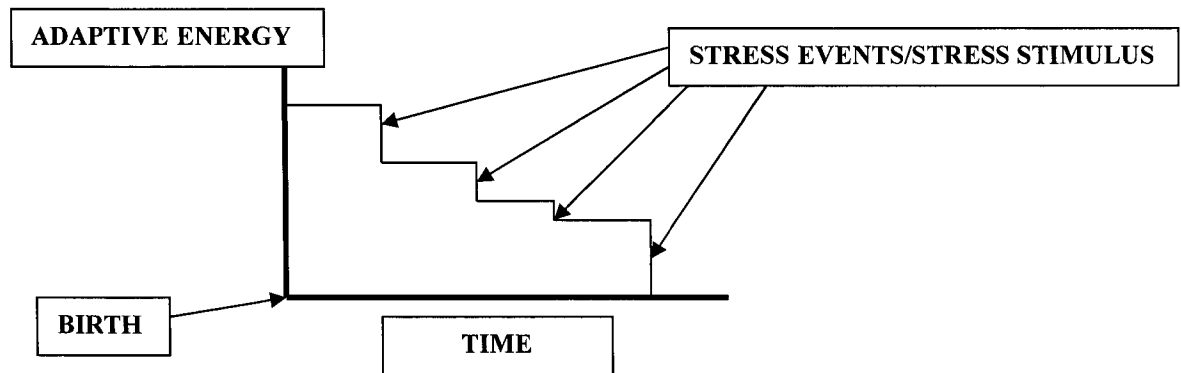


Figure 2.4 Selye's Adaptive Energy Theory

According to Selye (1976), each person is born with a finite amount of adaptive energy. When an individual runs out of his or her adaptive energy, he or she dies. Selye believed that individuals could not replenish their adaptive energy, but may affect the rate at which this energy is used up. How does this theory of adaptive energy impact marginalized groups; specifically sexual minority individuals, who are continually presented with societal messages (implicit and explicit) that they must adapt to the majority heterosexual norms?

Minority Stress. Through meta-analyses, Meyer (2003) found that LGB persons had a higher prevalence of mental health disorders than heterosexuals, which he concluded was a result of minority stress. Meyer (1995, 2003) posited this concept of *minority stress* as an explanation for understanding the excess in prevalence of mental disorders, noting that stigma, prejudice, and discrimination create a hostile and stressful social environment that causes mental health problems. Minority stress is chronic and comes from “the juxtaposition of minority and dominant values and the resultant conflict

with the social environment experienced by minority group members” (Meyer, 1995, p. 39). Meyer (1995) found that experiences and feelings specific to a stigmatized identity, such as internalized homophobia, and actual experiences of discrimination and violence contributed to minority stress, which led to adverse mental health outcomes.

While continuing to develop the concept of minority stress, Meyer (2003) noted that researchers’ underlying assumptions have been that minority stress is:

- a) unique – that is additive to general stressors that are experienced by all people, and therefore, stigmatized people are required an adaptation effort above that required of similar others who are not stigmatized;
- b) chronic – that is, minority stress is related to relatively stable underlying social and cultural structures; and
- c) socially based – that is, it stems from social processes, institutions, and structures beyond the individual rather than individual events or conditions that characterize general stressors or biological, genetic, or other nonsocial characteristics of the person or group. (p. 676)

Using psychological theory, stress literature, and research on the health of LGB populations, Meyer (2003) proposed a minority stress model that includes a distal-proximal distinction between stress processes. In his minority stress model, Meyer described minority stress processes based on a continuum from *distal stressors* (i.e., objective events and conditions) to *proximal personal processes* (i.e., subjective events that rely on an individual’s perception and appraisal). The effect of distal processes on an individual are based on the individual’s cognitive appraisal, and become proximal

concepts with increased psychological importance to the individual (Lazarus & Folkman, 1984; Meyer 2003).

For further research exploring the evidence for minority stress, Meyer (2003) suggested two methodological approaches; specifically, within-group processes and their impact on mental health, and studies that compare differences between minority groups and majority groups in prevalence of mental health disorders. This research used a within-group methodological approach, as suggested by Meyer, to explore the impact of the sexual minority individual's environment focusing on the microsystems (religious environment, college campus, family, and LGB community) and macrosystems (sex category, race/ethnicity, and rurality) on minority stress(ors) and adverse mental health outcomes (psychological distress and suicidality).

Stress and Cognition. Lerman and Glanz (1997) noted that stress does not affect all people in the same ways; some individuals experience terrible life events yet manage without any psychologically distressing outcomes. Lazarus (1999) believed this result was due to, "the meaning constructed by a person about what is happening that is crucial to the arousal of the stress reaction" (p. 55). The stress reaction one experiences is not in a situation or in the person, but in the transaction between the two, depending upon the meaning (i.e., cognitive appraisal) the person gives to the situation (Goleman, 1979; Lazarus & Folkman, 1984; Weiten, Lloyd, & Lashleu, 1990).

Therefore, since constructing meaning is pivotal to the stress reaction then "how" the individual constructs meaning, the individual's personal epistemology, is of significant importance in helping to explain the responses to stressors that may lead to poor mental health and well-being. If it is through an epistemological lens that meaning is

constructed, one should consider the possibility that personal epistemology is a filter for the impact of stressful events on an individual's mental well-being.

Personal Epistemology

Personal epistemology is an epistemology that concentrates on the psychology of beliefs about knowledge and knowing (Hofer & Pintrich, 2002). An important construct of personal epistemology is how individuals develop their beliefs about knowledge; this process is often referred to as epistemological development. Further defined by Hofer (2002) from a psychological and educational perspective, "the focus of concern among those studying personal epistemology or epistemic cognition is how the individual develops conceptions of knowledge and knowing and *utilizes them in understanding the world*" (p. 4).

Epistemological Development

A significant amount of research has been conducted regarding the college experience and students' cognitive development through college (Astin, 1977; Baxter Magolda, 1992; Chickering & Riesser, 1993; King & Kitchener, 1994; Kuh, 1995; Perry, 1970). Perry's (1970) seminal work on cognitive development led the way for an extensive line of research in this area. Even though Perry's research has been criticized for his use of mostly male participants at a predominantly white, middle to upper class university, it still stands today as a landmark in epistemological development research. Hofer and Pintrich (1997) stated, "Perry's scheme has served as a heuristic for understanding how college students make meaning of their educational experiences and as a platform for multiple lines of research on epistemological beliefs" (p. 90).

Through his research, Perry identified nine positions (referred to as positions rather than stages) of intellectual and epistemological development. Several researchers have grouped these nine positions into four categories (Knefelkamp & Slepitz, 1978; Kurfiss, 1988; Moore, 1994). Table 2.2 lists and describes the four categories and aligns them with Perry's original nine positions.

Table 2.2

Perry's Scheme of Intellectual and Ethical Development (1970) Identified by Categories

Category	Position	Description
Dualism	Positions 1 & 2	Division of meaning into two realms; absolutist, right-and-wrong view of the world. Authorities know the truth.
Multiplicity	Positions 3 & 4	Diversity of opinions and values are recognized as legitimate in areas where right answers are not known. Truth is still knowable. All views are equally valid, no judgment can be made among them, everyone has a right to their own opinion and none can be called wrong.
Relativism	Positions 5 & 6	A shift from a dualistic viewpoint of the world to one that is relative, individuals now realize that they are active makers in constructing their own meaning. Knowledge is relative, dependent upon context. Here individuals begin to weigh their own commitments to knowledge.
Commitment within Relativism	Positions 7, 8, & 9	Individuals make affirmations, choices, and decisions about values, careers, and relationships in the awareness of relativism. Note: These positions are not commonly found among college students.

In referring to transition from one position to another, Hofer and Pintrich (1997) following a common theme of Piaget's works, stated, "change is brought about through cognitive disequilibrium; individuals interact with the environment and respond to new experiences by either assimilating to existing cognitive frameworks or accommodating the framework itself" (p. 91).

Just as Gilligan (1982) criticized Kohlberg's (1969) theory of moral development for using entirely male participants and generalizing to both genders, Belenky, Clinchy, Goldberger, and Tarule (1986) questioned Perry's (1970) use of predominantly male participants (only 2 women were included in Perry's results). Interested in whether there was a difference in the themes of knowing as they applied to women, Belenky et al. (1986) conducted 135 interviews with women, using Perry's initial research as a framework. From the interviews, Belenky et al. concluded that women viewed reality and drew conclusions about truth, knowledge, and authority through five different perspectives, referred to as *women's ways of knowing*. The five perspectives Belenky et al. identified as women's ways of knowing are *silence*, *received knowledge*, *subjective knowledge*, *procedural knowledge*, and *constructed knowledge* (see Table 2.3). Belenky et al. concluded that women's ways of knowing were highly intertwined with self-concept (Hofer & Pintrich, 1997). While Perry focused on the nature of knowledge, Belenky et al. focused more on the source of knowledge and truth.

Baxter Magolda (1992), following both Perry (1970) and Belenky et al.'s (1986) research, focused on the gender-related implications of epistemological development. By conducting a longitudinal study involving both men and women college students, Baxter Magolda examined epistemological development and how epistemological assumptions affect interpretation of educational experiences. Through analysis of her data, Baxter Magolda developed the epistemological reflection model, which contains four qualitatively different ways of knowing identified as *absolute knowers*, *transitional knowers*, *independent knowers*, and *contextual knowers* (see Table 2.4). Within three of the four identified ways of knowing, a gender-related reasoning distinction was found.

Women who were identified as absolute knowers displayed a pattern of receiving more often than men, while men who identified as absolute knowers displayed the pattern of mastering more often. The pattern of receiving suggests that women are more private and tend to listen and record more than men who tend to be more public, demonstrative, and challenging in their reasoning. Within the framework of transitional knowers, patterns for women showed they tended to be more interpersonal, use discussion, and resolve uncertainty by personal judgment. On the other hand, men who were identified as transitional knowers were more impersonal, used debate, and resolved uncertainty by logic. Patterns for the independent knowers suggested that women were more inter-individual, while men tended to be individual. By focusing on the nature of learning, Baxter Magolda added another dimension to the study of epistemological development.

Table 2.3

Belenky et al. (1986) Women's Ways of Knowing

Way of Knowing	Description
Silence	Compliance to external authority, passive, voiceless existence
Received Knowing	Ability to hear, but unable to speak in one's own voice, there is only one right answer
Subjective Knowing	Sense of self overcomes reliance on outside authority and replaces it with intuition; source of truth is within oneself.
Procedural Knowing	Reasoned reflection, applying objective, systematic procedures of analysis
Constructed Knowing	Individual views self as participant in construction of knowledge; integration of subjective and objective strategies of knowing

Table 2.4

Baxter Magolda's (1992) Epistemological Reflection Model

Domains	Absolute Knowing	Transitional Knowing	Independent Knowing	Contextual Knowing
Nature of Knowledge	Is certain or Absolute	Is partially certain and partially uncertain	Is certain, everyone has their own beliefs	Is contextual; judge on basis of evidence in context
Role of Learner	Obtains knowledge from instructor	Understands knowledge	Thinks for self, shares views with others, creates own perspective	Exchanges and compares perspectives, thinks through problems, integrates and applies knowledge

Expanding on Perry's (1970) work in another direction, King and Kitchener focused on epistemic assumptions that underlie reasoning (King & Kitchener, 1994; King, Kitchener, Wood, & Davidson, 1989; Kitchener, 1983, 1986). King and Kitchener's research led to the development of a seven-stage model of epistemic cognition entitled the reflective judgment model. According to King and Kitchener (1994), the model focused on "the ways that people understand the process of knowing and the corresponding ways they justify their beliefs about ill-structured problems" (p. 13). A brief explanation of the seven stages of the model describes stage one through three as students not perceiving that knowledge is uncertain, there are no real problems that do not have certain answers. In stage four, students recognize that one cannot know with certainty. In stage five, students believe that what is known is limited by the perspective of the knower. In stage six, students understand that knowing is a process that requires action on the part of the knower. Finally, in stage seven, students believe that

knowledge is in the outcome of the process of reasonable inquiry in which solutions to ill-structured problems are constructed.

Intersections Between the Theories

While each of the theories previously reviewed has its own merits, levels (stages or positions), and specific concentration with respect to cognitive development, they all, however, have three epistemological perspectives in common. Love and Guthrie (1999) referred to the three common epistemological perspectives as unequivocal knowing, radical subjectivism, and generative knowing. To explain these three perspectives, I use the following terminology in place of Love and Guthrie's labels: unequivocal knowing = absolutist; radical subjectivism = relativist; and generative knowing = post-relativist. All of the theories start with epistemological development at the absolutist level. At the absolutist level, the individual views the world in terms of black and white, there are no shades of grey; absolute truth does exist and "knowledge is possessed by authorities" (Love & Guthrie, p. 78). Truth is external and comes from authorities and artifacts (e.g., the Bible, teachers, parents). Love and Guthrie contended that in its pure form this stage may not exist across all knowledge domains; however, fundamental religion would be an example of a knowledge domain where it might exist in pure form. Schraw, Bendixen, and Dunkle (2002), who provided an instrument to measure epistemological beliefs across dimensions of knowing (discussed later in this section), would consider this a naïve level of epistemological development across all five of the knowledge domains they measure in their Epistemic Belief Inventory (EBI). Sexual minority college students who use an absolutist lens to view homosexuality might be dealing with a considerable

amount of stress if their parents (because truth comes from authority figures) hold strong religious beliefs that condemn homosexuality.

The next epistemological perspective (stage or position) in common among Perry, Belenky et al., Baxter Magolda, and King and Kitchener is relativism. In this developmental stage/position, the individual knower moves from an absolute perspective of knowing (truth is absolute, and comes from authorities and those in power) to a world of relativism where truth is uncertain and ambiguous. Within this perspective, Love and Guthrie (1999) explained, “The student experiences a sense of confusion, as if being suddenly thrust into a game without any clear rules to determine right or wrong” (p. 79). Chandler (1975, 1987) and Bendixen (2002) have explored the feelings individuals experience when faced with a change in their epistemological beliefs; what Perry (1970), drawing from Piaget, referred to as *cognitive disequilibrium*. Chandler (1975) referred to this cognitive disequilibrium as *epistemic doubt* and *epistemological loneliness*. Chandler (1975) explained:

There is a gradual dawning of awareness of what *Sarte* (1965) has called a ‘plurality of solitudes’ – that each person’s point of view relentlessly cancels out the viewpoint of another. This potentially ominous and isolative awareness, which *Berger and Luckman* (1966) have characterized as the ‘vertigo of relativity,’ heralds in a growing sense of estrangement from others referred to as epistemological loneliness. (p. 172)

For individuals entering college, the realization that their epistemological beliefs (how they know what they know) are questionable leads to a complexity of emotions and doubts (Bendixen, 2002). Chandler (1975) further stated:

The initial recognition of this uncertainty principle is not, consequently, necessarily equivalent to its whole-hearted acceptance, nor is it at all obvious how one is to cope with let alone take pleasure in, this ultimate relativity. The growing realization is instead typically accompanied by a sense of uneasiness that is hard to shake off. It is this double-edged feature of adolescent emerging social decentering skills, which serves to dampen the enthusiasm with which they sometimes embrace their own newly acquired conceptual accomplishments, to discourage them in their attempts to consolidate their intellectual gains, and at times to entirely derail their subsequent development process. (p. 172)

In the process of negotiating stressors and a sexual minority identity from a relativistic perspective, individuals might encounter differing religious doctrines on homosexuality and struggle with which one is true, and whether there is one that holds ultimate truth or whether they are all true. There is also the issue of multiple messages from peer groups, family, and teachers, all of whom may have differing perspectives on the “truth” regarding a sexual minority identity. In relativism, eventually, “for lack of any way to mediate among alternative explanations or rationales, the student adopts the position that all views are equally valid and that opinions are sources of truth” (Love & Guthrie, 1999, p. 79). Couple this uncertainty about knowledge and truth, with assessing sexual minority stress(ors) through a relativistic lens and the student’s mental well-being has the potential to be in a constant state of chaos.

The final common epistemological perspective among the cognitive development theories presented in this paper is post-relativism. Individuals who experience the world from this epistemological stance come to understand themselves as knowers and agents

of creating knowledge. “Students realize their active role in considering context, comparing and evaluating viewpoints to assess relative merits, and constructing an individual perspective on the issues” (Love & Guthrie, 1999, p. 80). This perspective would be the most beneficial developmental lens through which to assess stressful life events relating to a sexual minority identity, because it provides for agency within the individual.

While each of the four cognitive developmental theories discussed (Perry, Belenky et al., Baxter Magolda, and King and Kitchener) diverges in a different direction beyond post-relativism, all four suggested that it would be rare for an undergraduate student to reach this level of knowing; rather, one is more likely to find this epistemological perspective in graduate students. This argument suggests that most undergraduate sexual minority students are either at the absolutist or relativist level of cognitive development, both of which provide little sense of internal agency in discerning truth and appraisal of minority stressors.

Measuring Epistemological Development

Shifting from a developmental stage (positions) approach to epistemological development, Schommer (1990) believed that Perry (1970) and others using this theory as a basis for their research, fell short in their assertions that epistemology was one-dimensional and developed in a progression of stages or positions. Schommer suggested that personal epistemology was a belief system that was composed of several independent dimensions. Based on this premise, Schommer set out to identify independent epistemological dimensions, and to provide a quantitative method of measuring an individual’s beliefs across a continuum. Using an epistemological questionnaire,

Schommer identified four initial epistemological dimensions; innate ability, certain knowledge, simple knowledge, and quick learning. Schommer refined the four dimensions and hypothesized five epistemological dimensions (see Table 2.5). Each dimension is based on a continuum and stated from a naïve point of view. The dimensions are certain knowledge (i.e., absolute knowledge exists and will eventually be known), simple knowledge (i.e., knowledge consists of discrete facts), quick learning (i.e., learning occurs in a quick or not at all fashion), fixed ability (i.e., the ability to acquire knowledge is fixed), and source of knowledge/omniscient authority (i.e., authorities have access to otherwise inaccessible knowledge). To test the five hypothesized epistemological dimensions, Schommer developed a 63-item questionnaire, using a 5-point scale, designed to measure the beliefs of college students in these areas. Empirical work has typically yielded four out of the five dimensions (all but omniscient authority); certain knowledge, simple knowledge, fixed ability, and quick learning (Hofer, 2001).

Using Schommer's (1990) epistemological questionnaire as a framework, Schraw, Bendixen, and Dunkel (2002) developed a 32-item instrument entitled the Epistemic Beliefs Inventory (EBI) that measured the same five dimensions proposed by Schommer (Bendixen, Dunkel, & Schraw, 1994; Bendixen, Schraw, & Dunkel, 1998). Schraw et al. stated, "Our goal was to develop an instrument that was shorter, measured all five hypothesized beliefs, and was more reliable than other instruments" (p. 263). For the purpose of this research study, the EBI was chosen as the instrument for measuring the participants' epistemological beliefs/development, based on its reputed reliability, validity, and empirical work using all five dimensions. An explanation on the

development and validation of the EBI can be found in Schraw, Bendixen, and Dunkle (2002).

Table 2.5

Schommer's (1990) Hypothesized Epistemological Dimensions

Dimension	Belief In	Description
Source of Knowledge	Omniscient Authority	From knowledge is handed down by omniscient authority to knowledge is reasoned out through objective to subjective means.
Certainty of Knowledge	Certain Knowledge	From knowledge is absolute to knowledge is constantly evolving.
Organization of Knowledge	Simple Knowledge	From knowledge is compartmentalized to knowledge is highly integrated and interwoven.
Control of Learning	Fixed Ability (Labeled Innate Ability in 1989)	From ability to learn is genetically predetermined to ability to learn is acquired through experience.
Speed of Learning	Quick Learning	From learning is quick or not-at-all to learning is a gradual process.

To briefly summarize, the study of personal epistemology has focused on developmental stages or positions with seminal works from Perry (1970), Belenky et al. (1986), Baxter Magolda (1992), and King and Kitchener (1994). The research on epistemological developmental stages has included both qualitative and quantitative components. Researchers Schommer (1990), and Schraw et al. (2002), have developed quantitative methods to measure epistemological beliefs along five specific dimensions, rather than the developmental stages or positions. It is through using the Epistemic Belief Inventory (EBI) that this research will quantitatively identify sexual minority college

students' epistemological developmental perspective, a component of one's own microsystem (Bronfenbrenner, 2005), and test what affect, if any, level of cognitive development has on a sexual minority college student's mental well-being.

Microsystems for Sexual Minority College Students

How individuals perceive their environments and the meanings constructed from experiences and events are filtered through their cognitive appraisal of the event/experience. And distress (Selye's term for negative stress) results from a negative meaning attributed to an event/experience in the individual's environment. Therefore, it is important to look at the specific microsystems (environments) in which the sexual minority college student typically interacts to focus on what influences (or reduces) a negative cognitive appraisal of an event/experience. For many college students, whether heterosexual or sexual minority, these microsystems would include their college campus, family, community of peer support, and religious community (if applicable). In this study, I explored the extent to which these microsystems affect the sexual minority college student's mental well-being. Specifically, for the college campus microsystem, I explored the college campus environment/climate for sexual minorities. For the family microsystem, I explored the overall level of perceived support individuals receive from their families. For the community of peer support microsystem, I assessed the extent to which individuals are involved within an LGB community. For the religious involvement microsystem, I explored the extent to which religion was emphasized in the family home. I hypothesized that individuals who have a supportive family, positive college campus climate for sexual minorities, some degree of involvement with an LGB community, and less family emphasis on religious conservatism will have a healthier mental well-being

than those individuals who attend a college with a non-supportive climate for sexual minorities, no family support, no involvement an LGB community peer group, and a strong family emphasis on religion.

In the following subsections, I review the literature as it relates to each of the microsystems and the representing variables of religious (emphasis) environment, college campus environment, family support, and LGB community involvement.

Religious Environment

Late on the night of Feb. 24, Stuart Matis's mother lay awake in bed, listening to her son pacing his room unable to sleep...A year earlier Matis had told his parents he was gay, and all three, devout Mormons, had struggled to reconcile Matis's homosexuality with the teachings of their church. Matis found little comfort in Mormon doctrine, which regards homosexuality as an 'abominable' sin. A church therapist instructed him to suppress his sexuality or to undergo 'reparative therapy' to become a heterosexual... That night, his mother got out of bed and wrote a letter asking the church to reconsider its position on gay Mormons. Only later would she learn that her son had been up writing his own letter, to his family and friends, explaining why he couldn't continue to live...Early the next morning, Matis drove to the local Mormon headquarters, pinned a DO NOT RESUSCITATE note to his shirt and shot himself in the head.
(Retrieved from <http://www.helpingmormons.org/stuart.htm>)

Often there is a great deal of turmoil for sexual minority youth around conflicting messages regarding religion and sexual orientation (Love, Bock, Jannarone, & Richardson, 2005; Ritter & O'Neill, 1989). In dealing with conflict, many individuals use religion as a successful coping mechanism; however, sexual minority individuals who have turned to religion and spirituality for support in the past might often find that this is no longer an option since there are a number of religious doctrines espousing same-sex relationships as sinful (Coon, 2003).

Ritter and O'Neil (1989) noted, "Commonly accepted scriptural interpretation, custom, doctrinal pronouncements, and historical tradition (Boswell, 1980) have heaped

accusations of shame, contamination, and sinfulness upon the heads of lesbian and gay people that, in turn, have established the framework of society's attitude toward them" (p. 9). Even though some religious organizations have made great strides forward on the way to reexamining church philosophies and doctrines, few have truly welcomed sexual minority people.

An impending doom hangs over the sexual minority youth raised in a family environment where the core family values embrace the religious tenet that same-sex attractions are sinful (typically found in conservative religious doctrines). Not only must this individual endure coming to terms with a non-heterosexual identity in a less than affirming society, there is also the conflict with and potential loss of a religious identity (Ritter & O'Neill, 1989). For some this tension is too much, as evidenced in the suicidal deaths of Clay Whitmer and Stuart Matis who struggled with being devout Mormons and gay (Miller, 2000, as cited in Love et al., 2005).

College Campus Environment

In Dylan N. 's case, verbal harassment escalated almost immediately into physical violence. Other students began spitting on him and throwing food at him. One day in the parking lot outside his school, six students surrounded him and threw a lasso around his neck, saying, "Let's tie the faggot to the back of the truck." After that incident, the harassment and violence intensified. "I was living in the disciplinary office because other harassment was going on. Everyone knew," he said. "It gave permission for a whole new level of physical stuff to occur." He was pushed up against lockers by students who shouted "fag" and "bitch" at him. On one occasion, a group of students surrounded him outside the school, punching him and jeering while security officers stood nearby. When the assault ended, he had a split lip and a broken nose and was bleeding profusely from his ear. (Hated in the Hallways, retrieved from: www.hrw.org/reports/2001/uslgbt/Final-06a.html)

While harassment and abuse of sexual minority youth is rampant in elementary and secondary schools across the country (Bochenek & Brown, 2001), this harassment and abuse does not end with high school graduation. A move to the college environment

merely changes the setting. In the college campus environment, sexual minority youth experience abuse and harassment in myriad ways including violent acts against them, destruction of personal property, physical and verbal harassment, and discrimination.

Coping with a marginalized identity on a college campus can be a challenge, particularly with respect to sexual orientation (Dilley, 2002; Evans, 2001; Evans & Broido, 1999; Evans & D'Augelli, 1996; Evans & Rankin, 1998; Evans & Wall, 1991; Howard & Stevens, 2000; Wall & Evans, 2000). Harassment and discrimination in the college environment directed at sexual minority students is well-documented (Aberson, Swan, & Emerson, 1999; Berrill, 1992; D'Augelli, 1989, 1992; Evans & D'Augelli, 1996; Franklin, 2000; Herek, 1993; Rankin, 2003; Sanlo, 2005). In a recent campus climate assessment, Rankin found that over 30% of sexual minority college students experienced some form of harassment. Evans and Broido (1999, 2002) and Evans, Reason, and Broido (2001) noted discrimination and harassment that occurred in residence halls as result of a sexual minority identity and "coming out."

Perception of perceived prejudice or discrimination is also an inhibiting factor for an individual's mental well-being. Whether prejudice occurs or not, it is the meaning or perception that the individual discerns that contributes to his or her stress as a stigmatized sexual minority individual. Whether actual or perceived discrimination occurs, Lucozzi (1998) declared that sexual minority youth who worried about harassment and discrimination were unable to concentrate on academics or co-curricular activities. In a sample of 206 lesbian and bisexual youth (ages 14-21), D'Augelli (2003) found that "although the amount of victimization youths experienced predicated current mental health symptoms, it was fear of future attacks that was the most powerful correlate of

symptoms” (p. 27). Such an intense level of stress can lead to dropping out of school or experiencing academic problems for sexual minority youth who experience discrimination, harassment, and hostility in their campus environments (Hunter & Schaecher, 1990; Lopez & Chism, 1993; Remafedi, 1987a, 1987b; Rotheram-Borus, Rosario, & Koopman, 1991). Sanlo (2005) noted that “Fewer than 10% of the nation’s 3500 colleges and universities have *sexual orientation* in their non-discrimination policies, and only 40 institutions have professionally staffed centers that provide services to, for, and about sexual minority students” (p. 98).

Sexual minority students fare no better in the classroom. Few classes include LGB related materials (McNaron, 1997) and heterosexist and homophobic practices pervade (DeSurra & Church, 1994; Lopez & Chism, 1993; Pilkington & Cantor, 1996; Slater, 1993). Sexual minority students continually evaluate the classroom environment to determine whether they can safely reveal their sexual orientation (Malinowitz, 1995, Evans, 2002).

In addition, visible supports and resources, while not always openly acknowledged or accessed by sexual minority students, are very reassuring. Evans (2002) found that Safezones helped facilitate a campus climate that was more encouraging to LGBT students. While many of the students in her study did not actually seek out support from a Safezone member, several of them mentioned that the Safezones provided visible acknowledgement of support for a LGB identity, and this was enough to help the students feel more comfortable (Evans). As additional support for the LGB campus community, Sanlo (2000) created and implemented Lavender graduation, specifically to acknowledge LGBT students who earned a college degree.

As a result of sexual minority stigmatization in the classroom and the campus environment, sexual minority youth may be susceptible to a number of issues that can impact their mental health and well-being; specifically, low-self-esteem (Evans & D'Augelli, 1996), feelings of alienation and isolation (D'Augelli & Hershberger, 1993; D'Augelli, Hershberger, & Pilkington 1998; Evans & D'Augelli, 1996); depression and anxiety (Dworkin, 2000); substance abuse (Evans & D'Augelli, 1996), and most critical – suicide (Bagley & Trembley, 2000; Evans & D'Augelli, 1996; Remafedi, 1999; Remafedi, Farrow, & Deisher, 1991; Remafedi, French, Story, Resnick, & Blum, 1998).

Family Support

“My fight to live the life I want, and I see it in my gay friends’ lives, is so hard. My parents refuse to accept me. Their religion comes before me. I feel like they don’t care about how I feel. It really gets lonely. My parents have told me if I live this lifestyle they would rather be dead. They told me that they wish I was never born. I’ve run away several times, I’ve used drugs to satisfy my needs for love, but the drugs became overwhelming. I really need someone to talk to...Next year I’m going back to my old school where everyone knows I’m gay. It’s gonna be so hard. All of this pressure has drove me over the wall to where life seems meaningless. I’m so confused. I’m on so much medication for depression and anxiety, I’ve been to mental institutions for suicide. It’s just the confusion that is getting to me. I’m trapped in a room with windows and doors, but they’re all locked and barred.” (Bagley & Trembley, 1997b, as cited in Smith & Drake, 2001)

As previously discussed, negotiating a sexual minority identity is difficult; however, it can be even more difficult and increasingly traumatic if family members are seen as homophobic and non-supportive (Strommen, 1989a, 1989b). For sexual minority youth, the potential risk of rejection from family members is particularly important in deciding whether to “come out” to family members (Remafedi, 1987a, 1987b). Family rejection is often more feared than victimization or harassment (D'Augelli, 1991). This risk of rejection by family members is very real, though; sexual minority youth do not

tend to come out to parents first, rather initially disclosing to a sibling who is often more accepting (D'Augelli, Hershberger, & Pilkington, 1998).

With reference to parents and coming out, D'Augelli (1991) found that 26% and 57% of mothers and fathers, respectively, rejected or were intolerant of their children after disclosure of a non-heterosexual identity. Some parents respond in much more threatening ways to a child's disclosure. Herdt and Boxer (1993) noted that 3% of LGB youth were ejected from their households and D'Augelli, Pilkington, and Hershberger (2002) found that 5% were physically attacked by their parents. In some situations, parents respond with attempts to convert the child to heterosexuality through therapeutic or religious interventions and verbal threats to withdraw financial and emotional support (Savin-Williams, 1994, 1995). Furthermore, D'Augelli (1991) suggested:

As more youth identify themselves as lesbian/gay/bisexual at increasingly earlier ages, they will be confronting parental attitudes and responses for longer periods of time...without increases in familial acceptance, increased tension and worry may result, as well as indirect manifestations of these reactions expressed as health problems, school attendance interruptions, and academic difficulties. (p. 443)

Remafedi, Farrow, and Deisher (1991) found that nearly half of their participants' suicide attempts were attributed to family problems.

On the other hand, supportive parents can be extremely helpful in contributing to the development of a positive sexual minority identity, self-esteem, and combating depression (Elizur & Ziv, 2001; Floyd, Stein, Harter, Allison, & Nye, 1999; Savin-Williams, 1998), in addition to providing a buffer against the mental health problems

associated with victimization (Hershberger & D'Augelli, 1995). D'Augelli (2002) indicated that “support from parents and peers may mitigate the development of mental health problems of LGB youth” (p. 453). Future studies, noted D'Augelli (1991), need to focus on familial relations.

In this study, I explored the extent to which family support (or lack of support) contributes to or buffers against minority stress, psychological distress, and suicidality. To determine the familial level of support or lack of support for this study, I measured family support using the Social Provisions Scale (Cutrona & Russell, 1987).

LGB Community Involvement

“Beginning in middle school, I became really depressed. At first I didn't know why. Didn't have a clue. But I knew it wasn't okay to be gay. No one was out at my middle school, but I heard lots of slurs all the time. Lots of homophobic comments. I was scared. Scared to be a lesbian. Scared to be out at school. Scared of being so alone... I also had one teacher who would say ‘that's so gay’ instead of saying ‘that's so stupid’...My grades started to fall. A counselor talked to me about my grades. I had always been a good student. But she didn't give me any opening to talk about sexuality. I needed to get information.” Alix, *Midwestern United States*
(*Hatred in the Hallways*, retrieved from: www.hrw.org/reports/2001/uslgbt/Final-17.htm#P1379_271930)

Finding information and role models is difficult for sexual minority youth, perhaps even more so for those growing up in rural America. Processing a sexual minority identity is a time of questioning, confusion, and rampant emotions; finding a system of social support is crucial. D'Augelli (2003) and Hershberger and D'Augelli (1995) indicated that support from others is particularly important because it can help to buffer the effects of perceived or actual abuse, harassment, and discrimination based on sexual orientation.

Family, often considered the first line of support in an individual's life, is not always the answer for sexual minority youth who fear rejection. Even if a family is

supportive, most sexual minority youth do not come out to family members first, and typically fathers are the last to be told. D'Augelli (1991) found that 73% of his sample came out to friends first, in contrast to only 1% who came out to their fathers first. Fear of losing friends and social network is a constant stressor for sexual minority youth, particularly for gay men. D'Augelli (1991) found that 45% of males feared losing a friend in contrast to only 27% of females. However, 46% of the entire sample reported losing at least one friend.

Many sexual minority college students seek support from within a LGB community. Contact with other sexual minority youth is an important component of community support and provides a bridge to resources and role models. D'Augelli (1991) found that more than 70% of his sample attended LGB social events at least once a month, and only 8% of his sample had never been to a lesbian/gay bar by the time they were 21, noting that even before achieving a legal drinking age, socialization in this setting is common. Affiliation with other LGB students facilitates both the development of a positive minority identity and self-esteem (Frale, Wortman, & Joseph, 1997); however, finding an LGB community of support is particularly difficult in rural areas (Yarbrough, 2003).

The research reviewed in this section has provided some evidence regarding the positive benefits for sexual minority youth of involvement with an LGB community; specifically for exposure to support and resources. In this study, I measured the participant's level of LGB community involvement using the Community Involvement questionnaire (Ortiz, 2001).

Macrosystems for Sexual Minority College Students

Bronfenbrenner (2005) explained that the macrosystem is the overarching characteristics of the micro-, meso-, and exosystems of a given culture or subculture that produces the developmental beliefs systems, resources, and lifecourse options that are imbedded in each of these systems. Within the framework of this study, I suggested three subcultures that provide a set of socially constructed beliefs and cultural norms that impact the sexual minority community. I have defined these macrosystems as rurality, race/ethnicity, and sex category. For the purpose of this study, rurality was not defined as a measured variable, but rather was a condition of eligibility for the study. As a result, all participants in this study were classified as living in a rural area for some time during their childhood and/or adolescent development (a minimum of 5 years was the eligibility criteria).

Rurality

Rural America. Salt of the Earth. Hard-Working. God-Fearing. Family Oriented. Community-Focused. Pulling Together in Time of Need. Supportive. Caring. These are the qualities that come to mind which fill the frame of the picture of traditional rural America – a frame which connotes safety, security, acceptance, and warmth. But for the gay or lesbian teen or adult, these qualities may very well be little more than an impossible dream. All too often the safety, security, acceptance, and warmth are reserved only for those who conform to the community mold. (Watson & Ross, 1997, p. 113)

While sexual minority youth are subject to harassment and discrimination in all regions of the country, “they are perhaps nowhere more subject to hostility or reminded of their differences than in rural communities” (Foster, 1997, p. 24). Growing up LGB in the rural Midwest situates the individual in a geographical region of the country that predominantly adheres to conservative social values (Lindhorst, 1997; Smith, 1997). Being gay in the rural Midwest can leave sexual minority youth feeling socially isolated

(Fellows, 1996). Oswald and Culton (2002) found that negative attitudes toward lesbian, gay, and bisexual people were more prevalent among those who identified with social conservatism and religious traditionalism, and that these negative attitudes inhibited development of a positive sexual identity. What makes development of a positive sexual minority identity particularly difficult to achieve in the rural Midwest is the absence of positive sexual minority role models (Kramer, 1995). Sexual minorities living in rural areas hear negative messages regarding homosexuality from parents, teachers, clergy, and peers (Cody & Welch, 1997). Cass (1979) and Troiden (1988) both stated that disclosure of sexual identity is particularly important for development of a positive sexual identity. If, however, one is continually receiving negative messages and has no one with whom to identify, coming out to family and friends is especially difficult.

In a study focusing on rural areas and LGB youth, D'Augelli and Hart (1987) found that most rural sexual minority youth are often publicly asexual, and helping professionals in these areas are poorly informed and inadequately prepared to help sexual minority youth cope with a stigmatized sexual identity. As a result, loneliness and isolation can occur (Bell & Valentine, 1995; D'Augelli & Hart).

Race/Ethnicity

*The racism I have experienced in the gay community is not the overt color of red but the subtle, unwavering tinge of blue. It is the blue in eyes that forget to see you, that sweep over you during a mainstream GLBT function. It is the default belief that gay America is gay white America. It is the lack of concern for you and your issues. It is the blue color of neglect and ignorance... Angela Cheng
(Retrieved from <http://www.main.org/trikonetejas/coverstorya.htm>)*

For sexual minority youth of color, the distress of coping with a minority sexual identity is even more troubling than it is for white LGB youth. In a report of the

professional literature and research needs for LGBT youth of color, Ryan (2002) noted several of the issues confronting sexual minority youth of color (see Table 2.6).

Table 2.6

<i>Common Attitudes and Experiences Toward Sexual Minority Youth of Color</i>		
Cultural and Family Values	Cultural Perceptions of Homosexuality	Experience of LGBT Identity
Strongly interdependent family and extended family (that includes non-relatives and friends)	Homosexuality is viewed as a “Western” or white phenomenon, that “does not exist” in ethnic minority cultures	Feel pressure to choose between two communities (LGBT or ethnic minority)
Structured interpretation of sex roles (ranging from greater flexibility in Native American and African American cultures to more sharply defined in Asian American culture)	Seen as rebellion or rejection of one’s cultural heritage, or may be the result of too much assimilation by the mainstream culture	Feel they cannot truly be themselves in either world since both communities reject or devalue a core part of their identity
Importance of marriage and childbearing	Acceptance of third gender role among Native Americans, which included homosexuality and bisexuality, was obscured during destruction of tribal culture	Feel most comfortable when they are able to express both ethnic and LGBT identities
Importance of religion and spirituality		
Indirect response to conflict		
Lack of open discussion about sex (in Hispanic and Asian American cultures)		

*Source: Ryan (2002)

Mancoske (1997) stated, “For gays and lesbians of color, especially in rural areas, the isolation is compounded by coping with racism, higher rates of poverty and cultural and religious beliefs which may tolerate gays and lesbians provided they keep their sexual orientation hidden” (p. 45). Swigonski (1995, as cited in Mancoske) found

lesbians of color had to cope with class, race, religious, and legal oppression, all while maintaining a veil of invisibility.

Going to college provides little relief for a sexual minority person of color. In the campus environment, LGB student of color are more likely to find the campus environment overall more negative toward them compared with LGB Caucasian students (Waldo, 1998).

Sex Category

Sex category was identified as a macrosystem based on the theory that gender is a social construction and as such the norms designed to maintain the reinforcement of the social construction are deeply embedded in society. Although sex and gender are not the same (sex is based on biology, and gender is based on one's internal sense of being male or female), society often holds the individual accountable to a gender based on sex category.

The concepts of masculinity and femininity permeate all facets of our culture and prevail from the moment an individual is born. For example, gender norms suggest that at birth, girls receive items colored in pink, and boys receive items colored in blue. In childhood, girls are reinforced to play with dolls, and boys to play with trucks. It is okay for girls to cry, but it is not okay for boys to cry. Kessler and McKenna (1978) noted that society operates in a world with a moral certainty of two sexes. In Western society, there is the postulation of and institutional support for a binary system of gender based on an individual's sex (West & Zimmerman, 1987). There is no way around doing gender and there is no option for not doing gender; as a society predicated on a binary system, gender will be ascribed whether one chooses to conform or not (Lucal, 1999). Since gender (and

sex) is so pervasive and strictly reinforced on a societal level, I chose to explore its effects as a macrosystem.

Summary

The findings of this project have clear relevance to determining factors that contribute to positive or negative mental health for sexual minority youth in rural areas.

Discussing the need for empirical research in this area, Waldo et al. (1998) stated:

Most reports of violence and harassment against lesbian gay, and bisexual youths document prevalence but do not consider empirically the relationship of victimization to other variables such as psychological distress and community support. In addition, the majority of these studies examine only young people living in urban areas, a group that may differ from those who live in more rural settings. (p. 311)

In summary, how one perceives and responds to events in his or her environment may be tempered through the lens of epistemological beliefs. The epistemological perspectives most common among traditional age college students are absolutism and relativism, both of which negate a certain amount of agency within the individual to respond to events. Merge this factor with the stress of a non-accepting college environment, non-accepting family members, a strong family emphasis on religion (conservative), and lack of community involvement/support, and the sexual minority youth may be on a developmental trajectory that produces outcomes such as anxiety, depression, and suicide.

CHAPTER 3

METHODOLOGY

This chapter provides detailed information on the philosophical assumptions of this research, the causal model, the participants, the materials and procedures used for data collection, the method used to analyze the data, and design issues of the study. Prior to collection of data, an application for approval to conduct research involving human subjects was made to the Office of Research Compliance at Iowa State University. The study received a full review by the Institutional Review Board, who subsequently granted approval for the project on October 30, 2004.

Methodological Approach

This study used existing theory, as reviewed and discussed in Chapter 2, to provide a foundational framework for a hypothesized model that was tested empirically. Specifically, I took an objectivist epistemological approach with a postpositivist theoretical perspective through which data were collected using a survey research methodology.

Objectivism refers to the absence of subjective judgment; knowledge is based reliably on observed objects and events. Postpositivism follows the traditional positivist theoretical approach, but accounts for the fact that one may never know absolute truth in seeking knowledge (Creswell, 2003). Under a postpositivist approach, the relative and contextual truth that is observed, given the nature of the research methods, may be the best knowledge at the moment. Phillips and Burbules (2000) stated, “Science does not attempt to describe the total reality (i.e., all the truths) about, say, a classroom; rather, it seeks to develop relevant true statements – ones that can serve to explain the situation

that is of concern or that describe the causal relationships that are the focus of interest” (p. 38).

Philosophical Assumptions/Commitments

Phillips and Burbules (2000) identified five key assumptions of the postpositivist perspective:

- 1) Knowledge is seen as conjectural and supported by the strongest warrants of the time, but can be subject to reconsideration at any time.
- 2) Warrants for claims are made and examined; if the warrant is strong, the claim is accepted until future evidence repudiates the warrant.
- 3) Rational thought, the evidence available, and the data collected (observed) shape knowledge at the time.
- 4) Research is relevant and contextual. Postpositivist researchers seek statements that are relevant and true, given the context, to explain a causal relationship in the research.
- 5) Postpositivists seek to be objective, basing research on the “best” evidence available at the time.

Theoretical Model and Hypothesized Relationships

In this study, I used previous theoretical models and research to propose and test a causal model that explains the relationships between the variables of campus environment, family support, LGB community involvement, religious emphasis (in the family), sex category, race/ethnicity, personal epistemology, minority stress, psychological distress, suicidal thoughts, and suicidal attempts. “When theory does not play a selective role, our data-gathering activities belong in the realm of journalism rather

than science” (Kulka, as cited in Pedhazur, 1997, p. 768). Figure 3.1 is a diagram that illustrates the proposed causal path model for this research. The straight arrows in the diagram represent the causal relationship (Loehlin, 2004).

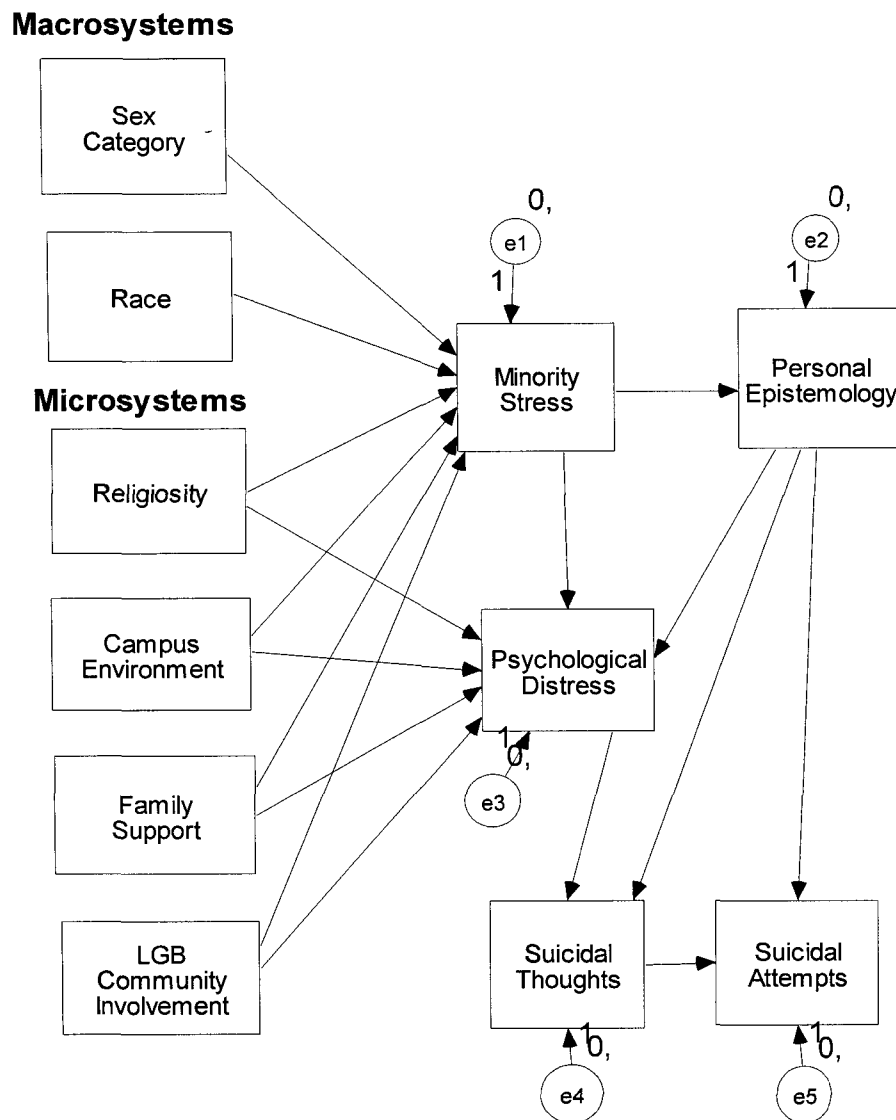


Figure 3.1 Hypothesized Path Model

The model in Figure 3.1 specifies five hypothesized causal relationships that were tested in this study. The first hypothesis was that a relationship exists between the exogenous variables of campus environment, family support, LGB community involvement, religion, race/ethnicity, and sex, and the outcome variables of minority stress and psychological distress. The second hypothesized relationship was that personal epistemology mediates the relationship between the exogenous variable of minority stress and the endogenous variable of psychological distress. The third hypothesis was of a direct causal relationship relating personal epistemology with psychological distress, suicidal thoughts, and suicidal attempts. The fourth hypothesis was of a direct causal relationship between minority stress and psychological distress, followed by a direct causal relationship between psychological distress and suicidal thoughts. Finally, there was a hypothesized direct relationship between suicidal thoughts and suicidal attempts.

Methods

This section describes the participants, sample, sample size and statistical power, and procedure for data collection.

Participants and Sample

Participants for this study included $n = 76$ college students between the ages of 18 and 22 years old ($M = 20.39$, $SD = 1.39$) who identified with a same-sex attraction. All participants were undergraduate students enrolled in a community college, public four-year or private four-year higher education institution in the state of Iowa, Kansas, Nebraska, South Dakota, or North Dakota. To be eligible for participation in this study, participants needed to self-identify as lesbian, gay, bisexual, or with a same-sex

attraction, be between the ages of 18 to 22 years old at the time of completing the questionnaires, and have spent at least five years of their lives living in a rural area.

Because much of the Midwest is comprised of rural areas and lacking in close proximity to metropolitan areas (where LGB resources are more readily available), the definition of “rural” was construed rather broadly to account for the inclusion of a majority of respondents from cities and towns in these states. Specifically, rural was defined as a city or town of under 100,000 people. This definition excluded participants from the few metropolitan and/or large urban areas in the Midwest (e.g., Des Moines, Kansas City, Omaha). The majority of participants in this study are from the state of Iowa where there are only three cities with populations greater than 100,000. These cities are Cedar Rapids (110,243), Davenport (103,264), and Des Moines (191,003) (Office of Social and Economic Trend Analysis, Iowa State University, 2003). As a result, participants from these cities were not eligible to participate in this study.

A frequency distribution of the demographic characteristics of the participants revealed that 43 (56.6%) identified as male, and 33 (43.4%) as female. It was not a requirement of this research that participants self-label as gay, lesbian, or bisexual. The only criteria with regards to sexual orientation identification was that participants considered themselves as same-sex attracted. Therefore, the option of “other” was provided under the demographic question for sexual orientation. Of the 76 participants, 39 (51.3%) identified as gay, 8 (10.5%) identified as lesbian, 24 (31.6) identified as bisexual, and 5 (6.6%) identified as “other.” In a follow up question, those participants who responded to “other” as a response for sexual orientation listed self-identifiers such

as “queer,” “don’t like labels, I am same-sex attracted,” and “bi-curious/questioning lesbian.”

A breakdown of participants’ sexual orientation by sex category showed that 39 (90.7%) of males identified as gay, 3 (7.9%) as bisexual, and 1 (2.3%) as other (choosing not to respond to gender). For the sex category of female, 8 (24.2%) identified as lesbian, 21 (63.6%) as bisexual, and 4 (12.1%) as other. The breakdown of “other” for female participants revealed 2 identifying as “queer,” 1 as a “bi-curious/questioning lesbian,” and 1 stating, “don’t like labels, I am same-sex attracted.”

With regards to race/ethnicity, 64 (84.2%) identified as Caucasian, 4 (5.3%) as African-American/Black, 2 (2.6%) as American Indian/Alaskan Native, 2 (2.6%) as Latino/a, 3 (3.9%) as Bi-racial/Multi-racial, and 1 (1.3%) as Asian/Pacific Islander. For the purpose of analyzing data, race was recoded into a dichotomous variable with 1 representing Caucasian participants and 0 representing non-Caucasian participants. The distribution of participants for this new dichotomous variable revealed that 64 (84.2%) were Caucasian and 12 (15.8%) were non-Caucasian.

A purposeful sampling strategy was employed to identify participants for the study. Purposeful sampling is used when it is important to choose a sample based on some specific characteristics of the group being sampled (Frenkel & Wallen, 1996; Nardi, 2003), as was the case in this study. Participants for the sample were recruited using a variety of methods, including LGB college campus listserves (see appendix C), recruitment flyers (see appendix D), advertisements in a statewide LGB community newspaper (see appendix E), through Iowa State University’s Department of Psychology mass testing, and word of mouth (often referred to as “snowball” sampling). These

methods typically are used for populations that are at risk from some personal disclosure (e.g., non-heterosexual identity, drug use), or difficult to find and identify (Nardi). A number of previous research studies involving sexual minority individuals have used purposive and snowball sampling designs successfully (e.g., D'Augelli & Hershberger, 1993; Waldo et al., 1998). The majority of participants in this study volunteered for participation through the website in response to the invitation e-mails (69.7%) that were sent to college campus LGB listserves, which was by far the most successful means of recruitment. Participants also volunteered to participate by responding to a recruitment question during the psychology department's mass testing sessions. Fifteen (19.7%) participants who met eligibility requirements were recruited through ISU's department of psychology mass testing sessions. Participants recruited through this method did not complete this study's questionnaire during the psychology mass testing session. Four (5.3%) participants responded to the study advertisement flyer, and 4 (5.3%) were recruited through friends who had already participated in the study.

Statistical Power and Sample Size

There are two types of errors inherent in hypothesis testing; Type I (or α) error occurs with false rejection of a true null hypothesis, and Type II (or β error) occurs when a false null hypothesis is not rejected (Hinkle, Wiersma, & Jurs, 1998). Power and the probability, β , of a Type II error sum to one. Specifically, if the null hypothesis is false, but the researcher does not reject it, a Type II error has occurred with probability β : power is defined as the probability of correctly rejecting the null hypothesis when it is false ($1 - \beta$).

With structural equation modeling (SEM), power is important because “a not significant test statistic of overall fit is desired because the researcher typically does not want to reject an hypothesized model” (Kim, 2005, p. 369). A model with low power may produce this desired result; subsequently, power probably is more important in SEM than in other statistical methods. Table 3.1 shows the four possible outcomes in a study with regards to Type I and Type II errors.

Table 3.1

Four Possible Outcomes in a Study (With Their Probabilities)

Decision	True State	
	H_0 True	H_0 False
Do not reject H_0	Correct decision ($1 - \alpha$)	Type II error (β)
Reject H_0	Type I error (α)	Correct decision ($1 - \beta$)

*Source: Kim (2005)

Power is affected by sample size, degrees of freedom, Type I error (α) levels, variability (measured by variance and standard deviation), and the noncentrality parameter (δ) (estimated by the best-fit χ^2 minus its degrees of freedom), whether samples are independent or dependent, the test statistic used, and the reliability of the scores (e.g., instruments used) (Kline, 2005; Loehlin, 2004). The δ is used to estimate population-based fit indices that account for how well the model can account for variation in the population, which may be of more interest than how well the model fits the sample. There are several methods used for assessing power (both prior to and

following the collection of data) and determining the appropriate sample size for a path model. Kim (2005) suggested four fit indices that can be used to compute δ and a sample size estimate to achieve a certain level of power.

For this research, an a priori method using the RMSEA fit index (as suggested by Kim, 2005) was used to estimate the sample size needed for statistical power of .80, which generally is recognized as a desired level of power for SEM (Kim; MacCallum, Browne, & Sugawara, 1996). The RMSEA fit index is described in more detail in Chapter 4 in discussing the results and the goodness of fit of the estimated path model. Using the RMSEA fit index, Kim suggested the following formula to compute a proposed sample size:

$$N_{\varepsilon} = \frac{\delta_{1-\beta}}{\varepsilon^2 df} + 1,$$

where $\delta_{1-\beta}$ is the critical noncentrality parameter, ε is the chosen value of RMSEA, and df is degrees of freedom. In calculations using the formula, SPSS syntax provided by Kim (2005) was used to determine the critical noncentrality parameter for the desired power of .80.

There are 39 degrees of freedom in the hypothesized path model in Figure 3.1. In choosing the RMSEA value, I referred to Browne and Cudeck (1993, as cited in Kline, 2005), who noted a guideline for RMSEA values: “RMSEA \leq .05 indicates close approximate fit, values between .05 and .08 suggest reasonable error of approximation, and RMSEA \geq .10 suggest poor fit” (p. 139). Given the inherent difficulty in finding participants for this study, I chose the RMSEA value of .07; thereby accepting some reasonable error of approximation, which in turn would decrease the required sample

size. When the data were analyzed and the model was estimated, degrees of freedom increased and the final RMSEA value indicated a fit $\leq .05$. (The resulting RMSEA value, .03, is discussed in Chapter 4.)

The appropriate values were inserted into the equation to compute the sample size needed for power of .80.

$$N_{\epsilon} = \frac{27.27}{.07 * 39} + 1 \quad \longrightarrow \quad N_{\epsilon} = 144$$

As noted in the participant and sample subsection of this chapter, the final sample size for this study was $n = 76$. Loehlin (2004) noted, “with large numbers of degrees of freedom, even samples below 100 may provide adequate power” (p. 73).

Once the model was estimated and the actual RMSEA value ($\epsilon = .03$) and degrees of freedom (43) were determined, power was computed using a method determined by MacCallum, Browne, and Sugawara (1996). Using the SAS syntax provided in their article, the estimated power for this model is .65. It is important to note that power in statistical models has been highly contested. A vast majority of research published in journals has failed to address the concept of power and when reviewed the average power for studies published was below .50 (Cohen, 1992; Nix & Barnette, 1998; Sedlmeier & Gigerenzer, 1989).

Procedure

Participants who responded through one of the recruiting methods had to self-select into the study by contacting me through the project website (found at www.ruralstudy.isbr.iastate.edu) or by contacting me by email or telephone. I then screened the volunteer for eligibility through the following series of questions:

1. Are you between the ages of 18 and 22?
2. Have you lived in a city of under 100,000 for five years at some point in your life?
3. Do you identify as gay, lesbian, bisexual, or with a same-sex attraction?

Participants who answered “yes” to all three questions were eligible to participate in the study. Once eligibility was confirmed, I arranged with the participant to send the informed consent document via email or other postal service. The ISU Institutional Review Board for the protection of human subjects in research deemed it necessary to have hard copy informed consent documents with a signature from the participant rather than through an electronic medium (e.g., Internet). Requiring potential volunteers to contact me directly may have limited the results of this study. Specifically, only individuals who were comfortable enough to identify verbally as LGB or with a same-sex attraction would contact me. The potential consequences for this research are discussed in more detail in the limitation section of this chapter.

To maintain confidentiality regarding the participants’ sexual orientation, the research was referred to as the Iowa Study through all modes of contact with participants. This was done to keep LGB references in e-mail subject headers, receipts, and return addresses out of sight of those who might be around the participant in case those individuals were not aware of the participant’s sexual orientation. Once signed informed consent was received, the participant was provided with an identification code and a password to enter the secure website and complete the series of scales and questionnaires. Approximately 60 minutes was required to complete all scales and questionnaires. All participants were compensated \$20.00 at the completion of the scales and questionnaires.

This research was funded through the Institute for Social and Behavioral Research at Iowa State University.

Because I am interested in continuing to follow these participants through their development in a follow-up longitudinal study, a questionnaire requested permission to contact them in the future. The participant was provided with a number of options to maintain contact and one option that allowed a choice for no further contact. A copy of this form can be found in Appendix A.

In addition to completing surveys online, participants had the opportunity to complete the scales and questionnaires using paper and pencil during sessions prearranged by me or upon request. Several sessions were conducted on the Iowa State University campus; however, all participants from out of state only used the online format for completing surveys and questionnaires.

Variables and Instrumentation

This study tested a causal path model of microsystems and macrosystems (based on contextualizing the participant's environment as explained in Chapter 2) for their effects on the mental well-being of sexual minority college students. The model was constructed using the eleven observed (measured) variables of campus environment, family support, LGB community involvement, religious emphasis, race/ethnicity, sex, personal epistemology, minority stress, psychological distress, suicidal thoughts, and suicidal attempts. The variable of psychological distress was constructed by combining the Trait Anxiety Scale and the CES-D depression scale (both are described in detail later in this section). The significant Pearson correlation between these two scales is $r = .80$.

All instruments and scales used to measure the variables can be found in Appendix B. Prior to conducting research, approval was obtained to use all copyrighted instruments.

Independent Variables

The instruments used to measure the independent variables of sex, race/ethnicity, campus environment, family support, LGB community involvement, religious emphasis, and personal epistemology are described in detail.

Demographics. Race/Ethnicity and Sex were measured through participants' responses to items on a demographic questionnaire. Race/ethnicity was measured by the participant's selection from the following options: Caucasian, Asian/Pacific Islander, African American/Black, Latino/a, American Indian/Alaskan Native, Bi-racial/Multi-racial, and Other (please specify). For the variable Sex participants selected either male, female, or intersex (none of the participants selected this category).

Campus Environment. The observed variable of college campus environment was measured using an LGBT campus climate subscale ($\alpha = .84$ for this research) of the Campus Climate Assessment (Rankin, 2003). Participants were asked to rate their agreement with 7 statements regarding the campus environment for sexual minority individuals, including, "The curriculum adequately represents the contributions of LGBT persons," "The climate of the classes I have taken are accepting of LGBT persons," and "The college/university provides visible resources on LGBT issues and concerns." Agreement with each statement was assessed using a 5-point Likert score ranging from 1 = "strongly agree" to 5 = "strongly disagree." Higher scores represented a more negative campus environment for sexual minorities. A total mean score was calculated for each participants' perceptions of their campus environment.

Family Support. The observed variable of family support was measured using the Social Provisions Scale – Source Specific version ($\alpha = .87$; Cutrona & Russell, 1987, $\alpha = .93$ for this study). The Social Provisions Scale – Source Specific version (SPSSS) assesses multiple dimensions of social support and shows both convergent and divergent validity. There are 24 items on the SPSSS, used to assess perceived support from parents (mother and father separately), siblings, and one extended family member to whom the participant feels closest. Participants respond to items using a 4-point Likert score from 1 = “strongly disagree” to 4 = “strongly agree,” or NA, which includes “not applicable, my [mother, father] is deceased” for items addressing relationship with parents or “not applicable, I do not have [siblings, relatives]” for items addressing siblings and relatives. Example items include: “I can depend on my mother to help me if I really need it,” “I can talk to my father about important decisions in my life,” “I have a close relationship with my siblings that provides me with a sense of emotional security and well-being,” and “I feel that my relatives share my attitudes and beliefs.” Higher scores indicate greater perceived support from family members. A total mean score was calculated for the average level of family support for each participant.

LGB Community Involvement. The observed variable of LGB Community Involvement was measured using the Community Involvement Scale ($\alpha = .69$; Ortiz, 2001, $\alpha = .68$ for this study). The Community Involvement Scale (CIS) asks participants about the frequency of their activities with members of the gay, lesbian, and bisexual community during a one-month period (the last 30 days) (Ortiz). Example items include: “I go to gay bars/dance clubs/parties ___ time(s) a month,” “I have dinner with gay friends ___ time(s) a month,” and “I go to gay coffee shops/cafes ___ time(s) a month.”

Greater frequency of activities indicates greater community involvement/interaction and subsequent access to community support. A total mean score was calculated for the average level of involvement for each participant with a LGB community.

Religion Emphasis. The Religious Emphasis Scale (RES) ($\alpha = .90$; Altemeyer, 1988; ($\alpha = .95$ for this research) was developed to measure the extent to which the family religion was emphasized while one was growing up (Hunsberger, 1999). Participants use a 6-point Likert scale to indicate the degree to which certain behaviors of the family religion were emphasized. Response alternatives include 0 = “no emphasis was placed on the behavior,” 1 = “a slight emphasis was placed on the behavior,” 2 = “a mild emphasis was placed on the behavior,” 3 = “a moderate emphasis was placed on the behavior,” 4 = “a strong emphasis was placed on the behavior,” and 5 = “a very strong emphasis was placed on the behavior.” Some items from the original scale were altered slightly to de-emphasize Christianity as the dominant perspective. For example, item 1 in its original form stated “Going to church, attending religious services.” This item was altered to be more inclusive by changing it to state “Attending religious services (e.g., synagogue, church, mosque).” A higher score on this scale indicates a stronger focus on religion in the participant’s family during adolescent development. Research has shown that strong “traditional” religious convictions often correlate negatively with acceptance of a same-sex orientation. A total mean score was calculated for each participant’s level of family religious emphasis from the 10-item scale.

Personal Epistemology. The observed variable of cognitive development was measured using the Epistemic Belief Inventory (EBI) (Schraw et al., 2002). The EBI consists of 32 items designed to measure on a continuous scale 5 areas of epistemic

beliefs (with Cronbach alpha values): certain knowledge $\alpha = .62$, fixed ability $\alpha = .62$, simple knowledge $\alpha = .62$, quick learning $\alpha = .58$, and omniscient authority $\alpha = .68$.

Answers to each question on the EBI are based on 5-point Likert scale ranging from 1 = “strong disagreement” to 5 = “strong agreement.” Lower scores represent a more mature level of cognitive development. For the purpose of this research, only the subscales of certain knowledge and omniscient authority were used, and were combined ($\alpha = .69$) to measure personal epistemology focusing on the absolutist, relativist, and post-relativist developmental perspectives (as discussed in Chapter 2).

Dependent Variables

The instruments used to measure the endogenous variables of minority stress, psychological distress, suicidal thoughts, and suicidal attempts are described in detail.

Minority Stress. Minority stress was measured using the Lesbian and Gay Stressor Scale (LGSS) (Lewis, Derlega, Berndt, Morris, & Rose, 2001), a 54-item scale intended to measure stressors in gay and lesbian respondents. Questions were adapted for this study to include bisexual respondents. Factor analysis using principal component extraction procedures, using both varimax and oblique rotations yielded ten factors ($\alpha = .72$ to $.90$; Lewis et al., 2001): (1) family reaction, (2) family reactions to my partner, (3) visibility with family and friends, (4) visibility with work and public, (5) violence and harassment, (6) misunderstanding, (7) discrimination at work, (8) general discomfort, (9) HIV/AIDS, and (10) sexual orientation conflict. Participants respond to each item “yes” or “no” based on whether they experienced the item in the past year. Example items include: “Lack of support from my family members due to my sexual orientation,” “Loss of friends due to my sexual orientation,” and “Working in a homophobic environment.”

For the purpose of this research, an overall stress score was calculated, with higher scores representing a greater degree of stressors. Lewis et al. found that the LGSS scale correlated significantly with depression in a large sample of sexual minority respondents. In this study, a mean score was computed for each participant from the total of all the scale items ($\alpha = .88$) to represent level of minority stress.

Psychological Distress. The observed dependent variable of psychological distress was constructed by combining the scales measuring depression and anxiety; Pearson correlation between the two instruments was $r = .88$. A mean score for each participant was computed by factoring participant mean scores for depression and anxiety scales. The Centers for Epidemiological Studies-Depression Scale (CES-D) ($\alpha = .87$; Radloff, 1977; $\alpha = .92$ for this study) was used to measure depression, and the Trait Anxiety Inventory (STAI) was used to measure anxiety ($\alpha = .84$; Spielberger, Gorsuch, & Lushene, 1970; $\alpha = .92$ for this study).

The CES-D is a 20-item scale designed to measure depressive symptomology in the general population with extensive validity reported across a wide range of populations (Radloff, 1977). Participants were asked to respond to the 20 items based on how often they have felt that way in the last week. Responses were based on a 4-point Likert score with 1 = "rarely or none of the time," 2 = "some or a little of the time," 3 = "occasionally or a moderate amount of time," and 4 = "most or all of the time." Example items include: "my sleep was restless," "people were unfriendly," "I felt lonely," and "I felt that people disliked me." An overall mean score was calculated with higher scores representing greater depressive symptoms.

The STAI is one of the most widely used instruments to measure state (temporary condition) and trait anxiety (long-standing condition). Only the 20-item trait anxiety form was used for this research. Participants were asked to respond to each statement based on how they *generally* feel, using a 4-point Likert score with 1 = “almost never,” 2 = “sometimes,” 3 = “often,” and 4 = “almost always.” An overall mean score was calculated with higher scores indicating a greater amount of anxiety.

Suicidality. A suicidality questionnaire was developed for this research. Participants were asked 6 questions relating to suicidal thoughts and attempts, including “Have you ever considered taking your own life?” and “Have you ever tried to take your own life?” A toll-free 24-hour telephone number was provided for participants who desired to talk with a counselor. In addition, I contacted participants who indicated that they were currently thinking about suicide.

Data Analysis Procedures

This research uses structural equation modeling (SEM) to analyze the data. “SEM is a statistical methodology that takes a confirmatory (i.e., hypothesis-testing) approach to the analysis of a structural theory bearing on some phenomenon” (Byrne, 2001, p. 3). The structural theory typically represents causal relationships on multiple variables (Bentler, 1988, as cited in Byrne). Ullman (2001) defined SEM as:

a collection of statistical techniques that allow a set of relationships between one or more IVs [independent variables], either continuous or discrete, and one or more DVs [dependent variables], either continuous or discrete, to be examined. Both IVs and DVs can be either factors or measured variables. (p. 653)

There are two important aspects to SEM: (a) structural equations (i.e., regression) to represent the causal processes under study, and (b) a pictorial model to enable a clearer conceptualization of the hypothesized theory (Byrne, 2001).

The basic tenant of SEM is that the researcher hypothesizes a model based on theory and previous empirical research, and then tests the model based on the sample data collected from participants. The model defined in this study is a path model and recursive (i.e., specifying only one direction of causality). The researcher imposes the structure of the model on the data collected, and analyzes for goodness of fit (i.e., how well the data fit the imposed structure). Byrne (2001) stated, “It is highly unlikely that a perfect fit will exist between the observed data and the hypothesized model, there will necessarily be a differential between the two: this differential is termed residual” (p. 7). One can think of this process as $\text{Data} = \text{Model} + \text{Residual}$ (Byrne). “Data” represents the observed measurements, and “model” represents the hypothesized relationship between the observed variables. “Residual” is represented, as noted above, as the discrepancy between the hypothesized model and the observed data.

The hypothesized path model is recursive, in that the errors in the model are uncorrelated and all causal effects are unidirectional (Kline, 2005). The data were analyzed using AMOS 5.0 statistical software. The structural model was tested for a goodness of fit between the hypothesized model and the data. If the goodness of fit is adequate, one can argue for the plausibility of postulated relations among the variables (Byrne, 2001). In addition to the SEM analysis, descriptive statistics are provided in Chapter 4.

Design Issues

This section provides information on issues that are a threat to both the internal and external validity of the study.

Internal Validity

Internal validity ensures that the relationship between variables is unambiguous and defines the researcher's intended relationships (Fraenkel & Wallen, 1996). The researcher should control insofar as possible for threats to the internal validity of a research study including, participant characteristics, loss of participants, the location of the research, instrumentation, history, testing, and implementation (Fraenkel & Wallen). In this section, I address each of these potential threats to the internal validity of this study, and discuss how each threat was addressed and controls implemented.

Participant characteristics. Selection bias of participants is one of the most common threats to the internal validity of a study. The researcher must be aware of and control for differences in the characteristics of participants that might interfere with the variables being studied. For example, if a researcher were studying factors that contribute to adolescent intellectual development, it would be important to control for differences in the age of the participants. In this study, because I was interested in the microsystems and macrosystems of LGB college students and their effect on mental well-being, requirements for eligibility were placed on the personal characteristics of the participants including age, same-sex attraction, and time lived in the rural Midwest. Furthermore, a demographic questionnaire allowed me to control for the participants' race/ethnicity.

Loss of participants. One of the most difficult threats to internal validity to control for is participant attrition (Fraenkel & Wallen, 1996). This is typically an issue in

experimental studies that require multiple participant contacts (e.g., pre-test and post-test designs). Because this study involves only one interaction, one time with participants, the issue of controlling for participants over an extended time does not constitute a threat. What does cause a potential threat in this research is the failure of participants to complete all of the questionnaires. Some of the missing data can be accounted for by using statistical methods to replace missing data.

Location. Where the data are collected has the potential to create alternative explanations for the results. Fraenkel and Wallen (1996) stated, “The best method to control for a location threat is to hold location constant” (p. 245). Because some data used in this study were collected online, the exact location of the participants while completing the online scales and questionnaires is unknown. However, it is important to note that online research has been used successfully in a number of research projects with groups that are at risk (Riggle, Rostosky, & Reedy, 2005). Further, Riggle et al. suggested that pilot testing is essential for conducting online LGBT research. In accordance with their suggestion, this study was pilot-tested extensively by volunteers who did not participate in the actual research project prior to officially launching the study.

Instrumentation. All scales used in this research have shown consistent validity and reliability in prior research. Reverse-coding was used to identify the responses of participants who selected the same continuous response (e.g., randomly selecting all the answers in the same column). The majority of the scales in this study included a number of reverse-coded Likert items. An analysis of the data did not show any patterns of randomly selecting all answers in the same column.

Testing. In some instances, participants may have an opportunity to practice taking a test, survey, questionnaire, or scale prior to the research or as part of the research project (e.g., pre-test, post-test design). This can result in what is known as a “practice effect.” Seeing or participating in preliminary or pilot tests may affect the way the participant responds in the future. To control for this type of internal threat in this study, all pilot testing of instruments and data collection procedures was conducted using volunteers who were not participants in the final research project. Participants involved in this study were provided access only for one session, so they could not return and change their answers (thus eliminating a practice effect).

Implementation. When one group of participants receives special treatment that is not part of the research study an implementation threat has occurred. In this study, the implementation was standardized for all participants so that no one received any preferential treatment.

External Validity

The external validity of a research study depends on the extent to which the results can be generalized (Fraenkel & Wallace, 1996). Creswell (2003) noted, “A threat to external validity arises when experimenters draw incorrect inferences from the sample data to other persons, other settings, and past or future situations” (p. 171). This study constitutes a pilot project for a larger longitudinal study, and the results need to generalize only to the specific population of 18-22 year old young adults from the rural Midwest, identifying with a same-sex attraction (lesbian, gay, or bisexual).

Delimitations

The scope of this study is confined to a very specific population; young adults between the ages of 18 and 22 years old, who have lived in the rural Midwest for a minimum of five years, and who identify with a same-sex attraction. This study does not attempt to explore the effects of the microsystems and macrosystems on the mental health of any other subgroup in the Midwest.

Limitations

There are four important limitations to this research project. First, the restriction by the ISU Institutional Review Board placed on the procedure for obtaining informed consent is most serious and has implications that may have affected the results of this study. Participants were required to correspond directly with the researcher to receive a hard copy of the informed consent that they had to then return via postal mail to the project office, prior to participation. There are a number of research projects for which the IRB has given approval that have allowed the researcher to obtain informed consent electronically. Specifically, participants indicate their acknowledgement of the informed consent and agreement to participate by clicking a “yes” response through the use of an online document. This method of informed consent has been particularly helpful with research on populations that are at risk (e.g., drug users, LGBT, etc.). In the case of individuals who are coming to terms with a same-sex attraction orientation, the ability to identify verbally or directly typically comes in the later stages (or processes) of LGB development (Cass, 1979; D’Augelli, 1991, 1994; Troiden, 1979, 1988, 1989). By restricting the informed consent process to exclude electronic agreement to participate (thus removing some level of anonymity), a potential limitation on this study is that only

individuals who are at later stages of LGB development were participants. As a consequence, one might assume that these participants are also more comfortable with who they are, and, as a result, have a more positive sexual minority identity and better mental health. This limitation may prohibit a holistic picture of rural LGB development. However, participants who are more open and “out” about their sexual minority status may have been exposed to greater levels of stigmatization, harassment, and abuse resulting in the potential for greater psychological distress.

The second major limitation of this study involved the issue of random sampling. Because sexual orientation is often a hidden identity, achieving a large enough participant pool is difficult using typical random sampling methods. In this study, participants were recruited through convenience sampling methods which typically are not generalizable due to the lack of random sampling methods. However, the vast majority of peer reviewed research conducted with sexual minority populations uses convenience sampling methods, because of the sensitivity of the topic and difficulty in finding participants using random sampling methods.

A small portion of the sample was recruited using a snowball sampling method. A critique of snowball sampling suggests that participants typically refer those that are in their social groups and tend to be more like them (Nardi, 2003), resulting in a more homogeneous sample. The intent of this study was to focus on the experiences of sexual minority youth in the rural Midwest. Since the demographics of the rural Midwest population are already somewhat homogeneous (results from the 2000 U.S. Census report that the state of Iowa ranks 46 out of 50 with regards to a diverse population), this may not be as significant a limitation to the study. Additionally, very few participants were

referred using the snowball sampling method; the majority responded to invitation emails on LGB listserves.

The third limitation involved the potential for a Type II error as discussed in the statistical power and sample size subsection of this chapter. The current sample yields power of .65, which is more than the average power of a vast majority of peer-reviewed publications using the SEM approach (Cohen, 1992; Nix & Barnette, 1998; Sedlmeier & Gigerenzer, 1989). A sample size that yields a power of .8 would be a stronger indicator that a type II error did not exist in the analysis. Using SAS syntax provided by MaCallum et al. (1996), which determines sample size based on RMSEA values, a power analysis suggests that a fully elaborated model with power of .8 would require a sample size of 99.

The cross-sectional design presents the final important limitation of this study. Collecting data at one time to determine a developmental trajectory for effects on mental health can determine only where the participants are at the time of data collection. Future research should encourage using this design with a longitudinal approach.

Summary

The purpose of this study was to identify the relationships between the microsystems and macrosystems and mental well-being for rural Midwest sexual minority college students. This chapter provided the methodological framework for testing the hypothesized relationships based on the literature reviewed in Chapter 2. A structural equation path model was estimated, to determine direct and indirect effects, while accounting for residual error. Results of the analysis and estimation of the path model are discussed in the next chapter.

CHAPTER 4

DATA ANALYSIS AND RESULTS

The purpose of this study was to explore the effects of the sexual minority college student's environment, using the student's micro- and macrosystems, on the student's mental well-being. Using previous theory (as presented in Chapter 2), I hypothesized that the sexual minority student's campus environment, family, LGB community involvement, religious emphasis, sex, and race/ethnicity would positively or negatively impact the student's mental health, depending upon the support or lack of support in each context. Chapter 3 described the methodology used to test this hypothesis. In this chapter, I present the results of the analyzed data and a final causal model.

This chapter is divided into three main sections. The first section summarizes the data screening and evaluation of normality assumptions, correlations, and covariances. The second section describes the preliminary analysis of the hypothesized path model, fit indices, and modifications to the model, which led to the development of a final path model used for regression analyses. The third section presents the decomposition of the total effects, identifying the direct and indirect effects of the exogenous (IV) variables on the endogenous (DV) variables, and answers the research questions posed in Chapter 1.

Data Screening and Assumptions of Normality

Prior to analyses of descriptive statistics, the data were screened for outliers and missing values. Preliminary analysis revealed no missing data for any of the variables. Using the Mahalanobis distance (which tests for observations farthest from the centroid), no outliers were detected ($p < .001$). Following the preliminary screening, descriptive statistics were generated for all variables (Table 4.1). It is important to note that in Table

4.1, the mean scores and standard deviations are based on participants' total scores. In estimating the model, participant mean scores, rather than total scores, were used for each variable. Table 4.3 shows the overall means and standard deviations based on the participant mean scores for each variable.

Table 4.1

Descriptive Statistics for Variables in the Model (n = 76)

Variables	Min	Max	Mean ^a	SD ^b
Sex (1=Female)	0.0	1.0	.43	.50
Race/Ethnicity (1 = Caucasian)	0.0	1.0	.84	.37
Campus Environment ^c	7.0	35.0	35.00	5.11
Family Support ^d	24.0	96.0	68.63	14.73
LGB Community Involvement ^e	0.0	124.0	27.66	25.76
Religious Emphasis ^f	0.0	50.0	18.46	14.00
Personal Epistemology ^g	10.0	34.0	21.95	5.20
Minority Stress ^h	6.0	42.0	20.07	8.26
Psychological Distress ⁱ	-1.7	2.8	.00	1.00
Suicidal Thoughts (1 = Yes)	0.0	1.0	.54	.50
Suicidal Attempts (1 = Yes)	0.0	1.0	.24	.43

^aMean based on total value for each scale.

^bStandard deviation based on total scores

^cScale: 1 = strongly agree, 2 = agree, 3 = uncertain, 4 = disagree, 5 = strongly disagree

^dScale: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree, 5 = Not applicable. 5's were declared as missing values

^eScale: Each answer was open ended, any response higher than 30 times was recoded to = 30

^fScale: 0 = no emphasis, 1 = a slight emphasis, 2 = a mild emphasis, 3 = a moderate emphasis, 4 = a strong emphasis, 5 = a very strong emphasis

^gScale: 1 = strongly disagree, 2 = disagree somewhat, 3 = neither agree nor disagree, 4 = agree somewhat, 5 = strongly agree

^hScale: 0 = No, 1 = Yes

ⁱVariable factored from the mean scores from depression and anxiety scales (see Appendixes B.5 and B.6)

Prior to estimating the path model, data were evaluated for normality. Table 4.2 reports the skewness and kurtosis values for each variable. Skew denotes the shape of the distribution of scores about its mean. A positive skew would indicate that most scores are

below the mean, whereas, a negative skew would indicate most scores are above the mean. A skew value of zero indicates a symmetrical distribution, and typically variables with skew values greater than 3.0 are considered extremely skewed (Kline, 2005). In a distribution of scores, “positive kurtosis indicates heavier tails and a higher peak and negative kurtosis indicates just the opposite” (Kline, p. 49). Kurtosis is also based on a standardized scale, but unlike skewness where the basis is zero, the standardized kurtosis index in a normal distribution is 3.0. Values greater than 3.0 indicate positive kurtosis, and values less than 3.0 indicate negative kurtosis. However, some statistical programs subtract 3.0 before presenting results, and such is the case with AMOS 5.0 the statistical software used for the analysis in this study. Analysis of the skew and kurtosis values for all variables demonstrate acceptable parameters for normality assumptions, thus ensuring the data can be analyzed using SEM.

Table 4.2

Assessment of Normality for Variables in the Model (n = 76)

Variables	Skew	C.R.	Kurtosis	C.R.
Sex (1=Female)	.265	.945	-1.930	-3.434
Race/Ethnicity (1 = Caucasian)	-1.876	-6.678	1.521	2.706
Campus Environment	.229	.815	.693	1.233
Family Support	-.422	-1.537	.713	1.269
LGB Community Involvement	1.539	5.479	2.214	3.940
Religious Emphasis	.383	1.362	-.958	-1.705
Personal Epistemology	.008	.030	-.003	-.006
Minority Stress*	.406	1.446	-.510	-.908
Psychological Distress*	.497	1.769	-.233	-.415
Suicidal Thoughts (1 = Yes)*	-.158	-.564	-1.975	-3.514
Suicidal Attempts (1 = Yes)*	1.238	4.406	-.467	-.832

*Endogenous Variables

Correlations

Intercorrelations among the variables are examined to ensure that there were no occurrences of multicollinearity (two separate variables are so highly correlated that they measure the same construct). Intercorrelations in this study are presented in a correlation matrix format in Table 4.3. The means and standard deviations are presented again; however, in Table 4.3 they are listed based on the mean of the overall variable mean and not the overall total value of the variable as noted in Table 4.1. A review of the Pearson bivariate correlations presented in Table 4.3 demonstrate no multicollinearity between variables, thus meeting another requirement for the use of SEM (Kline, 2005).

The only significant correlation for the exogenous variable sex was with minority stress. Males in this study reported a higher degree of minority stress ($r = -.23$) than females reported. The exogenous variable of religious emphasis correlated significantly with race/ethnicity ($r = -.24$) and minority stress ($r = .31$). This indicated that participants who did not identify as Caucasian (i.e., students of color) reported a stronger emphasis on religion in their family homes than Caucasian students did; furthermore, participants who reported a greater focus on religion in their family homes also reported higher levels of minority stress. The endogenous variables of minority stress and psychological distress correlated significantly with the exogenous variable of campus environment. Analysis suggested that campus environments that were less supportive of sexual minority college students were associated with higher degrees of minority stress ($r = .33$) and psychological distress ($r = .26$) than campuses that presented a more positive environment for sexual minority college students. Analysis also indicated that a greater

Table 4.3

Intercorrelation Matrix (n = 76)

	1	2	3	4	5	6	7	8	9	10	11
1 Sex (1 = Female)	--										
2 Race/Ethnicity (1 = Caucasian)	-.13	--									
3 Campus Environment	-.06	.01	--								
4 Family Support	-.21	.01	-.20	--							
5 LGB Community Involvement	.08	-.16	-.03	-.02	--						
6 Religious Emphasis	-.10	-.24*	.04	-.01	-.03	--					
7 Personal Epistemology	-.19	-.12	.02	.03	-.07	.09	--				
8 Minority Stress	-.23*	-.04	.33**	-.35**	.19	.31**	-.02	--			
9 Psychological Distress	.01	-.03	.26*	-.34**	-.06	.02	.12	.39**	--		
10 Suicidal Thoughts (1 = Yes)	.22	-.04	-.02	-.10	.21	.14	.05	.08	.29**	--	
11 Suicidal Attempts (1 = Yes)	.20	-.10	-.15	.07	.18	.12	.31**	-.11	.24*	.52**	--
Mean ^a	.43	.84	2.80	2.97	2.78	1.86	2.19	.36	.00	.54	.24
Standard Deviation ^b	.50	.37	.69	.55	2.60	1.41	.52	.15	1.00	.50	.43

Note: * $p < .05$; ** $p < .01$

^aMean is based on the mean of the variable means

^bStandard deviation is based on the standard deviation of the variable mean

degree of family support related negatively with minority stress ($r = -.35$) and psychological distress ($r = -.34$). This suggests that participants who reported a greater degree of support from their families also reported a lesser degree of minority stress and/or psychological distress than participants who reported less support from their families. The variable of personal epistemology correlated significantly with suicidal attempts ($r = .31$); suggesting that participants who identified closer to an absolutist perspective reported more suicidal attempts than participants who were less naive (relativist, post-relativist) in their personal epistemological development. The variable of minority stress correlated significantly with psychological distress ($r = .39$), suggesting that participants who reported more minority stressors in their lives also reported higher levels of psychological distress. Analysis also indicated that the variables of suicidal thoughts ($r = .29$) and suicidal attempts ($r = .24$) correlated significantly with psychological distress. This suggests a positive relationship between participant reports of higher levels of psychological distress and suicidal thoughts and attempts. Finally, analysis indicated a significant positive correlation between suicidal thoughts and suicidal attempts ($r = .52$).

Covariances

All covariances between exogenous variables as identified by the curved arrows in Figure 4.1 were tested for significance. The only significant covariance was between race and religiosity and this is illustrated in Figure 4.2.

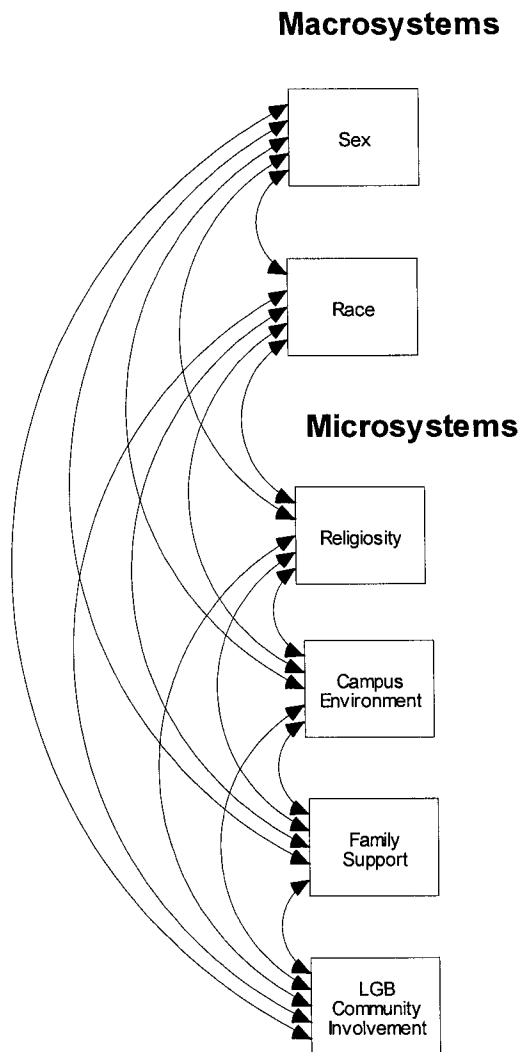


Figure 4.1 Identification of Covariances for Exogenous Variables in the Hypothesized Path Model

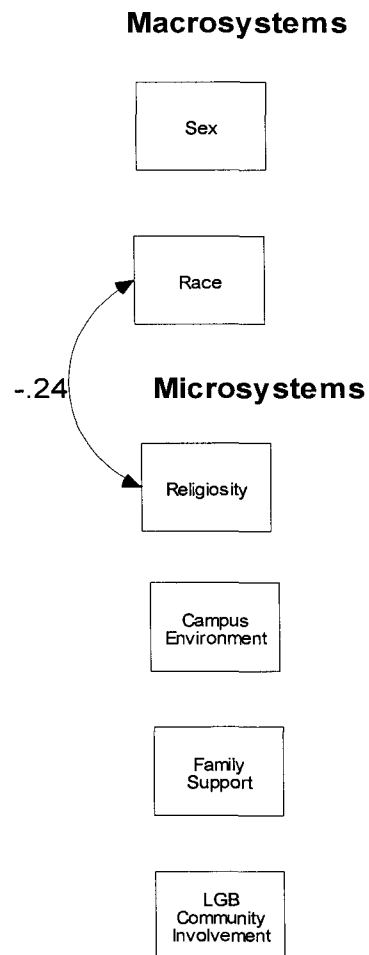


Figure 4.2 Estimated Covariance for Exogenous Variables in the Hypothesized Path Model

Model Estimation and Evaluation

After data were screened and assumptions of normality were met (as previously discussed), the proposed path model in Chapter 3 (Figure 3.1) was estimated using the

maximum likelihood (ML) estimation method. This section will describe and explain the estimation, evaluation, and decomposition of the path model.

The hypothesized path model (Figure 3.1) was estimated to determine the extent to which the data fit the model as hypothesized based on the theoretical framework outlined in Chapter 2. The first, and most recognized, fit statistic used to evaluate the model was the chi-square (χ^2) goodness-of-fit index; often referred to as the likelihood ratio chi-square or generalized chi-square (Kline, 2005). Chi-square tests the null hypothesis that the model is correct; a desired fit would produce a χ^2 with a non-significant p-value ($p > .05$). The initial analysis of the hypothesized path model determined that $\chi^2 = 50.254$ ($p = 0.107$, $df = 39$). The non-significant χ^2 statistic suggested the null hypothesis should fail to be rejected; as a result, the fit of the data with the hypothesized model was adequate. This demonstrated that the hypothesis was correct.

In using SEM, modification indices can be used to provide a better fit of the data to the model (Tabachnick & Fidell, 2001). Review of modification indices suggested an additional path that should be represented in the model. Furthermore, some of the hypothesized paths were determined to be non-significant and removal would produce a more parsimonious model. Post hoc model modifications were performed, while continuing to maintain a theoretical basis, in an attempt to develop a better fitting, more parsimonious model.

The final model presented in Figure 4.3 illustrates the revisions, removal of nonsignificant paths, and path coefficients for significant paths in standardized form. A final statistical analysis conducted on the revised model demonstrated a model that better fit the data with $\chi^2 = 46.740$ ($p = 0.321$, $df = 43$).

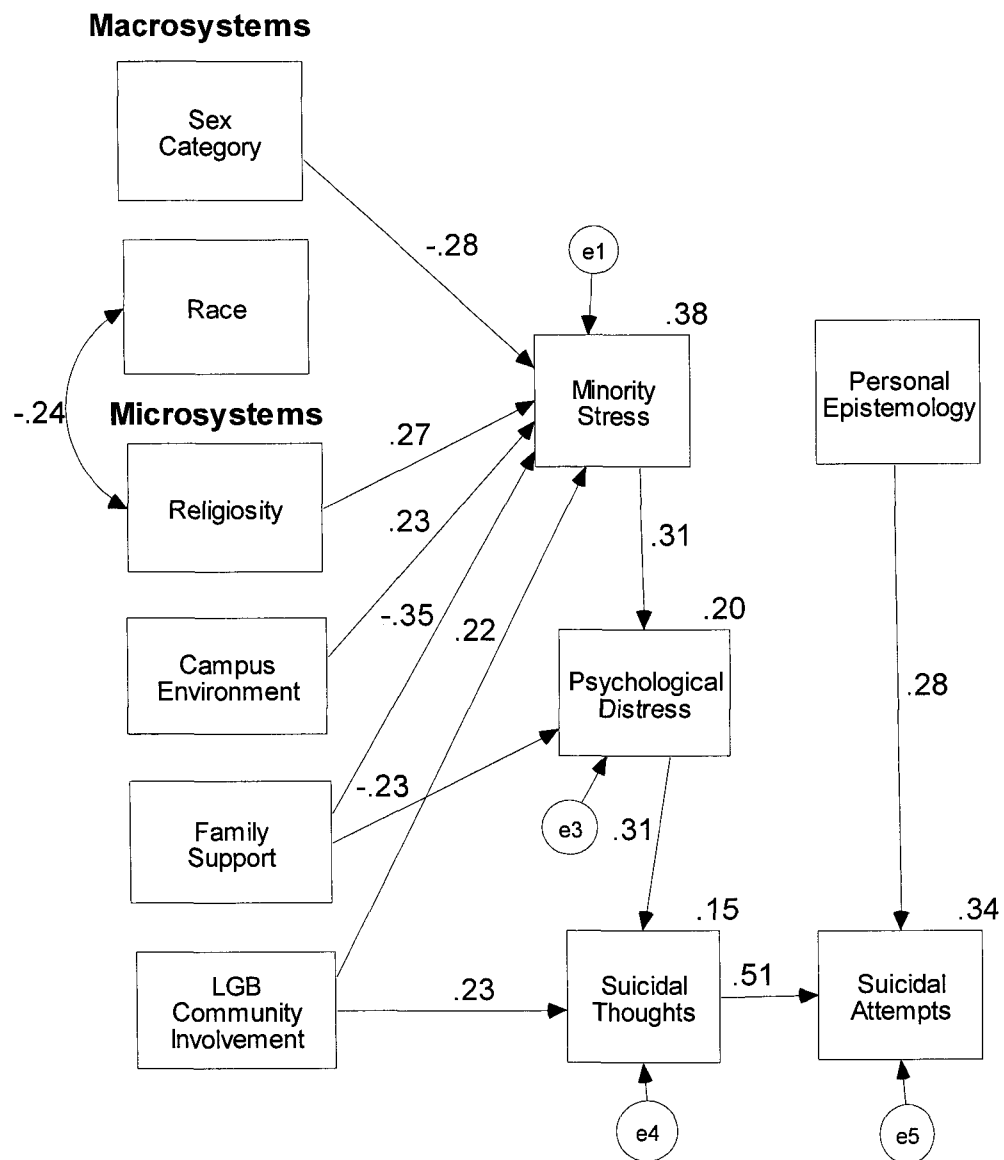


Figure 4.3 Final Path Model

Several model fit indices were used to determine how well the data fit the hypothesized path model and the final path model. Table 4.4 provides the different values

for each of the fit indices used between the hypothesized model in Figure 3.1 and the final revised model in Figure 4.3.

Table 4.4

Comparison of Goodness-of-Fit Indices Across Models

Model	χ^2	df	<i>p</i> -value	CMIN/DF	CFI	RMSEA	RMSEA 90% CI	IFI
Proposed (Figure 3.1)	50.254	39	0.107	1.289	0.878	0.062	0.107	.896
Final (Figure 4.3)	46.740	43	0.321	1.087	0.959	0.034	0.082	.964

The CMIN/DF fit index is basically a relative chi-square (χ^2/df) ratio. Research has suggested the ratio should be close to one for correct models (Arbuckle & Wothke, 1999). In this study, the final model provided a CMIN/DF value of 1.087, indicating a better fit of the model with the data than the 1.289 CMIN/DF from the hypothesized model.

The Comparative Fit Index (CFI) is one of the most widely used fit indices in SEM (Kline, 2005). The CFI is used to assess the relative improvement in fit of the researcher's model compared with a baseline model; AMOS 5.0 refers to this baseline model as the independence model. It is generally recognized that CFI values greater than .90 may indicate a reasonably good fit of the model (Arbuckle & Wothke 1999; Kline); however, Hu and Bentler (1999, as cited in Kline) advised a cutoff value of .95 for a

well-fitting model. The final model in this study provided a CFI value of .959; this value was above the more stringent cutoff value recommended by Hu and Bentler.

The Root Mean Square Error of Approximation (RMSEA) is a “badness of fit” index; specifically, values closer to zero indicate the best fit and higher values indicate a worse fit” (Kline, 2005, p. 138). The RMSEA index is increasingly acknowledged as “one of the most informative criteria in covariance structure modeling” (Byrne, 2001, p. 84). A rule of thumb for judging RMSEA values is $RMSEA \leq .05$ indicates a close approximate fit, values between .05 and .08 suggest a reasonable error of approximation, and $RMSEA \geq 1.0$ suggest a model of poor fit (Brown & Cudeck, 1993, as cited in Kline). Steiger (1990, as cited in Byrne) called for the use of confidence intervals to assess the precision of RMSEA estimates. Confidence intervals for specific fit indices help to assess the imprecision of the point estimate in the estimated model, providing additional information on the data and model goodness of fit. AMOS 5.0 statistical software computes the confidence intervals for RMSEA, which provides input on whether or not to reject the hypothesis of poor approximate fit. Because the 90% RMSEA confidence interval for the initial path model (Figure 3.1) had a $RMSEA \geq 1.0$, I could not fail to reject the hypothesis of a poor approximate fit of the hypothesized model, even though the $RMSEA = .062$ suggested (using the rule of thumb) that the model had a potential reasonable fit with some potential for error. The final model (Figure 4.3); however, proved to be a much better fit based on the RMSEA 90% confidence = .08, and the $RMSEA = .034$. This indicated that the 90% confidence interval did not exceed the cutoff value for the model of poor fit. Furthermore, the RMSEA p value = .633 in the

final estimated model (Figure 4.1), which Joreskog and Sorbom (1996a, as cited in Byrne) suggested should be $> .50$.

The Incremental Fit Index (IFI) developed by Bollen (1989) addresses issues of parsimony and sample size. IFI values close to one suggest that the hypothesized model represents an adequate fit to the data. As shown in Table 4.4, the IFI value improved from .896 in the initial hypothesized model to .964 in the final model, thus indicating the revised model provided a better fit with the data.

Decomposition of Effects and Research Questions

Analysis of a path model involves testing for significant direct and indirect effects. A direct effect examines the relationship between an exogenous variable and an endogenous variable and is represented visually, in a recursive path model, by a single line from the exogenous variable to the endogenous variable. This line is often referred to as a path, and statistical estimates of direct effects are path coefficients. "Path coefficients are then interpreted as regression coefficients in multiple regression, which means they control for correlations among multiple presumed causes of the same variable" (Kline, 2005, p. 68). Sometimes a variable can have a dual role both as an endogenous variable and as a predictor variable for another endogenous variable. This dual role is described in path analysis as an indirect effect or mediator effect. Indirect effects involve one or more mediator variables presumed to transmit some of the causal effects of prior variables onto subsequent variables (Kline). For example, in Figure 4.3 the variable of minority stress serves dual roles as an endogenous variable and as a predictor variable for the endogenous variable of psychological distress. The total influence of a variable on an endogenous variable is the combination of the significant direct and indirect effects.

In this section the results of the total, direct, and indirect effects for all variables that had a significant effect on each of the endogenous variables of minority stress, psychological distress, suicidal thoughts, and suicidal attempts are presented in Tables 4.5, 4.6, 4.7, and 4.8. In addition, the results are discussed and used to answer the research questions that were defined in Chapter 1.

Minority Stress

The first research question asked, “Do the exogenous variables of family support, LGB community involvement, college campus environment, religion, sex, and race/ethnicity have a significant direct effect on the level of minority stress experienced by sexual minority college students?”

Table 4.5 displays the statistically significant direct effects for all variables on the endogenous variable of minority stress. It is important to note that there are only direct effects on the variable of minority stress as no mediating variables were hypothesized. With the exception of race/ethnicity, results indicated that all of the variables hypothesized (sex, religious emphasis, college campus environment, LGB community involvement, and family support) had a significant direct effect on minority stress. While race/ethnicity did not have a direct effect, it did have a significant covariance with religious emphasis ($r = -.24$). Since race/ethnicity is a dichotomous variable (“0” = not White), the negative sign denotes a relationship between sexual minority college students of color and religious emphasis. More specifically, sexual minority college students of color reported more religious emphasis in their family homes. Religious emphasis ($\beta = .27$) in the family home had a direct effect on minority stress. Sexual minority college students who reported a stronger emphasis on religion in the family home were more

likely to report higher levels of minority stress. Sex ($\beta = -.28$), also a dichotomous variable (“0” = male), was an important indicator of increased levels of minority stress. More male participants in the study than female participants reported higher levels of minority stress. Minority stress also increased as participants reported more exposure to negative college campus environments ($\beta = .23$) and more involvement with a LGB community ($\beta = .22$). Family support ($\beta = -.35$); however, provided a buffer to minority stress as participants who conveyed more support from family also indicated less minority stress.

Table 4.5

Decomposition of Total Effects (Standardized, β and Unstandardized, B) for the Endogenous Variable Minority Stress ($n = 76$, $R^2_{smc} = .378$)

Predictor Variable	Standardized, β Unstandardized, B	Total Effect	Direct Effect	Indirect Effect	C.R.	DE as % of TE
Sex (1 = Female)	β	-.28	-.28	-		100.0
	Unstandardized	-.08	-.08	-	-3.05**	
Religious Emphasis	β	.27	.27	-		100.0
	Unstandardized	.03	.03	-	3.01**	
Campus Environment	β	.23	.23	-		100.0
	Unstandardized	.05	.05	-	2.57*	
Family Support	β	-.35	-.35	-		100.0
	Unstandardized	-.09	-.09	-	-3.85**	
LGB Community Involvement	β	.22	.22	-		100.0
	Unstandardized	.01	.01	-	2.39*	

Note: Total effect = direct effect + indirect effect; R^2_{smc} = squared multiple correlations

* $p < .05$ (i.e., critical ratio ≥ 1.96)

** $p < .01$ (i.e., critical ratio ≥ 2.58)

Psychological Distress

The second research question asked, “Does minority stress have a significant direct effect on the level of psychological distress experienced by sexual minority college students?”

Table 4.6 presents the statistically significant total effects (direct and indirect) for all exogenous variables on psychological distress. Results indicated that minority stress ($\beta = .31$) had a direct effect on psychological distress. By reviewing the unstandardized coefficient for minority stress ($B = 2.12$), one can note that for every 1 point increase in minority stress, psychological distress increased by 2.12.

Table 4.6

Decomposition of Total Effects (Standardized, β and Unstandardized, B) for the Endogenous Variable Psychological Distress ($n = 76$, $R^2_{smc} = .202$)

Predictor Variable	Standardized, β Unstandardized, B	Total Effect	Direct Effect	Indirect Effect	C.R.	DE as % of TE
Sex (1 = Female)	β	-.09	-	-.09		00.0
	Unstandardized	-.17	-	-.17	6.47**	
Religious Emphasis	β	.08	-	.08		00.0
	Unstandardized	.06	-	.06	6.38**	
Campus Environment	β	.07	-	.07		00.0
	Unstandardized	.11	-	.11	5.45**	
Family Support	β	-.34	-.23	-.11		67.6
	Unstandardized	-.62	-.42	-.20	-2.11**	
LGB Community Involvement	β	.07	-	.07		00.0
	Unstandardized	.03	-	.03	5.06**	
Minority Stress	β	.31	.31	-		100.0
	Unstandardized	2.12	2.12	-	2.82**	

Note: Total effect = direct effect + indirect effect; R^2_{smc} = squared multiple correlations

* $p < .05$ (i.e., critical ratio ≥ 1.96)

** $p < .01$ (i.e., critical ratio ≥ 2.58)

The third research question asked, in addition to the potential direct effect from minority stress, “Do the exogenous variables of family support, LGB community involvement, college campus environment, religion, sex, and race/ethnicity have a significant direct effect on the sexual minority college student’s level of psychological distress and/or an indirect effect through the mediation of minority stress?”

Table 4.6 results indicated that the only exogenous variable, other than minority stress, to have a direct effect on psychological distress was family support ($\beta = -.23$) and this effect resulted in a negative relationship. This relationship reveals that participants who reported a supportive family environment indicated less psychological distress than participants who expressed less supportive family environments. The unstandardized coefficient denotes that for every 1 point increase in family support ($B = -.42$), psychological distress decreased by .42. Family support ($\beta = -.11$) also had an indirect effect on psychological distress through the mediation of minority stress. Indirect effects are in addition to any direct effects already incurred from the exogenous variable. Therefore, the total effect (the sum of both the indirect and direct effects) for family support on psychological distress equals $-.34$. The unstandardized coefficient ($B = -.62$) signified that for every 1 point increase in family support, psychological distress decreased by .62 points.

All other effects on psychological distress were indirect effects. Results in Table 4.6 revealed that religious emphasis ($\beta = .08$), campus environment ($\beta = .07$), sex ($\beta = -.09$), and LGB community involvement ($\beta = .07$) all produced significant indirect effects. While the indirect effects are significant, there were no significant direct effects on psychological distress (other than family support, which provided a buffer). This lack of

significant direct effects from the microsystems of campus environment, religious emphasis, and LGB community support on psychological distress, and the significant direct effect from minority stress to psychological distress suggest that the psychological distress reported by participants in this study came from minority stressors (as Meyer suggested) and not stressors incurred on an everyday basis that confront all groups (majority and minority).

The fourth research question asked, “Does the variable of personal epistemology (sexual minority college student’s level of epistemological development) mediate the effects of minority stress on (a) psychological distress, (b) suicidal thoughts, and/or (c) suicidal attempts?”

Results indicated that personal epistemology did not significantly mediate the effects of minority stress on any of the hypothesized variables of psychological distress, suicidal thoughts, or suicidal attempts. Personal epistemology, however, had a significant direct effect on suicidal attempts. This finding is discussed further in the next section.

Suicidal Thoughts and Suicidal Attempts

The fifth and final research question asked, “What are the effects of minority stress and psychological distress on suicidal thoughts and suicidal attempts for sexual minority college students?”

Tables 4.7 and 4.8 detail the total effects (direct and indirect) for the endogenous variables of suicidal thoughts and suicidal attempts. Results indicated that psychological distress had a significant direct effect ($\beta = .31$) on suicidal thoughts (see Table 4.7) and an indirect effect ($B = .16$) on suicidal attempts (see Table 4.8). As psychological distress increased so did suicidal thoughts and suicidal attempts.

Table 4.7

Decomposition of Total Effects (Standardized, β and Unstandardized, B) for the Endogenous Variable Suicidal Thoughts ($n = 76$, $R^2_{smc} = .154$)

Predictor Variable	Standardized, β Unstandardized, B	Total Effect	Direct Effect	Indirect Effect	C.R.	DE as % of TE
Sex (1 = Female)	β	-.03	-	-.03		00.0
	Unstandardized	-.03	-	-.03	***	
Religious Emphasis	β	.03	-	.03		00.0
	Unstandardized	.01	-	.01	***	
Campus Environment	β	.02	-	.02		00.0
	Unstandardized	.02	-	.02	***	
Family Support	β	-.10	-	-.10		00.0
	Unstandardized	-.10	-	-.10	***	
LGB Community Involvement	β	.25	.23	.02		92.0
	Unstandardized	.05	.04	.01	2.12*	
Minority Stress	β	.10	-	.10		00.0
	Unstandardized	.33	-	.33	6.10**	
Psychological Distress	β	.31	.31	-		100.0
	Unstandardized	.16	.16	-	2.87**	

Note: Total effect = direct effect + indirect effect; R^2_{smc} = squared multiple correlations

* $p < .05$ (i.e., critical ratio ≥ 1.96)

** $p < .01$ (i.e., critical ratio ≥ 2.58)

***Per Kline (2005) there is no hand-calculable test of the statistical significance of indirect effects through two or more mediators. Cohen and Cohen (1983, as cited in Kline) noted that "if all of the component unstandardized path coefficients are statistically significant at the same α , then the whole indirect effect can be taken as statistically significant at that level of α , too" (p. 162).

Though it was not a hypothesized relationship, modification indices noted that LGB community involvement ($\beta = .23$) had a significant direct effect on the endogenous variable of suicidal thoughts. Results indicated that an increase in LGB community involvement was associated with an increased in suicidal thoughts. LGB community involvement also had an indirect effect ($\beta = .02$) therefore, producing a total effect of $\beta = .25$. Other variables that had positive indirect effects (as involvement increased suicidal thoughts increased) on suicidal thoughts were sex ($\beta = -.03$, indicating males), religious

emphasis ($\beta = .03$), campus environment ($\beta = .02$), and minority stress ($\beta = .10$). Once again, family support ($\beta = -.10$) produced a negative indirect effect suggesting that it provided a buffer to suicidal thoughts for sexual minority college students.

Table 4.8

Decomposition of Total Effects (Standardized, β and Unstandardized, B) for the Endogenous Variable Suicidal Attempts ($n = 76$, $R^2_{smc} = .336$)

Predictor Variable	Standardized, β Unstandardized, B	Total Effect	Direct Effect	Indirect Effect	C.R.	DE as % of TE
Sex (1 = Female)	β	-.01	-	-.01		00.0
	Unstandardized	-.01	-	-.01	***	
Religious Emphasis	β	.01	-	.01		00.0
	Unstandardized	.00	-	.00	***	
Campus Environment	β	.01	-	.01		00.0
	Unstandardized	.01	-	.01	***	
Family Support	β	-.05	-	-.05		00.0
	Unstandardized	-.04	-	-.04	***	
LGB Community Involvement	β	.13	-	.13		00.0
	Unstandardized	.02	-	.02	***	
Minority Stress	β	.05	-	.05		00.0
	Unstandardized	.14	-	.14	***	
Psychological Distress	β	.16	-	.16		00.0
	Unstandardized	.07	-	.07	1.51	
Personal Epistemology	β	.28	.28	-		100.0
	Unstandardized	.02	.02	-	2.98**	
Suicidal Thoughts	β	.51	.51	-		100.0
	Unstandardized	.43	.43	-	5.39**	

Note: Total effect = direct effect + indirect effect; R^2_{smc} = squared multiple correlations

* $p < .05$ (i.e., critical ratio ≥ 1.96)

** $p < .01$ (i.e., critical ratio ≥ 2.58)

***Per Kline (2005), there is no hand-calculable test of the statistical significance of indirect effects through two or more mediators. Cohen and Cohen (1983, as cited in Kline) noted that "if all of the component unstandardized path coefficients are statistically significant at the same α , then the whole indirect effect can be taken as statistically significant at that level of α , too" (p. 162).

Results indicated that personal epistemology ($\beta = .28$) had a significant direct effect on suicidal attempts. Though personal epistemology was only hypothesized as a mediating variable, results indicated a direct relationship with suicidal attempts. This direct effect revealed that participants who identified a more absolutist perspective on the personal epistemology scale also indicated more suicidal attempts. As one would assume, there was a positive direct relationship between suicidal thoughts ($\beta = .51$) and suicidal attempts. All variables in the model had some level of indirect effect on suicidal attempts, though Kline (2005) noted that there is no method for hand calculating the critical ratio used to indicate whether the indirect path is significant or not. Cohen and Cohen (1983, as cited in Kline), suggested that “if all of the component unstandardized path coefficients are statistically significant at the same α , then the whole indirect effect can be taken as statistically significant at that level of α , too” (p. 162). Based on Cohen and Cohen’s recommendation, then all variables in the model (see Table 4.8) had a significant indirect effect on suicidal attempts with the exception of psychological distress whose indirect path was not significant, the calculated critical ratio of 1.51 is not ≥ 1.96 . This result is based on a two-tail test; however, if an adjustment is made to test the path using a one-tail test, noting that the direction is a positive relationship as theory would support, then it is quite possible that this path would indicate a significant indirect relationship.

Summary

Results indicated that the initial hypothesized model was a good fit for the data; however, with the minimal use of modification indices and removal of a few nonsignificant paths the revised model provided a more parsimonious fit with the data as indicated by the values for each of the fit indices described in this chapter. Results of

analyzed data from the estimated model revealed that the microsystems of college campus environment, religious (emphasis) environment, and LGB community involvement and the macrosystem of sex category contributed to the participant's minority stress(ors); whereas, the microsystem of family support was a protective factor in reducing minority stress(ors). Results further revealed a direct effect from minority stress to psychological distress. The only microsystem that revealed a significant direct effect on psychological distress was family support, again serving to reduce the level of a participant's psychological distress. Results also indicated that psychological distress had a significant direct effect on suicidal thoughts which in turn had a direct effect on suicidal attempts. The hypothesized relationships of personal epistemology as a mediating variable between minority stress and psychological distress, suicidal thoughts, and suicidal attempts were not significant. However, personal epistemology as an exogenous variable produced a significant direct effect on the endogenous variable of suicidal attempts. The results presented in this chapter and summarized here will be discussed in greater detail in the following chapter, as well as, the implications of these results for theory, research, and practice.

CHAPTER 5

DISCUSSION AND CONCLUSION

“I’ve learned that: my religious tradition taught me to believe that my son was a sinner; my medical support system taught me to believe that my son was sick; my educational system taught me that my son was abnormal; my legal system views my son and his partner in an unsanctioned relationship without legal rights and protection that are afforded my married daughter; my family, immediate and extended, provided no acknowledgment or support for having a gay relative in its midst; my major communications sources treated homosexuality as deviant.” -- father of a gay son

Testimony from the public hearings conducted by the Massachusetts Governor's Commission on Gay and Lesbian Youth, 1992.

(Retrieved from <http://www.youth.org/loco/PERSONProject/Resources/OrganizingResources/facts.html>)

The purpose of this study was to gain an understanding of the environmental factors in the developmental trajectories of sexual minority college students (ages 18-22) from the rural Midwest that affect their mental well-being. Using Bronfenbrenner’s (2005) bioecological systems theory of human development, I designed this study to identify the impact of select micro- and macrosystems of sexual minority college students from the rural Midwest on their mental health.

Some of the most significant issues that challenge the mental well-being of sexual minority youth stem from a societal and institutional reinforcement of stigmatization and marginalization. Goffman (1963, as cited in Link & Phelan, 2001) defined stigma as an “attribute that is deeply discrediting” and reduces the bearer “from a whole and usual person to a tainted, and discounted one” (p. 364). As a result of growing up in a society in which one is stigmatized and where only majority cultural norms are supported and reinforced (implicitly and explicitly), sexual minority youth are often conflicted in their personal development. This lack of societal (and in some cases family) validation and stigmatization has potential dire consequences for adverse mental health outcomes. For these reasons, I sought answers to which of the micro- and macrosystems identified in

this study perpetuate minority stress(ors) that contribute to psychological distress and suicidality, and which systems aid toward deconstructing the stigma of a sexual minority identity, thus reducing minority stressors and the conceivable negative consequences of these stressors.

Review of the Study

In Chapter 1, I identified the purpose and the problem that motivated this research, and the research questions. I also explained how Bronfenbrenner's bioecological systems theory of human development provided the theoretical framework for the study. I began Chapter 2 by reviewing the three most cited theories and models on sexual minority identity development: Cass (1979), D'Augelli (1994), and McCarn and Fassinger (1996). Reviewing these models provided a foundation for understanding the personal and social developmental processes sexual minority youth experience while negotiating a sexual identity that is not represented by or acknowledged in the majority norms. Following the review of the sexual minority identity development models, I reviewed the literature on mental health and sexual minority persons to provide supporting evidence for the problem this research addressed. I then provided an explanation of stress, minority stress, and stress and cognition. After linking stress with cognition, I described the four seminal works on cognitive development with regards to college students: Perry (1970), Belenky et al. (1986), Baxter Magolda (1992), and King and Kitchener (1994), to provide the foundation for the hypothesis of personal epistemology as a mediating variable between minority stress and the mental health outcomes. In the remainder of Chapter 2, I reviewed and discussed the LGB literature for each of the micro- and macrosystems included in the hypothesized model (Figure 3.1),

providing the theoretical basis for the hypothesized model. The hypothesized model and an explanation of structural equation modeling for path models were presented in Chapter 3, along with a detailed description of the instruments used for data collection, the participants in the study, sample size and statistical power, and the procedure used to collect data. Chapter 3 concluded with a discussion of validity issues and the limitations of the study. In Chapter 4, I presented the results of the analyzed data, and each research question was answered using the results. In this final chapter, I discuss the research results in more detail, the theoretical and research implications of the study, suggestions for future research, and the implications for practice. I also touch briefly on the concept of whether sexual minority youth are victims or resilient actors, which is the source of a great deal of debate among those who research this population. I close with a summary of the chapter and a concluding thought on the research.

Discussion of Results

This section is divided into two subsections in which I summarize and discuss the results as they relate to each of the four endogenous variables in this study. In the first subsection, I review the concept of minority stress and examine how each of the micro- and macrosystems played a part in contributing to or reducing minority stress(ors). In the second subsection, I discuss the impact of minority stress(ors) on the adverse mental health outcomes of psychological distress (anxiety and depression) and suicidal thoughts and attempts.

Minority Stress

Research has shown that there is a disproportion between the mental health of sexual minority individuals and heterosexual individuals, with slightly higher rates of

major depression, anxiety, substance abuse, suicide attempts and completions, and risky sexual behavior for sexual minority persons (e.g., Meyer, 2003). As discussed in Chapter 2, Meyer posited that this increase is due to minority stress. Meyer used the concept of minority stress to “distinguish the excess stress to which individuals from stigmatized social categories are exposed as a result of their social, often a minority, position” (p. 675). In this section, I explain how the results of this study provide support for Meyer’s claim of minority stress, and how it relates to sexual minority college students from the rural Midwest.

To substantiate Meyer’s claim that minority stress is responsible for the higher rates of adverse mental health outcomes in sexual minority people, the results of this study had to demonstrate that the psychological distress reported by participants was related to minority stress(ors) and not everyday life stress(ors) experienced by all groups. To do this, first direct paths in the model (Figure 3.1) were hypothesized from the exogenous microsystems variables of religious emphasis, campus environment, LGB community involvement, and family support to the endogenous variables of minority stress and psychological distress. Second, when estimated, the results needed to confirm statistically significant direct effects (paths) from the microsystems to minority stress and no significant direct effects (paths) to psychological distress. Third, the path from minority stress to psychological distress had to verify a significant direct effect. As it turned out, all microsystems with the exception of family support showed significant direct effects to minority stress and not to psychological distress. Family support revealed significant direct effects for both minority stress and psychological distress. At the outset, family support was hypothesized as a potential shield for (or reducer of) minority

stress(ors) and not a negative contributor. The results of family support validate this hypothesis indicating that it is both a buffer for minority stress(ors) and psychological distress. This result emphasizes what we know about the magnitude of influence the family microsystem has on the sexual minority individual. Given the results of the positive direct relationships between the other microsystems and minority stress and no direct effects with psychological distress, one can deduce that the psychological distress the participants reported in this study was in direct relation to minority stress(ors) in their microsystems of religious emphasis, campus environment, and LGB community, and was not from the general everyday stress(ors) experienced in these environments. This conclusion is important because it provides support for Meyer's claim that the disparity between the slightly higher rates for adverse mental health outcomes in sexual minority persons are a result of minority stress(ors) in society. It is important then to discuss the individual impact of each of the micro- and macrosystems on minority stress.

Religious emphasis. The results of this study indicated a statistically significant positive relationship between emphasis on religion in the family home and minority stress(ors). Religion has a strong influence on the well-being of youths (Fox, Connolly, & Snyder, 2005), whether sexual minority or heterosexual. In a recent report published by the National Center for Educational Statistics (NCES) focusing on the indicators that impact the well-being of youth, Fox et al. noted that in 2001 nearly half (48.9%) of high school seniors attended religious services at least once a month. Moreover, only 15.5% of high school seniors indicated that religion was not important to them.

In Chapter 2, I explained that growing up in a family that places a strong emphasis on religion generates an additional conflict for sexual minority youth. While

some religious institutions are revisiting their doctrines concerning same-sex relationships, a vast majority continue to maintain the tenet that same-sex relationships are a sin. For sexual minority youth, a strong emphasis on religion in the home (with doctrines that condemn same-sex attractions) leads to a dual conflict because of the divergence between a sexual minority identity and the lack of acceptance by religious institutions. This dissonance produces a double loss for the sexual minority youth; specifically, a loss of a spiritual identity (Love et al., 2005; Ritter & O'Neal, 1989) and the loss of an ascribed heterosexual identity (D'Augelli, 1994). D'Augelli indicated one of the processes an individual must go through toward development of a LGB identity is to "exit a heterosexual identity." D'Augelli's claim that a sexual minority individual must exit a heterosexual identity is based on society's automatic assumptions of heterosexuality. The sexual minority individual at some point in the development process must exit the ascribed heterosexual identity, thus losing majority privileges. Acceptance and support from family, peers, and teachers are helpful in coming to terms with the loss of a heterosexual identity and developing a positive sexual minority identity. For resolving the loss of a religious identity, it might be beneficial for sexual minority college students to explore the broader concept of spirituality that is gaining attention on college campuses and in student affairs work (c.f., Bryant, Choi, & Yasuno, 2003; Tisdell, 2003).

While religion tends to focus on the specific doctrines for each faith, spirituality has been defined in myriad ways that describe it separately from religion. A common theme among definitions of spirituality is "a search for meaning and purpose" (Love et al., 2005). In recent research focusing on spirituality and LGB college students, Love et al. introduced a "working definition" of spirituality as, "our drive for meaning,

authenticity, purpose, wholeness, and self-transcendence. It involves our self-awareness and the desire to connect with others” (p. 197). It is the latter part of Love et al.’s definition, “the desire to connect with others,” that is poignant for sexual minority youth. Many LGB youth, particularly those in rural areas, feel that they are the only ones who are “gay.” When individuals are feeling alone and lacking a support system (i.e., a connection with others) they often turn to religion and a higher power for support. For the sexual minority youth who have been shunned by their religion and denied access to religious services, turning to organized religion for support is not an option. Providing an alternative perspective on the difference between religion and spirituality, and subsequently encouraging spirituality development might counter the effects of “feeling alone” and growing up in a religious environment which denounces same-sex relationships.

Campus environment. Results of this study indicated an increase in minority stress(ors) for sexual minority students who attend a college where the campus climate is not receptive, inclusive, or validating. Participants in this research noted that campus environments which do not support the inclusivity of sexual minority students through policies, curriculum, and resources contribute to the minority stress(ors) that lead to adverse mental health outcomes.

Recall from Chapter 2 that Sanlo (2005) noted, “Fewer than 10% of the nation’s 3500 colleges and universities have *sexual orientation* in their non-discrimination policies, and only 40 institutions have professionally staffed centers that provide services to, for, and about sexual minority students” (p. 98). With only 10% of the nation’s colleges providing some sort of protection and support for sexual minority students, it is

understandable that many college campuses cultivate and expose sexual minority students to minority stress(ors). While it is understandable, it is not acceptable.

Issues in the classroom appear to be the most taxing for participants in this study. Only 23% of the participants felt that the curriculum adequately represented contributions of LGB persons. Even more alarming, only 3% strongly agreed that the climate of the classes they have taken was accepting of LGB persons. The classroom is an environment in which all students should feel comfortable so that learning is maximized. It is in the classroom that hooks (1994) urged her readers to remember what education is all about.

The academy is not paradise. But learning is a place where paradise can be created. The classroom with all its limitations remains a location of possibility. In that field of possibility we have the opportunity to labour for freedom, to demand of ourselves and our comrades, an openness of mind and heart that allows us to face reality even as we collectively imagine ways to move beyond boundaries, to transgress. (p. 207)

In spite of unwelcoming campus and classroom climates, some sexual minority students display a great deal of persistence toward a degree. Some programs that help promote a more welcoming campus environment include Safe Zones (Evans, 2002), Lavender graduation (Sanlo, 2000), gay-straight alliances, and peer support groups. Further research with multi-regional larger samples should focus on identifying the impact of these programs and identifying other protective factors (Russell, 2005) in the campus environment that promote resiliency and persistence for this population.

Over the last 20 years, the visibility of sexual minority students, staff, and faculty has increased on college campuses. As visibility increases, university administrations

must keep pace by providing support and services for this population so that they are afforded equal opportunities to achieve their educational goals.

LGB community involvement. The results of this study might appear to contradict prior research which suggests involvement with a peer group is critical to providing support from the effects of abuse, harassment, and discrimination (D'Augelli, 2003; Hershberger & D'Augelli, 1995). Additionally, Lewis et al. (2001) found that involvement with a LGB community reduced sexual minority stressors. This study, however, indicated that involvement with a LGB community led to an increase in minority stress(ors) leading to psychological distress, and a direct relationship with suicidal thoughts. I believe these findings occur for three reasons. First, while involvement with a LGB community is beneficial for support and positive identity development, it amplifies an individual's visibility as a sexual minority person; this in turn makes the individual a more likely target for discrimination and harassment, and a host of minority stressors. Second, the more involved an individual is with a community, the more invested the individual is in the experiences of group members. Thoits (1999, as cited in Meyer, 2003) stated, "the more an individual identifies with, is committed to, or has highly developed self-schemas in a particular life domain, the greater will be the emotional impact of stressors that occur in that domain" (p. 678). Third, previous research has focused on sexual minority youth in predominantly large urban and metropolitan areas where access to resources is more available and overall LGB communities are more visible. This study sampled a group of sexual minority college students in the rural Midwest where resources are not as accessible, and visibility and attention to sexual minority issues are not as likely to be seen in a positive manner.

Whereas previous research revealed that involvement with a LGB community is helpful in providing support, development of positive self-esteem, and a reduction in minority stress(ors), it appears that at this moment in time for sexual minority youth in the rural Midwest involvement with a LGB community is a double-edged sword. On the one side it provides vital support and resources toward development of a positive sexual minority identity, and on the other it exposes the individual to an increase in minority stress(ors). A duplication of this study conducted with participants from urban/metropolitan areas would help in identifying whether these results are specific to the rural Midwest region of the country.

Family support. Results of this study indicated that a supportive family directly reduced both minority stress(ors) and psychological distress experienced by sexual minority college students. This result is significant because family support is the only variable in the study that was identified as a protective factor in contrast to risk factors for minority stress(ors). Prior research has shown that within the family structure sexual minority youth generally come out to a sibling first and fathers are usually the last to be told. Research has also shown that mothers are typically more supportive than fathers with respect to a child's disclosure of sexual orientation (D'Augelli, 1991). This study provides support for prior research in that both male and female participants viewed their mothers as the most supportive family member, followed by siblings, relatives, and fathers respectively. Table 5.1 provides the mean scores for the perceived support from each family member by participant sex category. Interesting is the result that overall male participants perceived more supportive families than female participants. It is possible that because results indicated that male participants had more minority stress(ors), there

was an increased need for support from their families and this resulted in a closer family unit. Further research will need to be conducted to uncover the differences in family support by sex category.

Table 5.1

Mean Score Comparison of Family Support by Family Members (n = 76)

Sex Category	Family Member				Totals
	Mother	Father	Siblings	Relative	
Male	3.31	2.83	3.15	2.97	3.08
Female	3.12	2.46	2.93	2.60	2.85

Scale: 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree

Family support is an important component of development regardless of how “out” sexual minority youth are to their families. Because family support is the only buffer/reducer of minority stress(ors) and psychological distress in this study, it is important to understand how support in a family can be cultivated. Items that help operationalize the concept of what is a “supportive family” can be taken from the Social Provisions Scale (SPS) developed by Cutrona and Russell (1987) and used in this research to measure family support. In the SPS scale, Cutrona and Russell identified a family member as supportive if individuals feel:

- 1) they can depend on the family member when they need to;
- 2) they can turn to the family member for guidance in times of stress;
- 3) the family member recognizes their competence and skill;

- 4) they have a close relationship with the family member that provides a sense of emotional security and well-being;
- 5) the family member shares their attitudes and beliefs; and
- 6) they can talk to the family member about important decisions in life.

I suggest that in developing educational programs and interventions that center on facilitating family support for sexual minority youth, focus in the family should be shifted from sexual orientation as the issue, and couched in terms of the items addressed by Cutrona and Russell (1987).

Sex category. In addition to the microsystems impact on minority stress, the direct effect from the macrosystem of sex was also significant. I chose to label the variable “sex category” instead of “gender” because of the widespread awareness among LGBT college students who acknowledge a difference between sex and gender. I wanted to identify the participants based on biological sex categories because society makes assumptions of gender and holds one accountable to gender norms based on sex categories even though one’s gender is not always congruent with one’s sex category. For example, prior research with gay male college students revealed increased victimization based on gender atypicality (Waldo et al., 1998).

Labeling the variable gender would have opened the door for participants to answer based on their gender identity and expression rather than sex category. As a result, female participants (based on sex category) would have skewed results if they self-identified with a masculine gender and answered based on gender expression. The reverse would also be true for male participants (based on sex category). This could have been misleading when trying to compare results based on sex categories with previous

research. Therefore, participants were asked a question regarding sex category and a question asking them to identify their gender. As suspected, several individuals identified genders that were not synonymous with their sex categories. To illustrate this point, Table 5.2 provides results of the participants' gender answers with their sex category responses.

Table 5.2

Comparison of Gender and Sex Category Responses (n = 76)

Sex Category	Gender				Totals
	Masculine	Feminine	Gender neutral	Other	
Male	35	2	4	2	43
Female	1	22	6	4	33

Results indicated that male college students were more likely to experience minority stress(ors) than female college students. The norms a gay man must contend with to uphold the societal concepts of masculinity are less forgiving than those for females. Often sexual orientation is ascribed to a male based on a gender expression that falls outside the "acceptable" norms of masculinity. The same is true for females, though not to the same extent. As a result of an ascribed sexual minority orientation (whether the individual identifies with a same-sex attraction or not), the individual is subjected to the same stigmatization and marginalization that is bestowed upon those who do identify as a sexual minority person.

Gagne, Tewksbury, and McGaughey (1997) stated, “Those whose ... gender presentation falls outside the binary are stigmatized, ostracized, and socially delegitimized to the extent that they may fail to be socially recognized” (p. 480). If recognized, they are often victims of verbal and physical assaults (Evans & Rankin, 1998). Furthermore, 45% of participants in this study responded that gay men were the most likely to be harassed on campus, compared with the likelihood of harassment directed toward lesbian (28%) or bisexual (21%) students. The results of this research revealed that minority stress was higher for male participants. Much of this stress is based on the masculinity norms to which gay men are held accountable by society. The results of this study provide evidence for society’s stigmatization of gay men and substantiate Meyer’s (1995) conception of minority stress resulting from a stigmatized identity.

Race/ethnicity. Race/ethnicity was hypothesized in the model as a macrosystem contributor to minority stress because, like sex/gender, it permeates every facet of society. Like sex/gender it too is reinforced by societal norms that function in a majority/minority fashion. Specifically, if one is white one is considered by society as a majority member resulting in majority privileges; if one is not white one is considered by society as a minority member resulting in a stigmatization that is reinforced by the majority to maintain power structures (c.f., Omi & Winant, 2004).

The results of this study failed to show a statistically significant effect of race/ethnicity on minority stress. There are several probable reasons for this result. First, the proportion of the sample that represented sexual minority students of color may have been too small. Only 12 of the 76 participants identified as students of color. However, given the demographic population characteristics for the rural Midwest it is

understandable that the numbers for sexual minority students of color were low.

Replicating this study with a larger sample size of sexual minority students of color is definitely an implication for future research.

Second, with respect to a race/ethnic minority identity, sexual minority youth of color are born into their racial/ethnic identity; whereas, the LGB identity is acquired later in life (Meyer, 2003; Waldo et al., 1998). As a result, the youth of color grows up surrounded by a family dynamic that promotes a self-enhancing social environment with respect to race/ethnicity. This environment provides “experiences with positive racial identity [and] may be protective to [youth of color] both directly, by contributing to high self-esteem, and indirectly, by facilitating a self-protective mechanism associated with stigma” (Meyer, p. 690).

This explanation brings up an interesting question regarding minority stress and stigmatization. Do individuals who are born into an identity associated with a stigma develop greater coping skills earlier in life than individuals who acquire a stigmatized identity (e.g., sexual orientation, a disability, classism) later in life? Does this early development of coping with stigma help buffer the effects of minority stress(ors) thus decreasing the adverse mental health outcomes that may result from minority stress(ors)? If we consider that an individual who is born into a stigmatized identity has developed greater coping skills, perhaps the results for participants of color in this study reflect their minority stress based solely on their status as a sexual minority person (not identified at birth) with race/ethnicity not a major factor. In proposing this as a potential rationale, caution must be taken not to suggest that one marginalized group is confronted with more minority stress(ors) or is more oppressed than another marginalized group. Future studies

should focus on within group differences based on race/ethnicity to identify differences and similarities in minority stress(ors).

Adverse Mental Health Outcomes

In this section, I will review and examine the results of the adverse mental health outcomes of psychological distress and suicidality in sexual minority college students. Results for personal epistemology as a mediating variable between minority stress and psychological distress, suicidal thinking, and suicidal attempts are also discussed.

Psychological distress. Results of this study indicated a direct effect of minority stress on psychological distress; as minority stress(ors) increased so did psychological distress. The initial hypotheses of direct effects of the microsystems on psychological distress were not significant, with the exception of family support, which reduced/buffered minority stress(ors). As a result, the only direct negative contributor to psychological distress came from stress(ors) in excess of everyday stress(ors) (i.e., minority stress). Had other stress(ors) (aside from minority stress) in the microsystems impacted psychological distress, the direct paths to psychological distress should have been significant just as both paths from family support were significant to minority stress and psychological distress. The direct effect of family support on both minority stress(ors) and psychological distress further supports this conclusion, suggesting that a support system can reduce psychological distress and stress(ors) (Department of Health and Human Services, 1999).

It is evident then that the psychological distress experienced by participants was a direct result of their minority status. Results of the top six stressors cited by participants

in this study reveal what the major concerns are for sexual minority college students from the rural Midwest. They are:

- 1) People's ignorance about gay/lesbian/bisexual people – 93%
- 2) Having straight friends know about my sexual orientation – 90%
- 3) Telling straight friends about my sexual orientation – 84%
- 4) Lack of acceptance of gay/lesbian/bisexual people in society – 83%
- 5) Being in public with groups of gay/lesbian/bisexual people – 79%
- 6) Lack of constitutional guarantee of rights due to my sexual orientation – 78%

Clearly, these stressors speak to issues at levels of both the micro and macro environments. On a macro level, sexual minority college students from the rural Midwest are predominantly concerned with people's ignorance about LGB people, lack of acceptance in society, and lack of constitutional guarantees. These are all repercussions of society's stigmatization of sexual minority individuals, which as seen in this study can result in psychological distress. Link and Phelan (2001) stated, "stigmatized groups are disadvantaged when it comes to a general profile of life chances like income, education, psychological well-being, housing status, medical treatment, and health" (p. 371). This disadvantage is well documented in our society from lack of constitutional guarantees in domestic partnerships to the withholding of medical treatment.

On a micro level, sexual minority students are distressed by straight friends who know about their sexual orientation as well as having to tell straight friends who do not know. This is an extremely unsettling result to find, considering D'Augelli and Hershberger (1993) identified that the loss of a friend due to disclosure was the most prevalent predictor for suicide attempters. Also, on the micro level, sexual minority

college students are distressed by being in public with groups of LGB people. This finding is consistent with results that revealed involvement with a LGB community contributed to minority stress(ors). Perhaps, this stress is indicative of the rural, non-urban environment where visibility brings increased chances of becoming a target for abuse, harassment, and discrimination.

Personal epistemology. The hypothesized relationship of personal epistemology as a mediating variable between minority stress and psychological distress was not significant, nor was it significant as a mediator between minority stress and suicidal thoughts or attempts. Although personal epistemology did not estimate a significant effect as a mediating variable; it did however, produce a significant direct effect to suicidal attempts. This relationship suggests that sexual minority college students who are at more naive (i.e., absolutist) levels of cognitive development are more likely to attempt suicide. Recall from Chapter 2, that an absolutist perspective is one in which the world is viewed in a dichotomy of truth, right and wrong are the only options; there are no shades of grey. Knowledge and truth come from those in positions of power and authority. Sexual minority students who receive messages from authorities (e.g., parents, pastors, teachers) that same-sex relationships are wrong and assess this information through an absolutist perspective might view successfully negotiating a sexual minority identity as impossible. Resolving the conflict between the messages received on what is right and wrong, and what the individual is feeling with regards to sexual identity appears hopeless, leaving suicide as an option to resolving this conflict. This is perhaps one of the most important reasons institutions of higher education must have an inclusive campus environment and provide a strong support system for sexual minority students to persist

in college, since research has shown that attending college promotes development of more advanced levels of cognition (see Chapter 2).

Suicidality. Results of this study indicated a significant direct effect from psychological distress to suicidal thoughts, followed by a significant direct effect from suicidal thoughts to suicidal attempts. Over 54% of the participants in this study responded to having “seriously” considered suicide, 27% reported having made at least one suicidal attempt, and 7% stated they were currently thinking about taking their own lives.

A great deal of debate surrounds whether sexual minority youth are at increased risk for suicide. Claims in previous research of higher suicidality for sexual minority youth have been questioned based on potential biases in the convenience sampling methods. Critics point out that the majority of these studies included mostly males and those seeking social services support, who were more likely to have and/or report psychological distress (c.f., Muehrer, 1995; Safren & Heimberg, 1999; Savin-Williams, 1994). Despite this critique, Smith and Drake (2001) noted that “10 peer-reviewed studies have found high rates of suicide attempts” (p. 155). Table 5.3 provides a summary of peer-reviewed studies from 1990 to 1999 of suicide attempts among LGB persons compared with heterosexual persons. A point of criticism that should be addressed is the lack of comparison of suicidality among LGB groups with heterosexual groups. As noted in table 5.3, very few studies focusing on suicide attempts for sexual minority people have used a heterosexual comparison group.

Table 5.3

Studies of Suicide Attempts among Gay, Lesbian, and Bisexual People, 1990 to 1999

Investigators	Study Cohort	Study Design	Source of Recruitment	Percent of Suicide Attempts by Group	
				GLB Study %	Heterosexual Comparison Group %
Kruks, 1991	GLB runaway youth, n=43; comparison group, n=104	Convenience sample	Agencies for homeless and runaway youth, LA	53	32
Hammelman, 1993	Gay males, n=28 Lesbians, n=20	Convenience sample	GLB support group in Iowa and college campus GLB groups	29	NCP
Remafedi et al., 1991	Gay (88%) and bisexual (12%) males aged 14-21, n=137	Convenience sample	Advertisement in GLB community	30	NCP
D'Augelli & Hershberger, 1993	GLB youth aged 21 and younger, n=142	Convenience sample	14 support groups at GLB community centers nationwide	42	NCP
Proctor & Groze, 1994	Gay males, n=139 Lesbians, n=52 Bisexuals, n=30	Convenience sample	GLB youth group	40	NCP
Bradford et al., 1994	Lesbians, aged 17 to 80, n=1,925	Snowball sample; lesbians from 50 states	Lesbian and gay health and mental health organizations and practitioners	18	NCP
Rotheram-Borus et al., 1994	Gay and bisexual males aged 14-19, n=138	Convenience sample	Social service agency in New York City	39	NCP
Safren & Heimberg, 1999	GLB youth aged 16-21, n=56; males, n=29, females=27 comparison group, n=48	Convenience sample	Philadelphia area after-school recreational and educational programs for sexual minority youth	30	13

*Source: Adapted from McDaniel, Purcell, & D'Augelli (2001)

Note: NCP = No comparison group

The percentage of suicide attempts among participants in this study (27%) compare with the percentages found in Table 5.3. Including the present study, results suggest that suicide attempt rates for sexual minority youth fall between 18% and 53%, which are much higher than the 8% national rate for youth suicide attempts (National Youth Violence Prevention Resource Center, 2001). The consistent results across studies that point to an elevated suicide attempt rate for sexual minority youth provide some evidence for challenging the critics who point to sample bias. Additionally, participants in this study were both male and female college students, who were not recruited from counseling centers or social support services. Indeed the participants in this study were more likely to represent a more positive perspective with regards to fewer “stress(ors)” than sexual minority youth who do not attend college and have a lower SES.

It should be mentioned that this study did not include a heterosexual comparison group. Future research with a rural population should include a comparison group to strengthen the research design and generalizability of the results.

Implications for Theory and Research

This research provides an empirical response to several calls for further research and issues brought forward by previous researchers. First, McDaniel, Purcell, and D’Augelli (2001) suggested that future research should examine environmental risk factors and their link to psychological distress and suicidality, and include lesbians and bisexuals. This research responds to this call with a focus on the environments that contribute to psychological distress and suicidality, and the inclusion of lesbian and bisexual participants.

Second, D'Augelli (2005a) called for more research involving sexual minority persons in rural areas. This study answers this call by restricting the sampling criteria to include only those participants from rural areas in the Midwest. Although rural was defined rather broadly (rural < 100,000 city population), this precluded participants from large urban areas and metropolitan areas which have the most resources available for sexual minority youth. The results of this study are consistent with much of the prior research conducted using urban samples, with the exception of involvement with a LGB community, which pointed to an increase in minority stress(ors) and suicidal thinking. Furthermore, the study provides a glimpse into the environments that contribute to minority stress and adverse mental health outcomes for sexual minority college students from the rural Midwest.

Third, Waldo et al. (1998) noted that several researchers had hypothesized psychological distress results in youth populations from negative life experiences based on sexual orientation, but rarely has this hypothesis been examined empirically and in youth populations. This study provided a model that tested this relationship based on environments and provided empirical support for the hypothesis of psychological distress based on negative experiences as a sexual minority individual.

Fourth, prior research on suicidality and sexual minority youth has been critiqued for making claims of higher rates of suicidality for sexual minority youth than heterosexual youth. Critics have noted that the majority of these studies were based on convenient samples of youth previously exposed to or currently seeking support with social services and failed to control for factors associated with suicide (c.f., Muehrer, 1995; Safren & Heimberg, 1999; Savin-Williams, 1994). One argument is that prior and

current exposure with social services produced samples with participants who were more likely to report suicidal thinking and attempts, thus accounting for the higher rates of suicidality. The sample in this study was composed of participants (college students) who were not actively recruited from counseling services or social support services. Results of this study, while not compared with a heterosexual sample, provide some evidence for higher rates of suicidal thinking (54%) and suicidal attempts (27%) when compared with the national rates for all youth of suicidal thinking (19.9%) and suicidal attempts (8%) (National Youth Violence Prevention Resource Center, 2001). When focusing on suicide issues, future research with this population should include a comparison group of heterosexual students from the rural Midwest.

Fifth, Greene (1997, as cited in D'Augelli, 2005b) noted the serious omission in current research examining the role of race and ethnicity in the families of sexual minority youth; specifically calling for an examination of the nature, degree, and intensity of religious values. With a focus on both race/ethnicity and religious emphasis in the family home, this study sought to satisfy a portion of this gap in the literature. While a direct path was not significant between race/ethnicity and minority stress(ors), the empirical results of this study indicated a significant correlation between race/ethnicity and religious intensity/emphasis in the family, and a significant direct effect of religious intensity/emphasis as a contributor to minority stress(ors).

Sixth, Rivers and D'Augelli (2001, as cited in Sanlo, 2005) noted, "Research focusing on the victimization of sexual minority youths in the college setting is long overdue" (p. 102). Since the participants in this study were college students and the focus was on minority stress(ors) and mental well-being, this study attends to the gap in the

research that Rivers and D'Augelli recognized. Sanlo (2005) cited three themes that research should concentrate on with respect to sexual minority college students. They are 1) discrimination and coping, 2) health effects/outcomes, and 3) resiliency (Sanlo). All three of these were touched on in this study, but most attention was focused on the second theme of health effects/outcomes.

Finally, in a recent essay published in *Educational Researcher* entitled "What is 'Good' Educational Research?," Karl Hostetler (2005) proposed that for educational research to be deemed "good" it must make connections to a "robust and justifiable conception of human well-being" (p. 17). This research study sought to identify the extent to which the micro- and macrosystems for sexual minority youth in the rural Midwest impacted their well-being. The results of this study provide information that can serve as a framework for enhancing the overall well-being of sexual minority youth. Because of the research focus on and connection to the well-being of sexual minority college students this study has followed Hostetler's criteria for "good" educational research.

Future Research

Meyer (1995) postulated the concept of *minority coping* in response to sexual minority individuals who are able to successfully negotiate minority stress(ors) without experiencing adverse mental health outcomes. Future research should explore the concept of minority coping and what mechanisms promote resiliency in sexual minority college students from the rural Midwest. It is evident from this research that family support has an impact on buffering the effects of minority stress(ors) and psychological distress. In

addition to family support, future research should focus on what other mechanisms alleviate minority stress.

It is also important to consider the effects of multiple stigmatizing identities (e.g., disability, race/ethnicity, classism) with regard to minority stress(ors) for sexual minority youth. While this study hypothesized that race/ethnicity would be a significant contributor to minority stress, results indicated that it was only significant as it correlated with religious emphasis, which contributed to minority stress. The number of participants in this study who identified as sexual minority youth of color was low and this probably had an impact on the results with regard to race/ethnicity. Future studies should look to recruit a larger sample of sexual minority youth of color. In addition to using the model in this study as a framework, Greene (1997, as cited in D'Augelli, 2005b) noted four areas in need of examination with regard to LGB youth of color. They are

- 1) the importance of procreation and the continuation of the family line;
- 2) the nature, degree, and intensity of religious values;
- 3) the importance of ties to the cultural community; and
- 4) the history of discrimination or oppression the particular group has experienced from members of the dominant culture. (p. 125)

Understanding the intersections of minority stress and the factors noted by Greene will provide a great deal of insight into the issues facing sexual minority youth of color.

Additionally, the intersections of disability and class should be explored as they intersect with a sexual minority identity and contribute to minority stress(ors).

Because of the continued debate and persistent questions surrounding whether suicide rates are higher for sexual minority youth than heterosexual youth, future research

should focus on national large-scale samples and, if plausible, random sampling methods. The results of this study revealed rates of suicidal thinking for sexual minority youth (54%) and suicidal attempts (27%) were higher than the national norms for suicidal thinking (19.9%) and suicidal attempts (8%) (National Youth Violence Prevention Resource Center, 2001). More participants in this study had seriously considered suicide than those who had not considered it. These results are alarming and perhaps the focus of future research should not consider whether the suicide rates are higher for sexual minority youth, but rather seek to identify the protective factors that aid in reducing suicidality for sexual minority youth.

Finally, because this study focused on sexual minority youth from the rural Midwest and used a purposeful sampling strategy (even though it is the most often used sampling design for this population), the results should not be generalized to the entire sexual minority youth population. The results, however, can provide a framework through which researchers can identify the contributing environments and subsequent effects of minority stress(ors) on sexual minority youth in the rural Midwest. Future research should consider replicating and testing this framework and model in other regions of the country.

Implications for Practice

Rather than pathogenic factors, the minority stress perspective focuses on the environment as the source of adverse mental health outcomes for sexual minority youth. Therefore, change must occur in the microsystems and macrosystems. Some of these environments are easier to effect change in than others. Programs, policies, and education should target the microsystems (those closest to the individual) level first because of the

direct interaction the individual has with these systems. Changes at the macrosystems level will take longer to facilitate because of the deeply embedded structures and societal reinforcement of these systems. However, because the macrosystems exert influence in all facets of life, they are also some of the most critical systems of which to focus for change. This type of change does not come easily. As public policy is created, modified, or deleted to address these socially induced stress(ors), there is a great deal of backlash. Albee (1982, as cited in Meyer, 1995) noted that calls for and attempts toward public policy changes “often encounter the angry resistance of the power forces that get real benefit from the values being criticized” (p. 53). It is hoped, however, that policies and programs that alleviate minority stress(ors) at the microsystems (and mesosystems) will provide a strong foundation for effecting change at the exosystem and macrosystem levels.

As long as sexual minority persons are stigmatized and discriminated against, their mental health and overall well-being is at risk because discriminatory conditions dictate the public policies that prevail. For example, federal and state funding provided for research on this population is minimal. It is imperative that federal, state, local, and private funding agencies make available funds for research that seeks to identify mental health risk and protective factors for sexual minority persons which in turn will provide a vehicle for creating change in implicit and explicit discriminatory practices.

The results of this research demonstrate that the mental well-being of sexual minority individuals is at jeopardy from the consequences of exposure to and involvement in a negative environment, at both the micro- and macro levels. In working toward deconstructing institutional barriers and discriminatory practices on a national,

state, and community level, some ways in which an individual can be proactive include the following:

- 1) Encourage the inclusion of sexual orientation and gender identity/expression in anti-/non-discrimination and harassment policies where they are not included.
- 2) In agencies and businesses, include LGB resource related material, magazines, newspapers, newsletters, and brochures that are inclusive of sexual minority persons.
- 3) Encourage and create change toward policies and benefits that pertain to married couples that do not pertain couples in domestic partnerships (e.g., medical insurance, memberships, visitation rights).
- 4) Attend/join sexual minority support organizations such as PFLAG or GLSEN
- 5) Challenge discriminatory practices such as language and policies.
- 6) Practice and encourage the use of inclusive language at all times.

Implications for Higher Education

Given the results of this study indicating the impact the campus environment has on the mental well-being of sexual minority students, it is imperative that universities focus on creating diverse and inclusive environments that address the specific needs of this population. Zimpher (1998, as cited in Fox & Hackerman, 2003) predicted that diversity will be seen as asset-based for universities. Higher education will realize that all benefit when different perspectives and cultures are included. The 2002 report, *Investing in people: Developing all of America's talent*, released by the American Council on Education, noted there exists a strong linkage between the benefits and rewards of

diversity in higher education and in the workforce. Not only does an increased focus on diversity through fostering inclusive environments benefit sexual minority students by reducing minority stress(ors), it benefits all students. The benefits for college students who are exposed to diversity carry over into the workforce in a number of skills; specifically, enhanced creativity, tolerance, innovation, problem-solving skills, the ability to think critically, and the ability to understand multiple points of view (American Council on Education). While universities are beginning to take notice of the benefits of promoting inclusive environments, few are actually implementing policies and providing resources to make progress toward a more diverse and inclusive environment.

Promoting and creating an inclusive campus environment should be reflected in the institutional, divisional, and departmental mission statements and then supported with resources and policies such as anti-discrimination policies that include sexual orientation and gender identity and expression. Administrators must ensure that adequate resources go toward:

- 1) providing student support services for this population;
- 2) educational programs for faculty and staff focusing on creating inclusive curriculum and classroom environments;
- 3) initiating campus-wide programs that demonstrate institutional support for this population; and
- 4) implementing recommendations made by “diversity” committees and campus climate assessments.

A number of universities have conducted campus climate assessments for marginalized populations, but very few have allocated the needed resources to address

the issues that are identified by these assessments. If an institution has a center/office focused on supporting the needs of sexual minority students, at a minimum resources should go toward staffing the center with a full-time professional. Currently, few of these centers/offices are staffed by full-time professionals. More often, they are managed by a graduate student on an assistantship who typically ends up working more than 40 hours a week, well above the duties usually assigned for graduate assistants. Because these individuals have a compassion for and understanding of the challenges and issues facing LGB students, their dedication to the position is one that is often exploited by the institution.

Creating inclusive campus environments, particularly for marginalized students, is often relegated to student affairs/life divisions and “window dressing” diversity committees that are rarely provided with adequate resources. Because the campus climate has an impact on the mental well-being of sexual minority students and their persistence toward a degree, University senior administrators need to take seriously the inclusivity of sexual minority students by establishing and implementing inclusive policies, allocating resources, and expanding the responsibility of creating inclusive environments beyond student affairs divisions to include all departments and divisions within the institutional framework.

All of the above recommendations for practice have implications toward providing support for sexual minority students to persist in college. For sexual minority students, persisting in college is extremely important because it encourages cognitive development, and as the results of this study revealed, cognitive development has a direct effect on suicidal attempts. Pascarella and Terenzini (2005) reported that college has a

significant effect on cognition through development of critical thinking and reflective judgment-thinking. These cognitive skills are particularly important for sexual minority persons to develop because of their usefulness when challenged with contradictory messages. Development of these skills encourages the person to move from absolutist to relativist to post-relativist perspectives. Because of this outcome, it is imperative that administrators, faculty, and staff achieve and maintain a unified goal of retaining sexual minority students.

Final Thought: Victim or Resilient Actor

In this research, I have presented results that demonstrate adverse mental health outcomes resulting from the impact of minority stress(ors) on sexual minority college students in the rural Midwest. This perspective might insinuate that the sexual minority individual is a “victim” of environmental influences and oppressive social conditions. Viewing sexual minority persons as victims implies they have no control over their lives; however, it is important to recognize the agency and resiliency of sexual minority persons in their developmental trajectories.

The debate and tension between views of sexual minority persons as victims versus resilient actors extends to researchers, advocates, teachers, family members, etc. Should research, educational programs, interventions, support services, and policies focus on the individual as a victim of systemic institutional oppression or as a resilient actor who rises above adverse social conditions? The latter perspective tends to reflect American values and align with “a Western view of the world that emphasizes control, freedom, and individualized determination” (Hobfoll, 1998, as cited in Meyer, 2003, p. 691). Meyer suggested that this view can be treacherous:

The peril lies in that the weight of responsibility for social oppression can shift from society to the individual. Viewing the minority person as a resilient actor may come to imply that effective coping is to be expected from most, if not all, of those who are in stressful or adverse social conditions. Failure to cope, failure of resilience, can therefore be judged as a personal, rather than societal failing. (p. 691)

Whether one chooses to focus on victim or resilient actor, the adverse mental health outcomes for some sexual minority youth are alarming. Until the stigma of a sexual minority identity is deconstructed and abolished in society, sexual minority youth must be resilient to the oppressive forces that entrench and stigmatize them in a world that is unforgiving of their minority identity.

Summary

This chapter provided a discussion and examination of the environments identified in the micro- and macrosystems of sexual minority youth in the rural Midwest and their contribution to minority stress(ors) and the psychological distress and suicidality of participants in this study. Implications for theory, research, and practice were presented and suggestions for future research studies were proposed based on the outcomes of this study.

It is evident from the results of this study that sexual minority college students in the rural Midwest have a great deal of minority stress(ors) in their environments with which they must contend. The question remains of whether the accountability of dealing with these minority stress(ors) should be left to the individual or to society. Kitzinger (1997, as cited in Meyer, 2003) argued:

If [the] aim is to decrease “stress” and to increase the “ego strengths” of the victim, do they risk forgetting that it is the perpetrator, not the victim, who is the real problem? What political choices are they making in focusing on the problems of the oppressed rather than on the problem of the oppressor? (p. 692)

I concur with Kitzinger and advocate for more research focusing on the oppressive environments (the oppressors) of sexual minority youth; and additionally, the factors that encourage the development of resiliency and coping skills.

Conclusion

There are a number of studies that address psychological distress and suicidality in sexual minority individuals. Several factors make this study unique: the target population of college students, a focus on rural rather than urban settings, the sophisticated method of data analysis, and a cognitive development component (personal epistemology). The results of this research indicate that a negative campus climate, lack of family support, involvement with a LGB community, and a strong emphasis on religion in the family contribute to minority stress(ors) that lead to higher rates of psychological distress, and in turn to the most severe adverse mental health outcome of suicidality. Additionally, results revealed a direct relationship between cognitive development and suicide attempts. The results of this study are frightening with respect to suicidality given the overwhelming number of students who reported having considered suicide, attempted suicide, and currently contemplating thoughts of suicide.

Western society typically takes a band-aid approach to resolving issues surrounding conflicts rather than addressing these issues through a prevention approach using methods of education and policy implementation. For example, it is usually not

until a hate crime or “incident” occurs on campus that universities take steps toward addressing the needs of the targeted population. Subsequent “fixes” typically involve “window dressing” diversity committees that are rarely provided with adequate resources to create change or campus climate assessments with no funding available for implementing recommendations. Results of this research suggest that resources should be directed toward proactive methods using education and policy implementations to reduce minority stress(ors) through deconstructing the stigma of a sexual minority identity in society, on college campuses, in rural communities, and in families.

APPENDICES

A1. Permission to Maintain Contact

ID#: _____

Permission to Maintain Contact

You have now completed all of the questionnaires and we thank you for your participation.

We are looking forward to continuing to research the experiences of LGB young adults who grow up in the rural Midwest and we are anticipating grant funding in the near future to continue with this project. If we are funded we will be able to continue to provide you with some monetary compensation **SHOULD YOU CHOOSE** to continue to participate with this project.

If you choose to continue to participate we will need to be able to maintain contact with you. Please know that any information you provide is confidential and only the research investigators have access to your information. You may also decide not to participate at any time.

Below is a question asking whether you would like to continue participating with this project. If you answer "no," you will be exited from the survey and your participation is complete. If you answer "yes," you will be provided with three options for how we will maintain contact with you. Please choose the option that matches the method you prefer us to use to maintain contact with you.

Again thank you for your participation.

1. Would you like to continue participating in this research project?

- Yes
- No (Thank you for your participation, you do not need to answer the question below)

2. If yes, please select the option below corresponding to the method by which you would prefer we maintain contact with you.

- Option 1** - We can **email** you every few months to let you know how the study is going, Update your contact information, and remind you when it is time to once again complete the questionnaires online.
Please provide your **email address** here: _____
- Option 2** - We can refrain from emailing you, if you would prefer. If you do not find it convenient to receive email, we can send you letters through the **mail** every few months to let you know how the study is going, update your contact information, and remind you when it is time to once again complete the questionnaires online.
Please provide your **mailing address** here: _____
- Option 3** - We can use only the telephone to contact you, if you prefer. We can **call** you every few months to let you know how the study is going, update your contact information, and remind you when it is time to once again complete the questionnaires online.
Please provide your **telephone number** here: _____

B1. Demographic Questionnaire

ID#: _____

Demographic Questionnaire

1. What is your biological sex?

- Male
 Female
 Intersex

2. What is your gender identity? _____

3. Which of the following best describes your sexual orientation identity?

- Gay
 Lesbian
 Bisexual
 Other (please specify): _____

4. Age? _____

5. What is your current college academic classification?

- Not in school
 In High School
 Freshman
 Sophomore
 Junior
 Senior
 Graduate student

6. What type of higher education institution do you attend?

- Not in school
 4-year Public
 4-year Private
 2 or 4-year Religiously Affiliated Institution
 2-year Community College
 High School
 Other (please specify): _____

7. What is the name of the institution you attend? (Leave blank if you are not currently in school.)

8. What is your current cumulative grade point average (GPA)?

9. What is your race/ethnicity?

- Caucasian Asian/Pacific Islander African American/Black
 Latino/a American Indian/Alaskan Native Bi-racial/Multi-racial
 Other (please specify): _____

10. Which of the following best describes the town or city in which you spent the majority of your high school years (i.e., grades 10-12)?

- City of over 100,000
 City of 50,000 to 99,999
 City of 25,000 to 49,999
 City of 10,000 to 24,999
 Town of under 10,000
 Rural area

11. Which of the following best describes the town or city in which you spent the majority of your junior high or middle school years (i.e., grades 7-9)?

- City of over 100,000
 City of 50,000 to 99,999
 City of 25,000 to 49,999
 City of 10,000 to 24,999
 Town of under 10,000
 Rural area

12. Which of the following best describes the town or city in which you spent the majority of your elementary school years (i.e., grades K-6)?

- City of over 100,000
 City of 50,000 to 99,999
 City of 25,000 to 49,999
 City of 10,000 to 24,999
 Town of under 10,000
 Rural area

The following questions concern your MOTHER. If you were raised by someone other than your biological mother, answer with respect to the person who played the role of mother for the majority of your life.

13. What is the highest level of education your mother has completed?

- Less than high school Doctoral level degree (PhD, MD, JD, DDS, etc.)
 High school diploma or GED No mother figure in my life
 Some college, vocational, or technical training
 2-year community college degree
 4-year Bachelor's degree
 Some graduate training
 Master's degree

14. What is your mother's current employment status?

- Employed full or part-time
 Homemaker
 Unemployed involuntarily or disabled
 Retired
 Not applicable, she is deceased

15. IF YOUR MOTHER IS CURRENTLY EMPLOYED, what is her current occupation?

16. What best describes your family's structure for the majority of your life?

- Two biological parents
 Two-parent family, at least one step-parent
 Single-parent family, with father or stepfather involvement
 Single-parent family, with little or no father or stepfather involvement
 Single-parent family, with mother or stepmother involvement
 Single-parent family, with little or no mother or stepmother involvement
 Adoptive parents
 Foster family

The following questions concern your FATHER. If you were raised by someone other than your biological father, answer with respect to the person who played the role of father for the majority of your life.

17. What is the highest level of education your father has completed?

- Less than high school Doctoral level degree (PhD, MD, JD, DDS, etc.)
 High school diploma or GED No father figure in my life
 Some college, vocational, or technical training
 2-year community college degree
 4-year Bachelor's degree
 Some graduate training
 Master's degree

18. What is your father's current employment status?

- Employed full or part-time
 Homemaker
 Unemployed involuntarily or disabled
 Retired
 Not applicable, he is deceased

19. IF YOUR FATHER IS CURRENTLY EMPLOYED, what is his current occupation?

20. What is the current approximate gross yearly income of the household IN WHICH YOU WERE RAISED? _____

B2. LGBT Campus Climate Questionnaire

ID#: _____

LGBT Campus Climate
(Rankin, 2003)

Using the scale identified, please circle **ONLY ONE** answer for each statement that best represents your feelings and agreement with the statement.

	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
	1	2	3	4	5
1. The College/University thoroughly addresses campus issues related to sexual orientation/gender identity.	1	2	3	4	5
2. The College/University has visible leadership from the administration regarding sexual orientation/gender identity issues on campus.	1	2	3	4	5
3. The curriculum adequately represents the contributions of LGBT persons.	1	2	3	4	5
4. The climate of the classes I have taken are accepting of LGBT persons.	1	2	3	4	5
5. The College/University provides visible resources on LGBT issues and concerns.	1	2	3	4	5
6. The College/University has a rapid response system for incidents of LGBT harassment.	1	2	3	4	5
7. The College/University has a rapid response system for incidents of LGBT discrimination.	1	2	3	4	5

B3. Social Provisions Scale

ID#: _____

Social Provisions Scale (Cutrona & Russell, 1987)

In answering the next set of questions, please think about your relationship with the individual(s) in each group. For example in the first 6 questions think about your relationship with your mother. In the second set of 6 questions think about your current relationship with your father. Repeat this for each group. Please rate (by circling the number) the extent to which you agree that each statement describes your current relationship with the individual.

STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE	NOT APPLICABLE, my mother is deceased
1	2	3	4	5
MOTHER				
1. I can depend on my mother to help me if I really need it.	1	2	3	4 5
2. I CANNOT turn to my mother for guidance in times of stress.	1	2	3	4 5
3. My mother recognizes my competence and skill.	1	2	3	4 5
4. I have a close relationship with my mother that provides me with a sense of emotional security and well-being.	1	2	3	4 5
5. I feel that my mother shares my attitudes and beliefs.	1	2	3	4 5
6. I can talk to my mother about important decisions in my life.	1	2	3	4 5

STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE	NOT APPLICABLE, my father is deceased
1	2	3	4	5
FATHER				
7. I can depend on my father to help me if I really need it.	1	2	3	4 5
8. I CANNOT turn to my father for guidance in times of stress.	1	2	3	4 5
9. My father recognizes my competence and skill.	1	2	3	4 5
10. I have a close relationship with my father that provides me with a sense of emotional security and well-being.	1	2	3	4 5

11. I feel that my father shares my attitudes and beliefs. 1 2 3 4 5

12. I can talk to my father about important decisions in my life. 1 2 3 4 5

STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE	NOT APPLICABLE, I do not have any siblings
1	2	3	4	5

SIBLINGS

13. I can depend on my siblings to help me if I really need it. 1 2 3 4 5

14. I CANNOT turn to my siblings for guidance in times of stress. 1 2 3 4 5

15. My siblings recognize my competence and skill. 1 2 3 4 5

16. I have a close relationship with my siblings that provides me with a sense of emotional security and well-being. 1 2 3 4 5

17. I feel that my siblings share my attitudes and beliefs. 1 2 3 4 5

18. I can talk to my siblings about important decisions in my life. 1 2 3 4 5

STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE	NOT APPLICABLE, I do not have any relatives
1	2	3	4	5

Note: For the next set of questions, please think about your TWO closest relatives only.

TWO CLOSEST RELATIVES

19. I can depend on my relatives to help me if I really need it. 1 2 3 4 5

20. I CANNOT turn to my relatives for guidance in times of stress. 1 2 3 4 5

21. My relatives recognize my competence and skill. 1 2 3 4 5

22. I have a close relationship with my relatives that provides me with a sense of emotional security and well-being. 1 2 3 4 5

23. I feel that my relatives share my attitudes and beliefs. 1 2 3 4 5

24. I can talk to my relatives about important decisions in my life. 1 2 3 4 5

B4. Community Involvement Questionnaire

ID#: _____

Community Involvement (Ortiz, 2001)

In a **typical month**, how many times do you participate in the following activities or go to the following places? Please write your answer in the space provided.

How many times a month do you...

**How many times
a month?**

1. Go to gay bars/dance clubs/parties.	
2. Go to gay coffee shops/cafes.	
3. Go to gay and lesbian centers or other organized support groups or services.	
4. Go to primarily gay concerts or music festivals.	
5. Gay political meetings or rallies.	
6. Gay cultural activities (e.g., gay-themed lectures, book-readings, movies).	
7. Have dinner with gay friends.	
8. Go out to a movie or other activities with gay friends.	
9. Play sports or go to a sporting activity with gay friends.	
10. Have a personal conversation on the phone with a gay friend.	

B5. CES-Depression Scale

ID#: _____

Center for Epidemiological Studies Depression Scale (CES-D)
(Radloff, 1977)

Please use the scale below to respond to each statement based on how often you have felt this way in the **last week**. Circle one number for each statement.

	Rarely or none of the time 1	Some or a little of the time 2	Occasionally or a moderate amount of the time 3	Most or all of the time 4
1. I was bothered by things that don't usually bother me.	1	2	3	4
2. I did not feel like eating; my appetite was poor.	1	2	3	4
3. I felt I could not shake off the blues.	1	2	3	4
4. I felt as good as other people.	1	2	3	4
5. I had trouble keeping my mind on what I was doing.	1	2	3	4
6. I felt depressed	1	2	3	4
7. I felt everything I did was an effort.	1	2	3	4
8. I felt hopeful about the future.	1	2	3	4
9. I thought my life had been a failure.	1	2	3	4
10. I felt fearful.	1	2	3	4
11. My sleep was restless.	1	2	3	4
12. I was happy.	1	2	3	4
13. I talked less than usual.	1	2	3	4
14. I felt lonely.	1	2	3	4
15. People were unfriendly.	1	2	3	4
16. I enjoyed life.	1	2	3	4
17. I had crying spells.	1	2	3	4
18. I felt sad.	1	2	3	4
19. I felt that people disliked me.	1	2	3	4
20. I could not "get going."	1	2	3	4

B6. Trait Anxiety Scale

ID#: _____

Trait Anxiety Scale
(Spielberger, Gorusch, & Lushene, 1970)

A number of statements which people have used to describe themselves are given below. Read each statement and indicate, by circling the corresponding number, how you **GENERALLY** feel with regards to the statement. There are no right or wrong answers. Do not spend too much time on any one statement, but give the answer that seems to describe how you generally feel.

Almost Never 1	Sometimes 2	Often 3	Almost Always 4
1. I feel pleasant.			1 2 3 4
2. I tire quickly.			1 2 3 4
3. I feel like crying.			1 2 3 4
4. I wish I could be as happy as others seem to be.			1 2 3 4
5. I am losing out on things because I can't make up my mind soon enough.			1 2 3 4
6. I feel rested.			1 2 3 4
7. I am "calm, cool, and collected."			1 2 3 4
8. I feel that difficulties are piling up so that I cannot overcome them.			1 2 3 4
9. I worry too much over something that really doesn't matter.			1 2 3 4
10. I am happy.			1 2 3 4
11. I am inclined to take things hard.			1 2 3 4
12. I lack self-confidence.			1 2 3 4
13. I feel secure.			1 2 3 4
14. I try to avoid facing a crisis or difficulty.			1 2 3 4
15. I feel blue.			1 2 3 4
16. I am content.			1 2 3 4
17. Some unimportant thought runs through my mind and bothers me.			1 2 3 4
18. I take disappointments so hard that I can't put them out of my mind.			1 2 3 4
19. I am a steady person.			1 2 3 4
20. I get in a state of tension or turmoil as I think over my recent concerns and interests.			1 2 3 4

B7. Suicidality Questionnaire

ID#: _____

Suicidality Questionnaire**Please answer the questions below.****1. Have you ever seriously considered taking your own life?** Yes No**2. If yes, how many times?**

3. Have you ever tried to take your own life? Yes No**4. If yes, how many times?**

5. Do you currently have thoughts of taking your own life? Yes No**6. If yes, how serious are you considering harming yourself?** Not at all serious. Will not harm myself. Only a little seriously. Probably will not harm myself. Moderately seriously. Chances are 50/50 that I will harm myself. Seriously. Chances are more than 50/50 that I will harm myself in the near future. Not applicable. I am not considering harming myself.

NOTE: We care about the well-being of our participants. We will try hard to contact you if you are in danger of harming yourself. Please remember our 888-371-9871 number is always staffed. You may call us and we will try to help you find the assistance you need.

B8. Gay and Lesbian Stressor Scale

ID#: _____

Gay and Lesbian Stressor Scale

(Lewis et al., 2001)

Which of the following have you experienced in the **PAST YEAR**? Please answer by circling YES or NO.

- | | | |
|--|-----|----|
| 1. Rejection by my family members due to my sexual orientation. | YES | NO |
| 2. Lack of understanding by my family about my sexual orientation. | YES | NO |
| 3. Distance between me and my family due to my sexual orientation. | YES | NO |
| 4. Lack of support from my family members due to my sexual orientation. | YES | NO |
| 5. An overzealous interest in my sexual orientation by my family. | YES | NO |
| 6. Rejection by my brothers and sisters. | YES | NO |
| 7. A feeling that my family tolerates rather than accepts my sexual orientation. | YES | NO |
| 8. The fact that my family ignores my sexual orientation. | YES | NO |
| 9. Talking with some of my relatives about my sexual orientation. | YES | NO |
| 10. Introducing a new partner to my family. | YES | NO |
| 11. Having my lover and family in the same place at the same time. | YES | NO |
| 12. An unwillingness of my family to accept my partner. | YES | NO |
| 13. Keeping my orientation secret from family and friends. | YES | NO |
| 14. Expectation from friends and family who do not know that I am gay/lesbian/bisexual for me to date and marry someone of the opposite sex. | YES | NO |
| 15. Hiding my sexual orientation from others. | YES | NO |
| 16. Rejection when I tell about my sexual orientation. | YES | NO |
| 17. Telling straight friends about my sexual orientation. | YES | NO |
| 18. Loss of friends due to my sexual orientation. | YES | NO |
| 19. Having straight friends know about my sexual orientation. | YES | NO |
| 20. Dating someone who is openly gay. | YES | NO |
| 21. Having people at work find out I'm gay/lesbian/bisexual. | YES | NO |
| 22. Rumors about me at work due to my sexual orientation. | YES | NO |

23. Being in public with groups of gay/lesbian/bisexual people (e.g., bar, church, rally).	YES	NO
24. Being “exposed” as a gay/lesbian/bisexual person.	YES	NO
25. Image of homosexuals created by some visible, vocal gays and lesbians.	YES	NO
26. Threat of violence due to my sexual orientation.	YES	NO
27. Physical assault due to my sexual orientation.	YES	NO
28. A need to be careful to avoid having anti-homosexual violence directed at me.	YES	NO
29. Fear that I will be attacked due to my sexual orientation.	YES	NO
30. Possibility there will be violence when I am out with a group of gay/ Lesbian/bisexual people.	YES	NO
31. Harassment due to my sexual orientation.	YES	NO
32. Being called names due to my sexual orientation.	YES	NO
33. Some people’s ignorance about gay/lesbian/bisexual people.	YES	NO
34. Lack of acceptance of gay/lesbian/bisexual people in society.	YES	NO
35. Lack of constitutional guarantee of rights due to my sexual orientation.	YES	NO
36. Potential job loss due to sexual orientation.	YES	NO
37. Loss of job due to sexual orientation.	YES	NO
38. Working in a homophobic environment.	YES	NO
39. Harassment at work due to my sexual orientation.	YES	NO
40. Lack of security at work because I am gay/lesbian/bisexual.	YES	NO
41. Inability to get some jobs due to my sexual orientation.	YES	NO
42. A feeling that I must always prove myself at work because of my sexual orientation.	YES	NO
43. Mental health discrimination due to my sexual orientation.	YES	NO
44. Housing discrimination due to my sexual orientation.	YES	NO
45. Discrimination in social services due to my orientation.	YES	NO
46. Need to exercise caution when dating due to AIDS/HIV.	YES	NO
47. Constantly having to think about “safe sex.”	YES	NO
48. Limits I have placed on sexual activity due to HIV/AIDS.	YES	NO

49. Fear that I might get HIV or AIDS.	YES	NO
50. Difficulty meeting people due to concern over HIV/AIDS.	YES	NO
51. Difficulty finding someone to love.	YES	NO
52. Fear that my friends might be at risk for HIV/AIDS.	YES	NO
53. Shame and guilt because I am gay/lesbian/bisexual.	YES	NO
54. Difficulty accepting my sexual orientation.	YES	NO
55. Mixed feelings about my sexual orientation.	YES	NO
56. Conflict between my self-image and the image people have about gay/lesbian/bisexual people.	YES	NO

B9. Epistemic Beliefs Inventory

ID#: _____

Epistemic Beliefs Inventory (Schraw, Bendixen, & Dunkle, 2002)

Please indicate the level of your agreement with each of the statements listed below by circling the corresponding number that matches your level of agreement. Please use the following scale.

Strongly Disagree	Disagree Somewhat	Neither agree nor disagree	Agree Somewhat	Strongly Agree	
1	2	3	4	5	
1. It bothers me when instructors don't tell students the answers to complicated problems.	1	2	3	4	5
2. Truth means different things to different people.	1	2	3	4	5
3. Students who learn things quickly are the most successful.	1	2	3	4	5
4. People should always obey the law.	1	2	3	4	5
5. Some people will never be smart no matter how hard they work.	1	2	3	4	5
6. Absolute moral truth does <u>not</u> exist.	1	2	3	4	5
7. Parents should teach their children all there is to know about life.	1	2	3	4	5
8. Really smart students don't have to work as hard to do well in school.	1	2	3	4	5
9. If a person tries to hard to understand a problem, they will most likely end up being confused.	1	2	3	4	5
10. Too many theories just complicate things.	1	2	3	4	5
11. The best ideas are often the most simple.	1	2	3	4	5
12. People can't do too much about how smart they are.	1	2	3	4	5
13. Instructors should focus on facts instead of theories.	1	2	3	4	5
14. I like teachers who present several competing theories and let their students decide which is best.	1	2	3	4	5
15. How well you do in school depends on how smart you are.	1	2	3	4	5
16. If you don't learn something quickly, you won't ever learn it.	1	2	3	4	5

- | | | | | | |
|--|---|---|---|---|---|
| 17. Some people just have a knack for learning and others don't. | 1 | 2 | 3 | 4 | 5 |
| 18. Things are simpler than most professors would have you believe. | 1 | 2 | 3 | 4 | 5 |
| 19. If two people are arguing about something, at least one of them is wrong. | 1 | 2 | 3 | 4 | 5 |
| 20. Children should be allowed to question their parents' authority. | 1 | 2 | 3 | 4 | 5 |
| 21. If you haven't understood a chapter the first time through, going back over it won't help. | 1 | 2 | 3 | 4 | 5 |
| 22. Science is easy to understand because it contains so many facts. | 1 | 2 | 3 | 4 | 5 |
| 23. The moral rules I live by apply to everyone. | 1 | 2 | 3 | 4 | 5 |
| 24. The more you know about a topic, the more there is to know. | 1 | 2 | 3 | 4 | 5 |
| 25. What is true today will be true tomorrow. | 1 | 2 | 3 | 4 | 5 |
| 26. Smart people are born that way. | 1 | 2 | 3 | 4 | 5 |
| 27. When someone in authority tells me what to do, I usually do it. | 1 | 2 | 3 | 4 | 5 |
| 28. People who question authority are troublemakers. | 1 | 2 | 3 | 4 | 5 |
| 29. Working on a problem with no quick solution is a waste of time. | 1 | 2 | 3 | 4 | 5 |
| 30. You can study something for years and still not really understand it. | 1 | 2 | 3 | 4 | 5 |
| 31. Sometimes there are no right answers to life's big problems. | 1 | 2 | 3 | 4 | 5 |
| 32. Some people are born with special gifts and talents. | 1 | 2 | 3 | 4 | 5 |

B10. Religious Emphasis Scale

ID#: _____

Religious Emphasis Scale (Altemeyer, 1988)

In the space below, please list the religion denomination that your family practiced and/or identified with while you were growing up. If your family did not practice or identify with a particular religion denomination, please indicate "none."

Using the scale below please indicate, "how much your parent(s) emphasized practicing the family religion" for each of the behaviors listed. Circle the number that corresponds.

NO EMPHASIS was placed on this behavior 0	A SLIGHT emphasis was placed on this behavior 1	A MILD emphasis was placed on this behavior 2	A MODERATE emphasis was placed on this behavior 3	A STRONG emphasis was placed on this behavior 4	A VERY STRONG emphasis was placed on this behavior 5
---	--	---	---	--	---

- | | | | | | | |
|--|---|---|---|---|---|---|
| 1. Attending religious services (e.g., synagogue, church, mosque). | 0 | 1 | 2 | 3 | 4 | 5 |
| 2. Getting systematic religious instruction regularly (e.g., Sunday school). | 0 | 1 | 2 | 3 | 4 | 5 |
| 3. Reviewing the teachings of the religion at home. | 0 | 1 | 2 | 3 | 4 | 5 |
| 4. Praying before meals. | 0 | 1 | 2 | 3 | 4 | 5 |
| 5. Reading Scripture or other religious material. | 0 | 1 | 2 | 3 | 4 | 5 |
| 6. Praying before bedtime. | 0 | 1 | 2 | 3 | 4 | 5 |
| 7. Discussing moral "do's" and "don't's" in religious terms. | 0 | 1 | 2 | 3 | 4 | 5 |
| 8. Observing religious holidays; celebrating events like Christmas/Hanukkah in a religious way. | 0 | 1 | 2 | 3 | 4 | 5 |
| 9. Being a good representative of the faith; acting the way a devout member of your religion would be expected to act. | 0 | 1 | 2 | 3 | 4 | 5 |
| 10. Taking part in religious youth groups. | 0 | 1 | 2 | 3 | 4 | 5 |

C1. Email Invitation to LGB Listserves

*This is an example of the ISU email. Emails to other campuses were tailored for each specific listserv.

To GLB Students at ISU:

If you are between the ages of 18 and 22, you are invited to participate in a study of the experiences of GLB residents of the rural Midwest. To qualify, you must have lived in the Midwest, in a city of under 100,000 population for at least five years. You will also be compensated \$20.00 for your participation.

The study is the doctoral dissertation of Robyn Johnson, a graduate student in Educational Leadership and Policy Studies. Faculty supervisors include Dr. Nancy Evans in Educational Leadership and Policy Studies and Dr. Carolyn Cutrona in the Department of Psychology.

Participation involves answering questions (on a secure website or in person on paper forms at one of our sessions listed below) about your experiences as a lesbian, gay, bisexual, or same-sex attracted person who has lived in the Midwestern United States. Participation will take approximately 60 minutes and you will be compensated \$20.00 for your participation immediately upon completion of the questionnaires. We are applying for NIH grant funding and if approved there is potential for additional monetary compensation in the follow up stages of this project. If you give us permission, we will contact you again in one year and again in two years, to see how your life has changed. Each additional participation will last approximately 90-120 minutes.

The questionnaires that you complete on-line will cover a variety of topics, including your perceptions of attitudes towards gay, lesbian, and bisexual persons, positive and negative experiences in your hometown, positive and negative experiences on your college campus, social support and stress in your family, personal characteristics of yourself, including degree of identification as a gay, lesbian, or bisexual person, and involvement in social and political activities with gay, lesbian, and bisexual individuals and groups. The questionnaires will also ask about your romantic relationships, your mental health (e.g., anxiety, stress, depression), and your use of alcohol and drugs.

To volunteer or to learn more, please go to the projects secure website: www.ruralstudy.isbr.iastate.edu. or contact Robyn at robynj@iastate.edu.

If you decide to participate during one of our session times listed below, you do not need to click the link on the website referencing how to volunteer. If you would like to participate by answering the questionnaires on-line, please contact Robyn or complete the volunteer contact information on the website.

Below are listed dates, times, and locations for in-person participation. You will only need to attend one of the session times, and you will be compensated \$20.00 once you have completed the questionnaires at the end of the session.

Date	Time	Location
2/3, Thursday	6pm-7pm	Carver Hall, Room 274
2/3, Thursday Meeting)	7pm-8pm	Carver Hall, Room 274 (Pre-Alliance
2/4, Friday	11am-12pm	Lagomarcino Hall, Room N221-F
2/4, Friday	12pm-1pm	Lagomarcino Hall, Room N221-F

If you would like to participate in-person and cannot attend one of these sessions listed above, please contact Robyn and she will arrange a time and date for you to participate.

If you know of others who identify as LGB, living in the state of Iowa, and who are between the ages of 18-22 please feel free to forward this information to them. They do not have to be attending school.

Please contact us if you have any questions.

Sincerely,

Robyn Johnson, ELPS Doctoral Candidate

What is the study about and our goal?

Our goal is to learn about the experiences of gay, lesbian, and bisexual (GLB) young adults who have lived a significant part of their lives in the rural Midwest.

Participants will be paid \$20 for completing a set of questionnaires on our website. Data will be kept completely confidential.

Questionnaires will cover the following topics: positive and negative experiences in family, hometown, workplace, and school community; ties to the GLB community; depression and anxiety symptoms; personal strengths; career goals; health behaviors; and romantic relationships.

Who is conducting the study?

A group of Iowa State University faculty, staff, and graduate students are conducting a study to learn more about the experiences of GLB young adults who live in the rural Midwest.

Project leaders:

Carolyn Cutrona, PhD

Director, Institute for Social and Behavioral Research (515) 294-6784
ccutrona@iastate.edu

Nancy Evans, PhD

Professor, Educational Leadership and Policy Studies
(515) 294-7113
nevans@iastate.edu

Robyn Johnson, MEd

Doctoral Candidate, Educational Leadership and Policy Studies
(888) 311-9871
robynj@iastate.edu

How to Volunteer...

Interested GLB individuals, ages 18-22, who have lived in a Midwestern community of less than 100,000 people for at least five years are eligible.

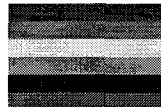
Go to our website at:

www.ruralstudy.isbr.iastate.edu

for more information. You may volunteer to participate on the website. You will receive an email or telephone call from a project research assistant who will confirm your eligibility and arrange for you to provide written informed consent to participate. (You may call us if you prefer.) You will be directed to our website to complete a series of surveys that should last approximately 60 minutes.

**VOLUNTEERS
NEEDED**

**Participants will be
compensated \$20.00**



**Sponsored by the Institute for Social
and Behavioral Research at Iowa State
University**

2625 N. Loop Dr., Suite 500
Ames, IA 50010
(515) 294-4518

Project Toll Free (888) 311-9871

Gay?

Lesbian?

Bisexual?

QUEER?

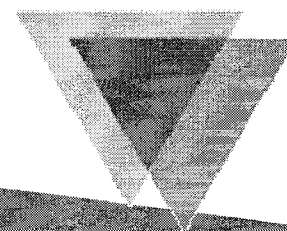
Questioning?

We need your help.

**GLB
in the
Rural Midwest**

A Research Project

**VOLUNTEERS
NEEDED**



E1. Newspaper Recruitment Advertisement

ADVERTISEMENT IN NEWSPAPERS**Gay, Lesbian, and Bisexual Individuals**

Volunteers needed for an online questionnaire study to learn more about the experiences of gay lesbian, and bisexual (GLB) young adults, ages 18–22, who live in the rural Midwest (any community with fewer than 100,000 population).

Interested young adults may volunteer to participate at our secure website. You will receive an email or telephone call from a project research assistant who will confirm your eligibility and arrange for you to provide written informed consent to participate. Go to:

www.ruralstudy.isbr.iastate.edu

All information will be kept completely confidential. Participation involves answering a series of questionnaires (which takes approximately 60 minutes) through our secure website. **All participants will be compensated \$20 for their participation in the research study.** This study is being conducted by the Institute for Social and Behavioral Research at Iowa State University.

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