THE IMPACT OF A GROUP MENTORING PROGRAM ON PSYCHOSOCIAL DEVELOPMENT AND SENSE OF BELONGING IN UNDERGRADUATE STUDENTS

by

Natasha Varnick

Liberty University

A Dissertation Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

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ABSTRACT

Mentoring has been studied in corporate and academic environments as a means of providing career and psychosocial support for young colleagues or students. Initially, mentoring was viewed as a single dyadic relationship between a mentor and a mentee. However, in recent years, it has been better understood in terms of mentoring constellations or group mentoring, as multiple mentors may best aid the development of individuals. While much mentoring research has examined professional development, this study focused on the psychosocial development that mentoring can provide. The relationship between mentoring and sense of belonging was also examined. It was hypothesized that students would measure higher on the Identity and Intimacy subscales of an index of psychosocial development and on indices of Sense of Belonging at the end of a group mentoring program than they did at the beginning of the program. Participants were 151 undergraduate students enrolled in a freshman group mentoring program at a public university. The study design was a quantitative repeated-measures field experiment. Two repeated-measures multivariate analysis of variance were calculated to determine the impact of the mentorship program on measures of psychosocial development and sense of belonging. A mixed analysis of variance was also calculated to examine the mentorship program's effects on sense of belonging for both White and non-White participants. Overall, the results did not support the hypothesis for psychosocial development and partially supported the hypothesis for sense of belonging. Implications, suggestions for future research, and limitations are also discussed.

Dedication

This dissertation is dedicated to my husband, Jason, who has supported me on this journey. It is also dedicated to my children—Emily, Anna, Sarah, and Jay—who have willingly sacrificed time with their mother so I could fulfill this dream. I will be forever grateful for all your love and support. It is also dedicated to my parents, Terry and Becky Lindley, who have lived this journey in their own lives and encouraged me greatly throughout this process. And ultimately, it is dedicated to the Lord, who called me to this task of completing my doctorate. I will use the knowledge and experience I have gained to continue teaching and mentoring for as long as the Lord allows.

Acknowledgments

This dissertation would not have happened without my chair, Dr. Kevin Ganey, who taught me about mentoring not only through the research literature but also through the example that he lives in his day-to-day life. He has been an amazing mentor and encourager whom I will never forget, and I am so grateful that he has walked this path with me.

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I also want to acknowledge my fellow doctoral students who walked the last leg of this journey with me: Dr. Josh Whitton and Dr. Abby Jamison. Thank you so much for your encouragement and advice these past 2 years and for inspiring me with your persistence in your own dissertation journeys.

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CHAPTER 1: INTRODUCTION TO THE STUDY

Introduction

This study was an examination of the relationship between mentoring, psychosocial development, and sense of belonging in undergraduate students. Through a group mentoring program, students experienced various types of mentoring from faculty, staff, and peers at their university. Measures were taken of their psychosocial development and sense of belonging at the beginning and end of the mentoring program to assess the program's impact on these variables.

Background

Mentoring has been studied in many contexts. While it originally was studied in the workplace in relationships between seasoned and inexperienced colleagues (Kram, 1983), it has more recently been studied in academic settings in the teacher–student relationship (Gershenfeld, 2014; Johnson, 2014). In this relationship, mentoring encompasses much of the interaction that occurs outside of the classroom. Specifically, in graduate and undergraduate institutions, mentoring is an important part of students' training. Some of this training is particular to learning how to conduct research, and some is more general in the student's field of study (Johnson, 2016).

Mentoring in the faculty–student relationship has the potential to meet developmental needs for both mentees and mentors. Mentored students may gain a sense of identity through their relationships with their mentors, which is an important developmental task of this age group (Erikson, 1959/1980). Also, mentors may accomplish generativity, which is the idea of having an impact on future generations; this is also an important developmental task during middle adulthood (Erikson, 1959/1980). It

is necessary to study this relationship during the undergraduate years from a developmental perspective to better understand the impact of a successful faculty–student mentoring relationship.

New research has also shown the importance of multiple levels of mentoring relationships. Johnson (2016) stated that students as mentees may benefit from a network of developmental helping relationships. Johnson developed the idea of a mentoring constellation, which includes the primary mentor and secondary mentors, including peer mentors. Thus, it is also important to study the impact of other mentors on undergraduates.

Sense of belonging is another concept that, like development, may be enhanced by the mentoring relationship. Brooms (2020) found that relationships with faculty mentors aided in both students' sense of belonging and development. It was also noted that faculty members are just one part of a student's community, which also includes peers, college staff, and administrators (Brooms, 2020). Future research needs to further examine these concepts to better understand the relationship between mentoring, sense of belonging, and students' development.

Problem Statement

Research has shown the importance of mentoring, especially from a developmental perspective. In the workplace, mentoring involves senior employees acting as a sponsor and a role model for junior employees; the mentor is a transitional figure providing guidance through early adulthood (Levinson et al., 1978). While mentoring was initially studied as a dyadic relationship, it is now being studied from the

perspective of developmental networks (Higgins & Kram, 2001) or mentoring constellations (Johnson, 2016).

Mentoring has been studied in university settings between faculty and students as well, as a means of providing both research training (Fleming et al., 2013; Robnett et al., 2018) and emotional support for students (Ward et al., 2014). Mentoring can meet the developmental needs of students, as the psychosocial support provided by mentors can aid undergraduate students in their psychosocial development, especially with the task of identity development (Johnson, 2016). Several developmental theorists have discussed the importance of identity development during the undergraduate years, including Erikson (1968), Marcia (1966), and Chickering (1969).

Sense of belonging is another construct that may be impacted by mentoring. Having faculty support contributes to a student's sense of belonging at a university (Means & Pyne, 2017). Students with faculty mentors have shown an increased sense of belonging compared to those without mentors Brooms, 2020; Crowe, 2020). Research is needed that will connect these three constructs of mentoring, psychosocial development, and sense of belonging in university students in the same study. More research is also needed that assesses mentoring in a university setting in the form of developmental networks or mentoring constellations as opposed to only dyadic mentoring relationships.

Purpose of the Study

The purpose of this quantitative study was to examine the impact of a group mentoring program on both psychosocial development and a sense of belonging in undergraduate students.

Research Questions and Hypotheses

Research Questions

RQ1: Does a group mentoring program enhance the intimacy and identity stages of psychosocial development in college students?

RQ 2: Does a group mentoring program enhance sense of belonging in college students?

Hypotheses

Hypothesis 1: Students will measure higher on the Identity and Intimacy subscales of an index of psychosocial development at the end of a group mentoring program than they did at the beginning of the program.

Hypothesis 2: Students will measure higher on indices of Sense of Belonging at the end of a group mentoring program than they did at the beginning of the program.

Assumptions and Limitations of the Study

One assumption of this study was that participants would answer the questions honestly. Another assumption was that students would be engaged in the group mentoring program. One limitation was that participants may answer the questions in a way that is socially desirable rather than answering them honestly. Another limitation was that data were collected from only one university and the results may or may not generalize to other universities. Yet another limitation was that of time, as one semester may not be long enough to see the impact of a mentoring relationship on student development and sense of belonging.

Theoretical Foundations of the Study

This study's theoretical foundation included several theories. Levinson (1977) and Kram (1983) developed early theories on mentoring in the workplace. Levinson identified mentoring as an important developmental relationship for young adults, while Kram identified the types of support that mentors provide, which are career oriented and psychosocial/relational. Regarding psychosocial development, the theories discussed in the present study are those of Erikson (1968), Marcia (1966), and Chickering (1993). While Erikson described the stages of development throughout the life span, Marcia and Chickering built on Erickson's work during the young adult life stage, which was most applicable to the present study. Sense of belonging is a newer concept, and the theoretical foundation for this concept is still being established. Bollen and Hoyle (1990) originally discussed sense of belonging as part of perceived cohesion, but it was later studied as a separate construct (Hoffman et al., 2002; Hurtado & Carter, 1997), especially as it applies to the university setting.

From a biblical perspective, there are examples of mentoring relationships throughout the Bible. Moses and Joshua, as well as Elijah and Elisha, are examples of mentoring dyads that are mentioned in the Old Testament (Moore, 2007). Jesus and His disciples are an example of group mentoring in the New Testament (Ford, 2014). Since both Jesus and the prophets were often seen mentoring others, there is biblical evidence of the importance of mentoring relationships.

Definition of Terms

The following is a list of definitions of terms that were used in this study.

Generativity—In Erikson's theory of psychosocial development, the need for generativity is what follows the stage of intimacy. This occurs during middle adulthood, and it encompasses a desire to guide and impact future generations (Erikson, 1959/1980, 1968).

Identity—In Erikson's theory of psychosocial development, a person's sense of ego identity is established during adolescence/young adulthood (Erikson, 1959/1980, 1968)

Intimacy—Also in Erikson's theory of psychosocial development, the capacity for intimacy is what follows identity development. This includes both psychological and interpersonal intimacy in various relationships (Erikson, 1959/1980, 1968).

Mentor—A person who is a sponsor, guide, or role model and provides moral support (Levinson et al., 1978)

Mentoring constellations—Comprising the primary mentor and secondary mentors, including peer mentors (Johnson, 2016)

Psychosocial development—From Erik Erikson's theory, which states that people advance through stages of development based on how they adjust to psychosocial crises throughout their lives (Erikson, 1959/1980, 1968)

Sense of belonging—In the present study, defined as the subjective sense of affiliation and identification with the university community (Hoffman et al., 2002)

Significance of the Study

This study is significant because of how the findings illuminated the importance of mentoring in university students and the impact that mentoring makes on both students' psychosocial development and their sense of belonging. Researchers have suggested moving beyond the study of research mentoring and exploring aspects of

mentor relationships that impact student's intellectual and personal growth (Aikens et al., 2016). Current trends in mentoring research include examining various types of mentoring relationships, including peer mentoring and developmental networks/mentoring constellations (Higgins et al., 2007; Johnson, 2016).

As students seek to develop their identities during their undergraduate years, mentoring relationships may aid them in this critical task of psychosocial development (Johnson, 2016). Sense of belonging is a newer concept that needs further evaluation (Brooms, 2020). The present study aided the understanding of how various mentoring relationships may impact a student's sense of belonging in a university setting.

Summary

This chapter included background information on the concepts of mentoring, psychosocial development, and sense of belonging, specifically within a university setting. Also included were the problem statement and purpose of the study and the research questions and hypotheses. The study assumptions and limitations and the theoretical foundations were also discussed. The chapter concluded with definitions of terms and the significance of the study.

CHAPTER 2: LITERATURE REVIEW

Overview

This chapter is a comprehensive literature review of the constructs in this study. It begins with a description of the search strategy that was used to identify sources. It also includes a review of background literature on mentoring, psychosocial development, and sense of belonging. Mentoring in the workplace and in academic settings is discussed regarding both dyadic mentoring and group mentoring. Psychosocial development is explored through a discussion of the theories of Erikson, Marcia, and Chickering and through a review of more recent studies as well. Sense of belonging is discussed first as part of the research on perceived cohesion and then as its own separate construct, specifically in university settings. Biblical examples of mentoring in the Old and New Testaments are also explored.

Description of Search Strategy

The literature search for this study began by using the terms "teacher–student relationship" or "faculty–student relationship." However, the articles found with this method focused more on the classroom side of the relationship rather than the mentoring side. Thus, a new search was conducted using the terms "mentoring relationship" and "undergraduates or college students." This new search focused on the mentoring aspect of the relationship within the undergraduate population that is being studied. Another search was conducted for "development" and "mentoring" and "undergraduates or college students." Finally, a search was conducted for "sense of belonging" and "undergraduates or college students." These searches were done using the advanced search method in Liberty University's online library, which includes the databases

PsycArticles (APA PsycNet) and the ProQuest psychology database. Also, references for articles found in these searches were used to identify additional articles on mentoring, psychosocial development, and sense of belonging. Several seminal works (books) on mentoring and development were also identified and used as resources as well.

The literature search for biblical sources began with the term "biblical mentoring." However, this yielded articles that discussed using the Bible in a mentoring relationship rather than examples of mentoring in the Bible. So, a search of an online biblical text was used to identify biblical figures who had been mentors. Then, using the advanced search method on Liberty's online library, a search was conducted using the names of these biblical figures and the terms "mentor" or "mentoring relationship." This search was limited to religion and theology databases. With this method, articles were found that discussed examples of mentoring in both the Old and New Testaments.

Review of Literature

Mentoring Research

Levinson

Mentoring has been a subject of research since the 1970s. In their research on adult development, Daniel Levinson et al. (1978) stated that the mentor relationship is one of the most important relationships that a young adult can have, developmentally speaking. Levinson's research on mentoring was conducted in work settings. He stated that the mentor's functions include being a sponsor, a guide, a role model, and moral support. Most importantly, mentors help their protégés realize the dreams they wish to achieve. He also noted that the mentor is not a parent but is a transitional figure helping the protégé through early adulthood (Levinson et al., 1978).

While mentors do help meet the developmental needs of their protégés, these relationships also meet the mentors' developmental needs. Levinson stated that "being a mentor with young adults is one of the most significant relationships available to a man in middle adulthood" (Levinson et al., 1978, p. 253). While there is some altruism involved in mentoring, mentors also help themselves by using their knowledge and skills. Just as mentoring helps protégés meet the developmental need for identity in young adulthood, it helps mentors meet their needs as a middle adult for generativity, which Levinson et al. (1978) noted as a concern for upcoming generations. These developmental needs of identity and generativity were first identified by Erik Erikson in his theory of psychosocial development, which is discussed later in this study.

Kram

Kathy Kram (1983) continued research on mentoring in the work setting. She identified two types of mentor support: career-oriented functions and psychosocial/relational functions. Career-oriented functions include exposure, visibility, and sponsorship, while psychosocial functions include encouragement, friendship, and acceptance. The traditional mentoring relationship was one between a protégé and a senior person in the organization.

One difference between Kram's and Levinson's theories is that Levinson viewed mentoring as a single dyadic relationship (Levinson et al., 1978) while Kram (1983) proposed that individuals may rely on multiple mentors for developmental support through what she called developmental networks. Kram argued that the strength of ties and the diversity of an individual's developmental network (or various mentors) are important as well (Higgins & Kram, 2001). Later on, Higgins et al. (2007) added a third

factor of developmental networks, which they called developmental initiation. This is defined as development-seeking behaviors by the individual who wants to be mentored (Higgins et al., 2007).

Kram (1983) also discussed different phases of the mentoring relationship. The relationship begins with the initiation phase, in which the mentor and mentee get to know each other and begin their relationship. Then comes the cultivation phase, in which the career and psychosocial needs are met, and they value relating to one another. Next is the separation phase, in which there are significant changes in their relationship, perhaps because one of them changes jobs or positions in the organization. Last is the redefinition phase, in which the relationship becomes primarily a friendship. This may happen because the mentor and mentee are now peers in the organization. Not all mentoring relationships continue to the redefinition phase (Kram, 1983).

Mentoring in the Academic Setting

Research Mentoring

In more recent years, mentoring has been studied in the academic setting in the teacher–student relationship rather than just among senior and junior colleagues in an organization. Some studies have focused specifically on research mentoring, where faculty mentor students in their research. Robnett et al. (2018) found that in mentoring relationships with higher instrumental and socioemotional mentoring, undergraduate students had higher levels of scientist identity. These distinctions of instrumental and socioemotional mentoring are similar to the career-oriented and psychosocial functions of mentoring identified by Kram (1983). Another study on research mentoring developed an

assessment that examined different competencies of the mentor, such as communication, understanding, expectations, and professional development (Fleming et al., 2013).

Stages/Levels of Mentoring

Other researchers have examined different stages or levels in the teacher–student mentoring relationship. McKinsey (2016), who used evaluations of faculty mentors, noted that mentoring relationships start with a connection and then progress to collaboration and commitment; some even form a continuing relationship after the student has graduated. Revalo and Loui (2016) explored stages of research mentoring between graduate and undergraduate students. These stages were novice and director, apprentice and master, collaborator and guide, and colleague and consultant. The stages mentioned in these two studies are similar to some of the phases of mentoring relationships identified by Kram (1983), which included initiation, cultivation, and redefinition.

In another study on research mentoring, Krishna et al. (2019) explored stages of this type of mentoring relationship. The stages they identified were prementoring, initial research meetings, data gathering, review of initial findings, manuscript preparation, and reflections. These stages are specific to research mentoring. Krishna et al. also noted that communication was an important element of the mentoring relationship.

Aikens et al. (2016) examined the mentoring relationship between faculty, graduate students, and undergraduate students. The researchers found that graduate students sometimes mediated the relationship between undergraduates and faculty. However, the results showed that students with direct faculty relationships had better

outcomes than those whose relationships were mediated by graduate students (Aikens et al., 2016).

Characteristics of Mentors

Faculty who excel at mentoring may share certain characteristics or methods. Walkington et al. (2020), who studied faculty who were award-winning undergraduate research mentors, found that these mentors provided a balance of freedom and control for their mentees. Some themes that emerged in these mentors were creating challenges, sustaining engagement, and celebrating achievements (Walkington et al., 2020).

Nabi et al. (2021) examined mentoring from the perspective of developing students into entrepreneurs. The researchers assessed four mentoring functions that were originally identified by Crisp and Cruz (2009): entrepreneurial career development, market/product knowledge development, role model presence, and emotional support. While this study supported the importance of these mentoring functions, the results also showed that more research is needed on how mentoring shifts students' identities. For example, in this study, the shift would be from student to entrepreneur (Nabi et al., 2021). In research mentoring, the shift might be from student to researcher or academic.

White et al. (2021) explored how mentors help students develop their purpose. In this study, students identified someone who mentored them, which did not have to be a teacher, although almost half of the sample did identify a teacher as a mentor. The students noted how mentors' support, including their affirmation, cultivation, and guidance, helped them develop a sense of purpose (White et al., 2021).

Barriers to Mentoring

While a significant body of research has shown that mentoring is beneficial in academia, there are often barriers to developing mentor relationships. Mentoring or even advising students is not as important of a criterion for promotion compared to research and teaching. Also, certain academic disciplines are less likely to mentor; for example, research mentoring is more common in scientific disciplines with lab components than in other disciplines (DeAngelo et al., 2016). Faculty characteristics can also impact the likeliness to develop mentoring relationships. If faculty view mentoring as too time consuming or as unlikely to be rewarded, they are less likely to engage in it. Also, late-career faculty are less interested in mentoring than midcareer faculty (Morales et al., 2017).

Johnson (2014) stated that an academic program's mentoring culture can affect the development and success of mentoring relationships. Mentoring culture refers to the value the program places on mentoring relationships and how well the program promotes them (Johnson, 2014). Johnson, who has extensively studied the mentoring culture in graduate training programs, stated that reinforcing faculty's engagement in mentoring and regularly assessing the mentoring culture helps to encourage mentoring relationships.

Multiple Mentoring Relationships

While most research on mentoring in academia has focused on one-on-one mentoring, Johnson (2014) argued that multiple mentoring relationships are necessary to meet all the needs of the mentee. Johnson developed a mentoring constellation model that includes formal mentors, advisors, supervisors, and even peers who may serve as mentors. He defined this constellation as the relationships that a person has "with people

who take an active interest in actions to advance the individual's career by assisting with his or her personal and professional development" (p. 34). This concept of a mentoring constellation is similar to what Higgins and Kram (2001) called developmental networks. They stated that no one relationship could meet all the developmental needs of the individual. Johnson et al. (2022) argued that this network of mentoring relationships can meet a student's developmental needs better than a single mentor can.

In a study on multi-mentor models of undergraduate research by Bradley et al. (2017), students with multiple mentors reported more support than those with only one mentor or no mentor. These findings give merit to the need for developmental/mentoring networks. Even peers can sometimes serve as mentors. In a study of undergraduate students, Ward et al. (2014) focused on how upperclassmen served as peer mentors for underclassmen. Some of the benefits of this relationship for the mentees were guidance, emotional support, and accountability. The mentor relationship was especially helpful for students who were academically underprepared or marginalized, as it helped them adjust to college life (Ward et al., 2014).

Psychosocial Development

Erikson

Ultimately, the continued development of mentoring relationships is due to their ability to meet the needs of mentors and mentees. Erik Erikson (1959/1980, 1968), in his theory on psychosocial development, described the crises that occur at each stage of development and the needs that must be met. Erikson held that during adolescence, the developmental need is to gain a sense of identity, and this can continue into young adulthood as well. To relate this to mentoring, individuals who are mentored and are

provided with psychosocial support by their mentors are thus aided in developing their sense of identity. The impact of mentoring on identity development can endure after the relationship ends and even after the mentor's death (Johnson, 2016).

Following the identity stage, the young adult then has the developmental need for intimacy (Erikson, 1959/1980, 1968), which may also be found in the mentoring relationship. As mentorships progress, there can be an increase in intimacy, including feelings of closeness and connection. Significant mentorships can encompass feelings that compare to those in a close friendship (Johnson, 2016). This is sometimes referred to as professional intimacy, which is important to a mentoring relationship, and includes five components: mutual validation, reciprocity, relaxed relational atmosphere, trust, and collaborative flexibility (Rogers & Holloway, 1993).

During middle adulthood, the developmental need is that of generativity, which is an interest in guiding the next generation. If this need is not met, individuals may become stagnated and focus inwardly on themselves (Erikson, 1959/1980, 1968). Current research on psychosocial development in midlife has shown that generativity concerns rise during middle adulthood and that generativity is considered the essential task of midlife (Kuther & Burnell, 2019). In the mentoring relationship, the mentor is given an opportunity to guide the next generation and thus meet the need for generativity. Johnson (2016) stated that "Through mentoring, a professor extends his or her contribution to subsequent generations; the effects of one's work become multigenerational and, in some ways, immortal" (p. 12).

Marcia

James Marcia built on Erikson's theory, describing identity development in terms of both experiencing an identity crisis and then committing to an identity after a period of exploration (Marcia, 1966). Rather than just the two options of identity achievement and identity diffusion proposed by Erikson, Marcia added two additional categories—foreclosure and moratorium. Foreclosure describes individuals who have not gone through an identity crisis but have committed to an identity, primarily based on the wishes and beliefs of their parents. Moratorium describes individuals who are stuck in the period of identity exploration; they have tried out different roles but have not committed to an identity yet. Identity achievement refers to those who have been through a period of identity exploration and have committed to their identity, while identity diffusion refers to those who have neither explored nor committed to an identity (Marcia, 1966; Torres et al., 2003). Because identity development is a key task of undergraduate students, undergraduate mentors must be sensitive to where their mentees are in this process. The psychosocial support provided by mentors can aid students in the task of identity development (Johnson, 2016).

Chickering

Another developmental theorist, Arthur Chickering, devised a theory of college student development that was also based on Erikson's work (Chickering, 1969; Chickering & Reisser, 1993). Chickering's theory included seven vectors or tasks of identity development. The first three vectors typically occur in the early college years, the fourth and fifth during the upperclassmen years, and the sixth and seventh are ongoing into young adulthood (Torres et al., 2003). The seven vectors are developing competence,

managing emotions, becoming autonomous, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity. Again, the psychosocial support provided by mentors, especially early on in this process, can be beneficial to the identity development of students (Johnson, 2016).

Sense of Belonging

Sense of belonging is another concept that, like psychosocial development, may be enhanced by the mentoring relationship. Sense of belonging was first studied as an aspect of perceived cohesion (Bollen & Hoyle, 1990). Perceived cohesion was described as having two dimensions: sense of belonging and feelings of morale. Bollen and Hoyle (1990) examined perceived cohesion in two samples—one in college and one in the city––and found perceived cohesion higher in the city.

The first study to develop a separate measure of sense of belonging was conducted over a decade later by Hoffman et al. (2002). In this study, sense of belonging was defined as " the subjective sense of affiliation and identification with the university community" (Hoffman et al. 2002, p. 228). The Sense of Belonging scale that was developed and then used in Hoffman et al. has four subscales: Perceived Peer Support, Perceived Classroom Comfort, Perceived Isolation, and Perceived Faculty Support.

Researchers have examined what aspects of college life contribute either positively or negatively to a student's sense of belonging. Hurtado and Carter (1997) found that students who discussed course content with other students outside of the classroom had a higher sense of belonging. This study also noted that students' involvement in religious and community organizations was associated with their sense of belonging as well. One factor that contributed negatively to sense of belonging was a

hostile racial climate (Hurtado & Carter, 1997). Other studies that examined first-year college students found that having supported faculty contributes to students' sense of belonging (Means & Pyne, 2017) and that sense of belonging has positive effects on students' institutional commitment and persistence in school (Haussmann, 2009).

Recent studies have also connected university students' sense of belonging and mentoring experiences. Crowe (2020) found that students who participated in a research scholarship program for 1 year had a higher sense of belonging and higher perceptions of faculty support than students who did not participate in the program. The students in the scholarship program had research mentors for the year, while the students in the control group did not, which likely contributed to their increased sense of belonging and faculty support. Also, in a study of Black male college students, Brooms (2020) found that students who identified faculty mentors as important to them stated that these individuals contributed to the students' sense of belonging at their university. The mentors' accessibility and encouragement aided in both the students' sense of belonging and the students' development. Brooms also noted that faculty members are just one part of a student's community, which also includes peers, college staff, and administrators. Future research is needed to study these same concepts in a broader sample that includes students of different races and genders to better understand the relationship between mentoring, sense of belonging, and student development.

Present Study

While Johnson et al. (2022) has extensively researched mentoring in graduate programs, there is a need for greater research on mentoring in the undergraduate years. Previous studies have noted a lack of research on faculty mentoring of undergraduates

(McKinsey, 2016). Aikens et al. (2016) suggested that future research move beyond examining the connection between mentoring and undergraduate research outcomes and explore aspects of the mentor relationship that impact students' intellectual and personal growth as well. They also recommended exploring how interaction frequency and relationship quality affect the closeness of the mentoring relationship (Aikens et al., 2016).

Much of the mentoring research has focused on the dyadic relationship between a single mentor and mentee, but current trends reflect examining various types of mentoring, including peer mentoring and developmental networks or mentoring constellations (Higgins et al., 2007; Johnson, 2016). In a review of the mentoring literature in college students, Crisp and Cruz (2009) stated that research needs to explore other levels of mentoring than just faculty–student relationships. More research is needed to understand how these different mentoring levels are at work in undergraduate settings. Also, research should explore how these various mentoring relationships affect the development of undergraduate students.

The present study was an examination of faculty–student mentoring relationships and peer mentoring relationships in the undergraduate setting using a quantitative approach. Information was collected from students on the frequency of their interactions with both faculty and peer mentors as part of a group mentoring program. Also, information was gathered to assess whether the group mentoring program enhanced the developmental needs of students and their sense of belonging.

Biblical Foundations of the Study

Moses and Joshua

In exploring mentoring from a biblical perspective, examples of mentoring relationships are evident in both the Old and New testaments. One early example of a mentor in scripture is that of Moses, who participated in group mentoring and individual mentoring. In Numbers 11 (*New International Bible*, 1978/2011), God told Moses to gather 70 elders and bring them to the tent of meeting so they could bear the burden of the people with him. Moses mentored these elders in how to minister to the people of Israel. Also, Moses appears to have had an individual mentoring relationship with Joshua, whom Moses appointed as his successor in Deuteronomy 31. Moses also called Joshua to the tent of meeting, where God met with them both and confirmed that Joshua would be the next leader of Israel (Moore, 2007).

Elijah and Elisha

Another example of mentoring in scripture is Elijah and Elisha. Elijah was a prophet in the Old Testament. In 1 Kings 19:16, God told Elijah to anoint Elisha to succeed him as prophet. This began their mentoring relationship. Elisha was described later in 2 Kings 3:11 as the one who poured water on the hands of Elijah, which is a way of signifying the apprenticeship or mentoring relationship that Elisha had with Elijah (Moore, 2007).

Elisha learned from Elijah for several years, and when it was Elijah's time to leave him, Elisha asked for a double portion of Elijah's spirit (2 Kings 2:9). Elijah said that if Elisha saw him be taken, then Elisha would receive it. Elisha did see Elijah taken

up to heaven in a whirlwind in 2 Kings 2:11. Elijah's cloak fell and remained with Elisha, symbolizing the passing of the mantle from mentor to mentee (Moore, 2007).

Jesus and His Disciples

Mentoring is also evident in the New Testament, specifically through the relationships of Jesus and His disciples. Jesus chose His closest disciples and mentored them, both individually and as a group. Jesus saw the potential in ordinary men, such as the fisherman Peter, and called them to follow Him. After following Jesus and learning from him, Peter came to realize that Jesus was the Christ. And in Matthew 16:32-20, Jesus spoke words of hope over Peter's future. Jesus mentored His disciples as a group by dialoging with them about deep spiritual issues and teaching them that true leaders are also servants (Ford, 2014). This mentoring community provided a place of belonging for the disciples, and this can be true today in mentoring communities as well (Lottes, 2005).

Summary

This chapter was a review of the literature on mentoring, psychosocial development, and sense of belonging, primarily in undergraduate student samples. This study's Biblical foundations of the study were also discussed, including examples of mentoring relationships in both the Old and New Testament. The next chapter details the methods used to conduct this study.

CHAPTER 3: RESEARCH METHOD

Overview

Chapter 3 is a summary of the methods that were used in this quantitative study. The study evaluated how a group mentoring program impacted psychosocial development and sense of belonging in undergraduate students. Participants included undergraduate students (ages 18–30 years) from a public university in the southeastern United States. In addition to collecting demographic data, surveys on psychosocial development and sense of belonging were completed. Two repeated-measures multivariate analysis of variables (MANOVAs) were used to examine whether a group mentoring program enhanced psychosocial development and sense of belonging.

Research Questions and Hypotheses

Research Questions

RQ1: Does a group mentoring program enhance the intimacy and identity stages of psychosocial development in college students?

RQ2: Does a group mentoring program enhance the sense of belonging in college students?

Hypotheses

Hypothesis 1: Students will score higher on the Identity and Intimacy subscales of an index of psychosocial development at the end of a group mentoring program than they did at the beginning of the program.

Hypothesis 2: Students will score higher on indices of Sense of Belonging at the end of a group mentoring program than they did at the beginning of the program.

Research Design

The study design was a quantitative repeated-measures field experiment. The independent variable was a group mentoring program with two levels: pretreatment and posttreatment. The dependent variables were psychosocial development and sense of belonging.

This design was chosen for several reasons. First, a group mentoring program already exists at the university where the study researcher teaches, and it made practical sense to use this existing program rather than create a new program just for this study. Second, a field experiment with an existing program offers the benefit of ecological validity, which means that the research findings can be more easily generalized to a real-world setting (Andrade, 2018). Also, the pretest/posttest design was chosen to assess the change in the dependent variables from the beginning to the end of the group mentoring program.

Participants

Participants for this study were recruited from students enrolled in the INTRO 101[1] classes at a southeastern public university in the United States. The only exclusionary criterion for participants of this study was age. Participants ages 18–30 years were recruited. This age range represents a traditional college-age population and fit the developmental stage that is being examined in this study.

The sample size for this study was calculated using G*Power (Faul et al., 2007). The statistical test chosen was a MANOVA, repeated measures, within factors, which is in the *F* tests family. An effect size of .50 was selected as well as an error probability of

[1] Class name changed to mask the site university.

.05. The number of groups was one, and the number of measures was two (pretest, posttest). Thus, the sample size needed for this study was 28 participants.

Study Procedures

Participants were recruited through an email (see Appendix A) at the beginning of the semester that was sent to all students enrolled in an INTRO 101 group mentoring class at a public university in the southeastern United States. The email included a link to a Qualtrics survey that was the pretest survey for this study. Students were asked to complete the survey in the first 2 weeks of the semester. Faculty were asked to encourage their students to participate, and they had the option to offer extra credit to their students who completed the Qualtrics survey.

INTRO 101 class is a freshman seminar designed to help students transition into college and is an opportunity for a group mentoring experience. In each class is a faculty instructor/mentor and a peer mentor (called a pep leader) who is an upperclassman. Thus, there is the opportunity for both faculty–student mentoring and peer mentoring. The class meets weekly and involves discussions on problems commonly encountered by first-year students. Also, information is presented on academic and career planning as well as general information about the university. Students can meet with faculty and peer mentors outside of class if they wish, but the only requirement is to attend the weekly class sessions. More information about this class is provided in the syllabus (see Appendix B).

Participants who completed the first survey were emailed again 2 weeks before the end of the semester. The email included a link to a Qualtrics survey that was the

posttest survey for the project. Students were to complete the survey by the last day of classes for the semester.

Instrumentation and Measurement

Informed Consent

The first study instrument was an informed consent document (see Appendix C) that explained what the study involved, asked if the student was between ages 18–30 years, and obtained the student's consent.

Demographic Measure

A short demographic questionnaire was included that asked the participants questions such as their age, gender, ethnicity, and major (see Appendix D).

Mentoring Engagement Measure

A short questionnaire asked how often students met with their faculty mentor and peer mentor throughout the semester and how often they attended class (see Appendix E). This was only included in the second round of data collection at the end of the semester.

MEPSI

The Modified Erikson Psychosocial Stage Inventory (MEPSI; Darling-Fisher & Leidy, 1988) was the measure of psychosocial development used in this study. Permission to use the MEPSI was obtained by emailing Dr. Darling-Fisher, the scale's author (see Appendix F). The MEPSI (see Appendix G) contains eight subscales that correspond to Erikson's eight stages of psychosocial development (Erikson, 1959/1980, 1968). The MEPSI contains 80 questions that use a Likert-type scale ranging from 1 = *hardly ever true* to 5 = *almost always true*. It has demonstrated internal consistency reliability, with the reliability coefficient for the scale = .97 and the coefficients for the

subscales ranging from .75 to .88. It has also demonstrated construct validity, as Darling-Fisher and Leidy (1988) found a positive correlation between chronological age and overall MEPSI scores. Additional support of construct validity was shown in another study in which the MEPSI scores positively correlated with indicators of adaptation to parenthood, social adjustment, and need satisfaction (Leidy & Darling-Fisher, 1995).

Sense of Belonging Scale

Sense of belonging was measured by the Revised Sense of Belonging Scale (Hoffmann et al., 2002). Permission to use this scale was obtained by emailing Dr. Hoffman, one of the scale's authors (see Appendix H). There are four subscales in the Sense of Belonging Scale (see Appendix I): Perceived Peer Support, Perceived Classroom Comfort, Perceived Isolation, and Perceived Faculty Support.

This measure contains 26 items that use a Likert-type scale, ranging from 1 = *completely untrue* to 5 = *completely true*. This scale has demonstrated internal consistency reliability, with coefficients for the subscales ranging from .82 to .90 (Hoffman et al., 2002). Also, convergent validity was demonstrated by comparing the Sense of Belonging scale with the College Mattering Inventory (Tovar & Simon, 2017).

Operationalization of Variables

Mentoring—This is a repeated-measures, independent variable that was represented by inclusion in the INTRO 101 class at the university, which provides an opportunity for group mentoring. All participants were recruited from these classes. This independent variable had two levels: pretest and posttest. The pretest was during the first 2 weeks of the semester, and the posttest was during the last 2 weeks of the semester. Students had both a faculty and a peer mentor leading the group meetings, both of whom were in the

student's major field. A short questionnaire was included during the second data collection at the end of the semester that asked how often students met with these individuals and how often they attended classes.

Psychosocial development—Psychosocial development is an interval-scale dependent variable that was measured by MEPSI scores. While the measure was included in its entirety, only the Identity and Intimacy subscales were used in this study, as these are the developmental periods that were expected to apply to the undergraduate sample age used in this study.

Sense of belonging—Sense of belonging is an interval scale dependent variable that was measured by the score on the Sense of Belonging scale. All four subscales were used in this study: Peer Support, Classroom Comfort, Perceived Isolation, and Faculty Support.

Data Analysis

SPSS was used for data analysis. The statistical procedure was to run two repeated-measures MANOVAs exploring the mentorship program's impact on the repeated-measures dependent variables of psychosocial development and sense of belonging. MANOVA was the statistical test used because there was one repeated-measures independent variable, the group mentoring program, and this study assessed its impact on more than one dependent variable, psychosocial development and sense of belonging. Thus, a repeated-measures MANOVA was the most appropriate test to explore the relationship among these variables, following guidance in Green and Salkind (2012).

Delimitations, Assumptions, and Limitations

One delimitation in this study was the choice to research mentoring in the undergraduate population, specifically in the 18–30 year age range. This is a traditional college-age population and fit the developmental stage that was examined in this study. One assumption in this study was that participants would answer the questions honestly. Another assumption was that students would be engaged in the group mentoring program.

One limitation was that participants may answer the questions in a way that is socially desirable rather than answering them honestly. Another limitation was that data were collected from only one university and the results may or may not generalize to other universities. Yet another limitation was that of time, as one semester may not be long enough to see the impact of a mentoring relationship on the development and sense of belonging of the students.

Summary

While many researchers have examined dyadic mentoring in the undergraduate population, there are few studies on group mentoring in this population. Also, research has assessed mentoring in relation to both psychosocial development and sense of belonging, but not in the same study. The primary aim of this study was to understand a group mentoring program's impact on psychosocial development and sense of belonging in undergraduate students. This chapter detailed the approach used to address the research questions, the research design, and the research rationale. In addition, the researcher

outlined the population, sampling strategies, instrumentation, and data collection and analysis.

CHAPTER 4: RESULTS

Overview

This chapter presents statistical analyses for each of the research hypotheses. Descriptive statistics of demographic variables and study variables are presented. The results of two MANOVAs and one *t* test are shared as well. The first MANOVA was used to test the hypothesis that students would score higher on the Intimacy and Identity subscales of psychosocial development at the end of the group mentoring program than at the beginning of the group mentoring program. The second MANOVA and the *t* test were used to test the hypothesis that students would score higher on indices of Sense of Belonging at the end of a group mentoring program than they did at the beginning of the program; the MANOVA was for the subscales, and the *t* test was for the overall Sense of Belonging scale. One additional analysis was run as well, a mixed ANOVA compared pretest and posttest Sense of Belonging scores for Whites and other ethnic groups.

Descriptive Results

Surveys were completed by 336 participants during the pretest data collection at the beginning of the semester. Of the original 336 participants, surveys were completed by 151 during the posttest data collection at the end of the semester. Thus, descriptive statistics were reported for N =151. The age range was 18–19 years (M = 18.08). The sample was 76.8% female, 21.9% male, and 1.3% nonbinary. Regarding ethnicity, the sample was 80.1% White, 14.6% Black, and 5.3% other ethnic groups.

In the posttest survey, questions were asked about how often the students attended class, how often they met outside of class with their faculty instructor, and how often they met outside of class with their peer mentors (pep leaders). Answers ranged from 1–

4, with higher scores indicating greater attendance and more meetings with faculty and peer mentors. Means and standard deviations were as follows: attendance, $M = 3.55$, $SD = .64$; meetings with their instructor, $M = 1.91$, $SD = .87$; and for meetings with their pep leader, $M = 1.73$, $SD = .96$. See Table 1 for percentages of students' answers for these questions.

Table 1

Pretest and Posttest Percentages for Mentoring Engagement Questions

Question/answer choices	%
Attendance	
Rarely attended	0.7
About half the classes	6.0
Most classes	31.1
Every class	61.6
Met with faculty mentor	
Never	34.4
1–2 times during the semester	45.7
1–2 times a month	11.3
Weekly	7.3
Met with peer mentor	
Never	55.6
1–2 times during the semester	22.5
1–2 times a month	13.9
Weekly	7.3

Some participants had missing values for questions on the MEPSI subscales of Identity and Intimacy and the four subscales of the Sense of Belonging scale. Thus, descriptive statistics for the MEPSI are reported for $N = 139$, and descriptive statistics for the Sense of Belonging subscales are reported for $N = 140$. See Table 2 for the

descriptive statistics for the MEPSI subscales and Table 3 for the descriptive statistics for the Sense of Belonging subscales.

Table 2

Means and Standard Deviations for Modified Erikson Psychosocial Stage Inventory (MEPSI) Subscales

Variable	Pretest		Posttest	
	M	*SD*	*M*	*SD*
MEPSI Identity	3.54	.71	3.45	.71
MEPSI Intimacy	3.51	.67	3.48	.66

Table 3

Means and Standard Deviations for Sense of Belonging Subscales

Variable	Pretest		Posttest	
	M	*SD*	*M*	*SD*
Peer Support[a]	2.93	.95	3.29	1.09
Classroom Comfort	2.96	1.02	3.03	1.12
Perceived Isolation[a]	2.84	1.00	3.01	.99
Faculty Support	3.66	.72	3.56	.88
Total score	3.20	.67	3.31	.77

[a]Statistically significant pretest/posttest change.

Study Findings

Data were exported from Qualtrics into SPSS. Descriptive statistics for demographic variables and study variables were calculated first. Assumptions for the

MANOVAs, the *t* test, and the mixed ANOVA were met, such as normality and homogeneity of variance. Then the appropriate tests were run for each hypothesis.

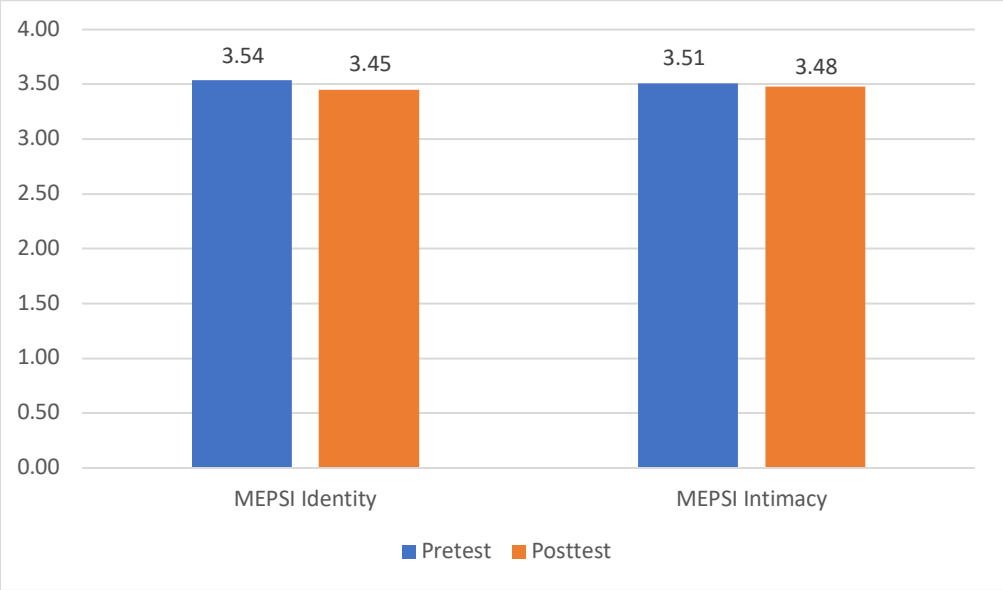
Hypothesis 1

The first hypothesis was that students would measure higher on the Identity and Intimacy subscales of indices of psychosocial development at the end of a group mentoring program than they did at the beginning of the program. To test this hypothesis, a repeated-measures MANOVA was calculated with group mentoring as the within-groups independent variable and the Intimacy and Identity subscales of the MEPSI as the dependent variables. This was the appropriate test to use for this hypothesis because the subscales of Intimacy and Identity were moderately correlated with one another.

For the MEPSI Identity subscale, the results were marginally significant, but in the opposite direction of what was predicted, F (1, 138) = 3.55, p = .06, partial η^2 = .025 (see Figure 1). Specifically, it was found that participants did not score higher on the MEPSI Identity subscale at the end of the program than they did at the beginning of the program as was predicted; instead, there was a marginally significant decrease in pretest to posttest scores. For the MEPSI Intimacy subscale, the results were not significant, F (1, 138) = .62, p = .43, partial η^2 = .004. Participants did not score significantly higher on the MEPSI Intimacy subscale at the end of the program than they did at the beginning of the program. See Figure 1.

Figure 1

Means for Pretest and Posttest Modified Erikson Psychosocial Stage Inventory (MEPSI) Identity and Intimacy Scores



Hypothesis 2

The second hypothesis was that students would measure higher on indices of Sense of Belonging at the end of a group mentoring program than they did at the beginning of the program. A second repeated-measures MANOVA was calculated with group mentoring as the within-groups independent variable and the four subscales of the Sense of Belonging scale as the dependent variables: Perceived Peer Support, Classroom Comfort, Perceived Isolation, and Faculty Support. This was the appropriate test to use because the subscales of the Sense of Belonging Scale were moderately correlated with one another.

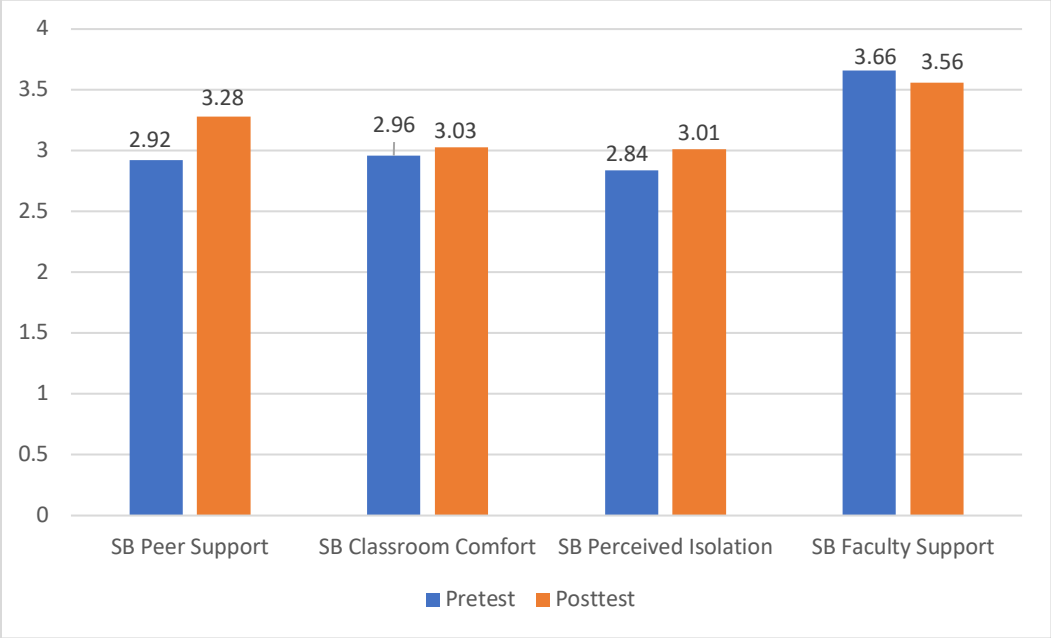
For the Sense of Belonging Peer Support subscale, the results were significant, $F(1, 139) = 21.18$, $p < .001$, partial $\eta^2 = .13$. Participants scored significantly higher on the Peer Support subscale at the end of the program than they did at the beginning of the

program. For the Sense of Belonging Classroom Comfort subscale, the results were not significant, F (1, 139) = 4.56, p = .39, partial η^2 = .005. Participants did not score significantly higher on the Classroom Comfort subscale at the end of the program than they did at the beginning of the program.

For the Sense of Belonging Perceived Isolation subscale, the results were significant, F (1, 139) = 4.56, p = .03, partial η^2 = .03. Participants did score significantly higher on the Perceived Isolation subscale at the end of the program than they did at the beginning of the program (this scale was reverse scored). For the Sense of Belonging Faculty Support subscale, the results were not significant, F (1, 139) = 1.96, p = .16, partial η^2 = .01. Participants did not score significantly higher on the faculty support subscale at the end of the program than they did at the beginning of the program. See Figure 2.

Figure 2

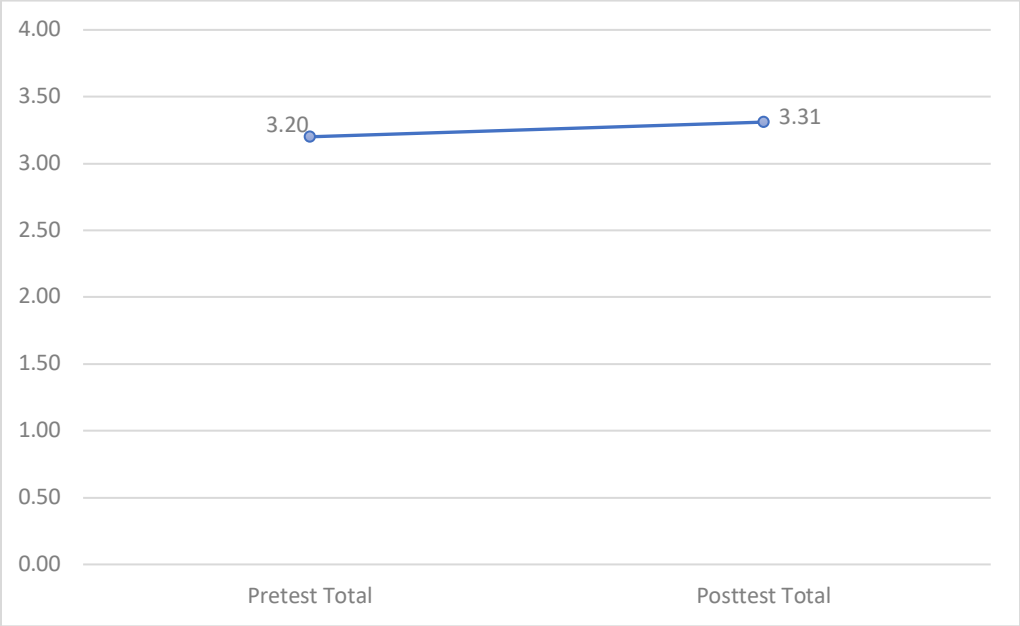
Means for Pretest and Posttest Sense of Belonging (SB) Subscale Scores



A repeated-measures *t* test was also calculated for the overall Sense of Belonging scale. The results of this *t* test were significant, t (1, 139) = –2.35, p = .01. Participants did score higher on the overall Sense of Belonging scale at the end of the program than they did at the beginning of the program. See Figure 3.

Figure 3

Means for Pretest and Posttest Sense of Belonging (SB) Total Scores



Additional Analysis

A mixed ANOVA was calculated to compare the change in the Sense of Belonging pretest and posttest scores for White and non-White participants. See Table 4 for means and standard deviations.

Table 4

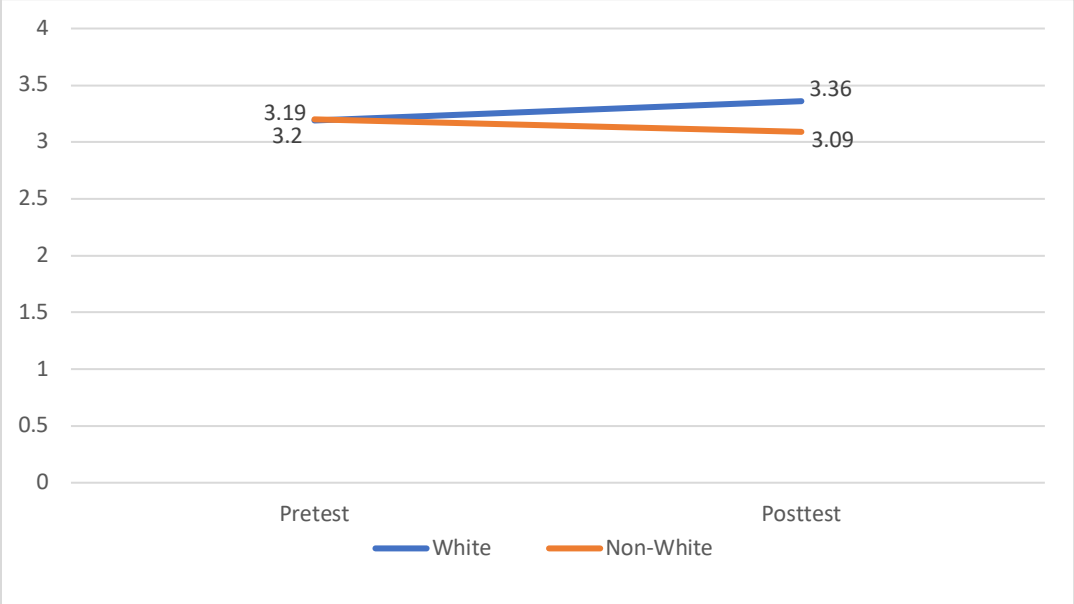
Means and Standard Deviations for Pretest and Posttest Sense of Belonging Scores for Whites and Non-Whites

Variable	Pretest		Posttest	
	M	*SD*	*M*	*SD*
Ethnicity				
White (*n* = 113)	3.19	.68	3.36	.77
Non-White (*n* = 27)	3.20	.64	3.09	.75

This analysis was conducted because some previous studies have shown that non-White students may struggle with sense of belonging in a university setting more than White students. There was no significant within-groups difference for sense of belonging, F (1,138) = .22, p = .64, as pretest and posttest scores did not significantly change. There was a significant between-groups difference for ethnicity, in which Whites scored higher overall on the Sense of Belonging scale compared to non-Whites, F (1,138) = 2046.58, p < .001, η^2 = .94. There was also a significant interaction in which White students' Sense of Belonging scores pretest to posttest increased, and non-White students' Sense of Belonging scores pretest to posttest decreased, F (1,138) = 5.33, p = .02, η^2 = .04. See Figure 4.

Figure 4

Interaction of Ethnicity and Time of Test for Sense of Belonging Scale



Summary

This chapter included statistical analyses and results for both research hypotheses. Descriptive statistics were reported for demographic variables and study variables. The results of two MANOVAs and a *t* test were also presented. The first research hypothesis was not supported. While the results were significant for the Identity subscale of the MEPSI, they were in the opposite direction as predicted. The second research hypothesis was partially supported, as the results were significant for two subscales of the Sense of Belonging scale and the overall Sense of Belonging scale, and these were in the predicted direction. The final chapter is a discussion of the research findings in relation to the current literature on mentoring, psychosocial development, and sense of belonging.

Implications of the findings, future research ideas, and limitations of the study are also discussed.

CHAPTER 5: DISCUSSION

Overview

This chapter is a review of the study purpose and a summary of the research findings. These findings are discussed in light of the literature on mentoring, psychosocial development, and sense of belonging that was presented in Chapter 2. The findings are also related to the theoretical concepts that were discussed in Chapter 2. Study implications, future research ideas, and study limitations are also discussed.

The purpose of this quantitative study was to examine the impact of a group mentoring program on both psychosocial development and sense of belonging in undergraduate students. The study focused on answering two research questions:

RQ1: Does a group mentoring program enhance the intimacy and identity stages of psychosocial development in college students?

RQ2: Does a group mentoring program enhance the sense of belonging in college students?

Summary of Findings

Hypothesis 1

The first hypothesis was that students would measure higher on the Identity and Intimacy subscales of indices of psychosocial development at the end of a group mentoring program than they did at the beginning of the program. This hypothesis was not supported by the study findings. While there was a marginally significant difference in the pretest and posttest scores on the Identity subscale of the MEPSI, this difference was in the opposite direction as predicted. College students' scores on the Identity subscale measured lower at the end of the group mentoring program than they did at the

beginning of the program. There was no significant difference in pretest and posttest scores on the Intimacy subscale of the MEPSI.

Hypothesis 2

The second hypothesis was that students would measure higher on indices of Sense of Belonging at the end of a group mentoring program than they did at the beginning of the program. This hypothesis was partially supported by the study findings. For the Peer Support and Perceived Isolation subscales of the Sense of Belonging Scale, there was a significant difference in the pretest and posttest scores. Students scored significantly higher on these measures at the end of the mentoring program than they did at the beginning of the program. For the overall Sense of Belonging scale, there was also a significant difference in the pretest and posttest scores. Students scored significantly higher on the overall scale at the end of the mentoring program than they did at the beginning of the program. There was no significant difference in pretest and posttest scores on the Classroom Comfort and Faculty Support subscales of the Sense of Belonging Scale.

Discussion of Findings

Previous research has focused on the importance of multiple mentoring relationships and their impact on the development of those being mentored. Higgins and Kram (2001) called these developmental networks and stated that no one mentoring relationship could meet all the developmental needs of an individual. Johnson (2014) also argued that multiple mentoring relationships are necessary to meet the mentee's needs. Johnson et al. (2022) stated that a network of mentoring relationships can meet a student's developmental needs better than any single mentor can.

While the group mentoring program in this study did not appear to have a positive impact on psychosocial development as predicted, there are several potential reasons for this finding. First, it is possible that one semester is not long enough to measure the long-term impact of mentoring relationships on a college student's development. Students may need to be evaluated after a greater amount of time to see the impact of mentoring on their identity development, as it takes time to build mentoring relationships. Kram (1983) discussed the different phases of the mentoring relationship. It begins with the initiation phase, in which the mentor and mentee get to know each other. Next is the cultivation phase, in which career and psychosocial needs are met, and they value relating to one another (Kram, 1983). It is possible that because of the short amount of time in which this study was conducted, the mentors and the mentee were still in the initiation phase and had not yet reached the cultivation phase of mentoring, where psychosocial needs are met.

Second, the semester that was studied—the first semester of the freshman year—is a time when students may become more confused about their identity rather than more certain about their identity due to the life changes that occur at that time. Marcia (1966) identified a category of identity development called moratorium, which describes individuals who are stuck in a period of identity exploration. They have tried out different roles but have not yet committed to an identity. First-semester freshmen are in the process of trying out new roles, and they may not be ready to commit to their identity at the end of just one semester. Thus, measuring students at the end of this particular semester may have been in the middle of a changing time in their identity development,

so it is not entirely surprising that some were more uncertain about their identity at the end of the semester than at the beginning.

Another possible explanation for this finding is that there may not have been much mentoring occurring in some of the group mentoring classes. Approximately 50 different instructors were teaching various sections of the INTRO 101 classes, and these instructors likely varied in their approaches to the class and how much mentoring they initiated with their students. Not all instructors may have engaged in mentoring outside of class with their students. According to the mentoring questions that were asked in the second round of data collection at the end of the semester, most students either met with their peer mentors and faculty mentors one to two times outside of class for the whole semester or did not meet outside of class with them at all. While there may be some mentoring that occurs in the classroom setting, previous research has shown that it is primarily time outside of the classroom where mentoring relationships would be built that could impact students' development (Johnson, 2014; McKinsey, 2016).

Yet another factor to consider is that neither the students nor the faculty chose this mentoring relationship. Faculty were assigned to teach INTRO 101 class for a group of freshmen who were majoring in their discipline. Students were told that they had to take the INTRO 101 class as part of their first-semester coursework. The fact that these mentoring relationships were chosen for the students and faculty could have affected the degree to which they engaged in the relationship. Previous research on mentoring has shown that students may benefit most from unplanned natural mentoring, which can be essential to student development (McKinsey, 2016). The mentoring in this study was more of a planned relationship than something that occurred naturally.

Previous research has also established the relationship between mentoring and a sense of belonging. Crowe (2020) found that students who had research mentors for a year had a higher sense of belonging and higher perceptions of faculty support than a control group that did not participate in the program. In the present study, group mentoring did appear to have a positive impact on college students' sense of belonging in two areas: peer support and perceived isolation. Students reported that they felt more peer support and less isolation at the end of the semester than they did at the beginning of the semester, which contributed to an increase in their overall sense of belonging for the semester.

However, the mentoring program did not seem to have an impact on the classroom comfort or the faculty support aspects of students' sense of belonging. This is somewhat surprising, especially concerning faculty support, as one would expect that students would have felt supported by the faculty in their mentoring program. A possible contributing factor, previously mentioned when discussing identity development, is that most of the students did not meet with the faculty outside of class. Thus, they may not have yet built the relationships with faculty that would have made them feel supported. It takes time to build these kinds of mentoring relationships, as Kram (1983) explained in her discussion of the phases of mentoring relationships.

An unexpected finding in this study was the differences in how White students' and non-White students' sense of belonging changed throughout the semester. While White students experienced an overall increase in sense of belonging from the beginning to the end of the mentoring program, non-White students experienced a decrease in their sense of belonging. Previous research has shown that non-White students often have a

lower sense of belonging than White students, especially at predominantly White universities; one way these universities are trying to improve the sense of belonging in non-White students is through peer mentoring (Graham & McClain, 2019).

Regarding the Biblical foundations of mentoring discussed in Chapter 1, this study's findings reiterated the connection between mentoring and a sense of belonging. This connection was evident in the relationships that Jesus had with His disciples. Jesus mentored His disciples as a group by dialoguing with them about deep spiritual issues (Ford, 2014). This mentoring community provided a place of belonging for the disciples, and this can be true of mentoring communities in churches today as well (Lottes, 2005).

Implications

This study's findings are important for both researchers and educators who are concerned about the psychosocial development of and sense of belonging in college students. In mentoring relationships, time spent together outside of the classroom and length of the relationship are important factors, and future group mentoring programs should consider the study findings in addressing these issues. Perhaps more time with both faculty mentors and peer mentors outside of the classroom could help with students' identity development. Increasing the program to 1 year instead of just one semester may also be helpful, as one semester does not seem to have been long enough to see an improvement in identity development. Also, universities need to account for the lower sense of belonging often experienced by non-White students and structure mentoring programs accordingly.

The findings regarding mentoring and a sense of belonging are also important for churches. As participants in this study experienced an increase in their sense of belonging

at their university after the group mentoring program, so could church members feel an increased sense of belonging at their church after participating in a group mentoring program there. Jesus mentored His disciples and provided them with a place of belonging, and churches can strive to do the same.

Limitations

One limitation of this study is that participants may have answered the questions in a way that was socially desirable rather than answering them honestly, as is often a potential concern when using self-report surveys in research. Another limitation is that data were collected from only freshmen at one university, and the results may or may not generalize to upperclassmen or other universities. Yet another limitation is that of time, as one semester may not have been long enough to see the impact of a mentoring relationship on the development and sense of belonging of the students. One final limitation of the study was using only a within-groups design. Having a mixed design that also includes a between-groups component for comparison could show if the changes in development and belonging were due solely to the involvement in the group mentoring program or if they would have happened over the course of the semester anyway.

Recommendations for Future Research

Future research should follow students for more than one semester to determine mentoring's impact on psychosocial development. The group of participants in this study could be followed up with later in their college careers, perhaps in another year or two, to measure their continued psychosocial development. Also, future research could use a qualitative approach. It may be beneficial to ask students open-ended questions about the aspects of their mentoring relationships that are helpful to them. These questions could

then be coded to look for common themes that occur, and those topics could be further explored. Future research could use a mixed experimental design to allow for a control group as well.

Future research should also continue to explore mentoring's impact on sense of belonging in college students. Even a short amount of time, just one semester, was enough to show a difference in college students' sense of belonging, but this was primarily for peer support and perceived isolation. Future research should examine ways that faculty support can be improved and can contribute to a sense of belonging in college students as well. Special consideration should be given to non-White students' sense of belonging and finding ways to improve this, especially at predominantly White universities.

Summary

This study showed the impact of group mentoring on sense of belonging in college students, especially regarding support from their peers and not feeling isolated. The study did not show a positive impact on the psychosocial development of college students, and some reasons for this were discussed. The study implications include helping to further develop mentoring programs for undergraduates that meet their developmental and belonging needs. Future research should explore mentoring in undergraduates over a longer period of time and should also consider using a qualitative approach.

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APPENDIX A: RECRUITMENT EMAIL

I am conducting research as part of the requirements for a Doctor of Philosophy degree at Liberty University. The purpose of my research is to examine the effects of a group mentoring program (i.e., the [redacted] class) on the development and sense of belonging of freshman undergraduate students. To participate, you must be between the ages of 18 and 30 and must be classified as a freshman. Participants will be asked to complete two online surveys - one during the first week of the fall semester, and one during the last week of the fall semester. Each survey should take about 15-20 minutes to complete. If you would like to participate and meet the study criteria, please click on the Qualtrics link below to access the survey. A consent document is provided as the first page of the survey. You will be contacted again during the last week of the semester with the link for the second survey. Thank you for your consideration.

APPENDIX B: SAMPLE INTRO COURSE SYLLABUS

[redacted]
Department of [enter your department name here]
Fall 2023

BASIC INFORMATION

General Studies 101 – 2 credits
Prereq: None
Text: none

Other Requirements:

Instructor: [enter your name here]
Office: [enter your office location here]
Phone: [enter your office phone number here]
E-mail: [enter your email address here]
Office hours: [enter details about your office hours here]

COURSE PURPOSE, GOALS, AND OBJECTIVES

Course Description: Study and small group discussion of problems commonly encountered by students making the transition from high school to college. Assigned reading on current topics, informational programs presented by major academic units, academic and career planning placement and proficiency testing in addition to a general orientation to the university, are the major aspects of the course.

Course Purpose: To introduce the student to the [redacted] campus and culture. To acclimate the student to the responsibilities required to be successful in college.

Student Learning Objectives:

1. Develop a foundation for academic success.

   Students will:
   a. Understand academic policies, procedures, and resources at [redacted] that relate to student success.
   b. Explore, adapt, and utilize academic strategies to enhance learning experiences.
   c. Develop appropriate communication practices within the university environment.

2. Develop strategies and approaches that promote personal success and well-being.

   Students will:
   a. Understand the value of a growth mindset and resilience in the face of challenge.
   b. Demonstrate an awareness of resources promoting social and emotional wellness.

c. Develop and employ time management and goal setting strategies.
d. Understand the value of financial and information literacy.

3. Explore and connect with UT Martin.

   Students will:
   a. Create and maintain positive relationships with students, faculty, and staff.
   b. Develop an awareness of and be prepared to contribute to campus culture at UT Martin.
   c. Discover and engage with cultural, experiential, co-curricular, and professional opportunities at UT Martin.

4. Explore UT Martin's connection to their sense of purpose.

   Students will:
   a. Examine the relationship between curriculum and career.
   b. Understand career options related to curriculum (purpose, not position).
   c. Understand the value of co-curricular and networking opportunities.

5. Understand the value of a diverse community of learners and the importance of social and civic responsibility in the university environment.

   Students will:
   a. Understand how their values and identities shape their perspectives, relationships, and interactions and contribute to a diverse campus community.
   b. Engage with campus-wide initiatives to promote a sustainable, equitable, and inclusive learning community.

COURSE REQUIREMENTS/EXPECTATIONS

- The student will be on time and prepared for each class
- The student will be attentive and interact with classmates, PEP leaders and instructors
- The student will complete assignments on time
- The student will ask a PEP leader or the instructor questions
- Cell phones and ear buds are not allowed in class unless we are using the cell phone as part of an assignment.

Grading System:
Participation [XX%]
Understanding Academic Curriculum Activities – [XX%]
Showing Understanding for Interpersonal Comm. Activities – [XX%]
Decision Making and Time Management Skills Activities – [XX%]
Communication Skills for Success Activities – [XX%]
Technical Skills for Success – [XX%]
Final Examination – [XX%]

Grading Scale:	90% -	100%	= A
	80% -	89%	= B
	70% -	79%	= C
	60% -	69%	= D

Attendance Policy:

Students are expected to come to class. Points are not awarded when the student is absent.

DISABILITY STATEMENT

The [redacted] provides reasonable accommodations (academic adjustments and auxiliary aids) to ensure equal access to educational content and university programs for students with disabilities. Students who are approved for accommodations are responsible for requesting accommodation letters be sent to faculty each semester. The Office of Disability Services is located at [redacted] Contact information: [redacted] or [redacted]

It is recommended that a course calendar be added here.

APPENDIX C: INFORMED CONSENT

Consent Form

Title of the Project: Mentoring, Psychosocial Development, and Sense of Belonging in Undergraduate Students
Principal Investigator: Natasha Varnick, Doctoral Candidate, Psychology Department, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be a freshman at [redacted] enrolled in [redacted] 101. You must also be between the ages of 18 and 30 years old. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

The purpose of the study is to examine the impact of a group mentoring program on the development and sense of belonging in college students.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following:

1. Complete an online survey at the beginning of the semester. This should take 15-20 minutes.
2. Complete another online survey at the end of semester. This should also take 15-20 minutes.

How could you or others benefit from this study?

The direct benefits that participants should expect to receive from taking part in this study include the possibility of your [redacted] 101 professor offering you extra credit for completing this survey.

Benefits to society include a better understanding of how a group mentoring program impact the development and sense of belonging of college students.

What risks might you experience from being in this study?

The expected risks from participating in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Published reports will not include any information that will make it possible to identify a subject. Research records will be stored securely, and only the researcher will have access to the records.

- Participant responses will be kept confidential by replacing names with participant numbers.
- Data collected from you may be used in future research studies. If data collected from you is reused or shared, any information that could identify you, if applicable, will be removed beforehand.
- Data will be stored on a password-locked computer. After five years, all electronic records will be deleted.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University or the [redacted]. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please exit the survey and close your internet browser Your responses will not be recorded or included in the study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Natasha Varnick. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [redacted]. You may also contact the researcher's faculty sponsor, Dr. Kevin Ganey, at [redacted].

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

Before agreeing to be part of the research, please be sure that you understand what the study is about. You can print a copy of the document for your records. If you have any questions about the study later, you can contact the researcher using the information provided above.

APPENDIX D: DEMOGRAPHIC MEASURE

1. What is your name? _____
2. What is your student ID? _____
3. What is your age? _____
4. What is your major? _____
5. What is your gender?
    a. Male
    b. Female
    c. Non-binary
    d. Prefer not to answer
6. What is your ethnicity?
    a. Caucasian/White
    b. African American
    c. Hispanic
    d. Asian
    e. Native American
    f. Other
    g. Prefer not to answer

APPENDIX E: MENTORING ENGAGEMENT QUESTIONNAIRE

1. How often did you attend the [redacted] 101 class this semester?

    a. Every class
    b. Most classes
    c. About half the classes
    d. Rarely attended

2. How often did you meet with your [redacted] 101 faculty mentor this semester outside of class?

    a. Weekly
    b. 1-2 times a month
    c. 1-2 times during the whole semester
    d. Never

3. How often did you meet with your pep leader (peer mentor) this semester outside of class?

    a. Weekly
    b. 1-2 times a month
    c. 1-2 times during the whole semester
    d. Never

APPENDIX F: MODIFIED ERIKSON PSYCHOSOCIAL STAGE INVENTORY

PERMISSION EMAIL

From: Cynthia Darling-Fisher [redacted]
Subject: Re: MEPSI request
Date: October 29, 2022 at 11:05 AM
To: Varnick, Natasha Lindley [redacted]

Dear Ms. Varnick:

I was pleased to hear of your interest in the Modified Erikson Psychosocial Stage Inventory (MEPSI). Your dissertation research studying psychosocial development in the context of the mentoring relationship between faculty and students sounds very interesting. I hope you find the MEPSI useful for your research.

As you requested, I have enclosed an instrument packet (user's guide and inventory). This provides a brief summary of current research using the instrument as well references for the specific research projects. You are free to use the instrument in your research. We only ask that you not change it - no changes in the instructions, items, response options or scoring. This assures consistent use and score meaning across studies.

As is mentioned in the user's guide, we would like to know if you do decide to use the instrument. We would also appreciate an abstract of your findings and your sharing any results concerning the reliability and validity of the inventory. This will help us in our on-going evaluation of the MEPSI.

Should you need to translate the MEPSI into another language, please make certain translations follow the attached ISPOR Guidance, to assure linguistic and cultural content and score equivalence. Please do not change the instructions, items or scoring. During the translation process, any changes/edits to the content should reflect constructs in the target language and culture, and not personal preferences of the researchers. This is absolutely necessary to assure score equivalence and interpretability across all translations of the instrument.

Please contact me if you have any questions or need any additional information.

Good luck on your research. I look forward to hearing about your findings.

Sincerely,

Cindy

Cynthia S. Darling-Fisher, PhD, FNP-BC, FAANP
Clinical Associate Professor Emerita
University of Michigan School of Nursing
[redacted]

APPENDIX G: MODIFIED ERIKSON PSYCHOSOCIAL INVENTORY (MEPSI)

THE MODIFIED ERIKSON PSYCHOSOCIAL STAGE INVENTORY (MEPSI)

We would like to know a little about you and how you view your situation. Here are some thoughts that most people have about themselves at one time or another. Please read each sentence and CIRCLE the number, on the scale of 1 (HARDLY EVER TRUE) to 5 (ALMOST ALWAYS TRUE), which shows how often the sentence is true of you. Don't spend a lot of time thinking about your response. There are no right or wrong answers. *Please do not omit any answers.*

How often is this true of you?	HARDLY EVER TRUE	OCCA-SION ALLY TRUE	ABOUT HALF THE TIME	USUALLY TRUE	ALMOST ALWAYS TRUE
1. I am able to take things as they come	1	2	3	4	5
2. I'm a hard worker	1	2	3	4	5
3. I get embarrassed when someone begins to tell me personal things	1	2	3	4	5
4. I'm warm and friendly	1	2	3	4	5
5. I really believe in myself	1	2	3	4	5
6. I change my opinion of myself a lot	1	2	3	4	5
7. I like to assume responsibility for things	1	2	3	4	5
8. I've got a clear idea of what I want to be	1	2	3	4	5
9. I feel mixed up	1	2	3	4	5
10. I find the world a very confusing place	1	2	3	4	5
11. I feel guilty about many things	1	2	3	4	5
12. I know when to please myself and when to please others	1	2	3	4	5
13. The important things in life are clear to me	1	2	3	4	5
14. I don't seem to be able to achieve my ambitions	1	2	3	4	5

How often is this true of you?	HARDLY EVER TRUE	OCCA-SION ALLY TRUE	ABOUT HALF THE TIME	USUALLY TRUE	ALMOST ALWAYS TRUE
15. I don't seem to have the ability that most others have	1	2	3	4	5
16. I've got it together	1	2	3	4	5
17. I know what kind of person I am	1	2	3	4	5
18. I worry about losing control of my feelings	1	2	3	4	5
19. As I look over my life, I feel the need to make up for lost time	1	2	3	4	5
20. I feel that I have the wisdom and experience to be of help to others	1	2	3	4	5
21. I feel that I have left my mark on the world through my children/work	1	2	3	4	5
22. I rely on other people to give me ideas.	1	2	3	4	5
23. I think I must be basically bad	1	2	3	4	5
24. Other people understand me	1	2	3	4	5
25. I can't decide what I want to do with my life	1	2	3	4	5
26. It's important to me to be completely open with my friends	1	2	3	4	5
27. I spend a great deal of time thinking about myself	1	2	3	4	5
28. I find that good things never last long	1	2	3	4	5
29. I feel I am a useful person to have around	1	2	3	4	5
30. I keep what I really think and feel to myself	1	2	3	4	5

How often is this true of you?	HARDLY EVER TRUE	OCCA-SION ALLY TRUE	ABOUT HALF THE TIME	USUALLY TRUE	ALMOST ALWAYS TRUE
31. I have many regrets about what I might have become	1	2	3	4	5
32. I'm an energetic person who does lots of things	1	2	3	4	5
33. I'm trying hard to achieve my goals	1	2	3	4	5
34. Things and people usually turn out well for me	1	2	3	4	5
35. I am afraid of growing old	1	2	3	4	5
36. I think the world and people in it are basically good	1	2	3	4	5
37. I am ashamed of myself	1	2	3	4	5
38. I'm good at my work	1	2	3	4	5
39. I think it's crazy to get too involved with people	1	2	3	4	5
40. People try to take advantage of me	1	2	3	4	5
41. I like myself and am proud of what I stand for	1	2	3	4	5
42. I have a sense that there is purpose in my life	1	2	3	4	5
43. I feel inadequate in my interactions with others	1	2	3	4	5
44. I find myself expecting the worst to happen	1	2	3	4	5
45. I care deeply for others	1	2	3	4	5
46. My achievements and failures are largely a consequence of my own actions	1	2	3	4	5

How often is this true of you?	HARDLY EVER TRUE	OCCA-SION ALLY TRUE	ABOUT HALF THE TIME	USUALLY TRUE	ALMOST ALWAYS TRUE
47. I find I have to keep up a front when I'm with people	1	2	3	4	5
48. I don't really feel involved	1	2	3	4	5
49. I can't make sense of my life	1	2	3	4	5
50. It is important to me to feel that I have made a contribution in life	1	2	3	4	5
51. There's a lot about my life I'm sorry about	1	2	3	4	5
52. I waste a lot of my time	1	2	3	4	5
53. I'm as good as other people	1	2	3	4	5
54. I like to make my own choices	1	2	3	4	5
55. I am disgusted by other people	1	2	3	4	5
56. I feel at peace with my life	1	2	3	4	5
57. I don't feel confident of my judgement	1	2	3	4	5
58. I'm basically a loner	1	2	3	4	5
59. I cope very well	1	2	3	4	5
60. I have difficulty relating to people different from me	1	2	3	4	5
61. I'm not much good at things that need brains or skill	1	2	3	4	5
62. I have (have had) a close physical and emotional relationship with another person	1	2	3	4	5
63. I have discovered no mission or purpose in life	1	2	3	4	5

How often is this true of you?	HARDLY EVER TRUE	OCCA-SION ALLY TRUE	ABOUT HALF THE TIME	USUALLY TRUE	ALMOST ALWAYS TRUE
64. I stick with things until they're finished	1	2	3	4	5
65. I'm a follower rather than a leader	1	2	3	4	5
66. I find it hard to make up my mind	1	2	3	4	5
67. I trust people	1	2	3	4	5
68. I like to take risks	1	2	3	4	5
69. I worry about how others perceive me.	1	2	3	4	5
70. It is more important to work on behalf of those I care about than to work just for myself	1	2	3	4	5
71. I like new adventures	1	2	3	4	5
72. I prefer not to show too much of myself to others	1	2	3	4	5
73. If I could live my life over, there is little I would change	1	2	3	4	5
74. I don't get things finished	1	2	3	4	5
75. I like finding out about new things or places	1	2	3	4	5
76. I don't get much done	1	2	3	4	5
77. I find it easy to make close friends	1	2	3	4	5
78. I can't make up my own mind about things	1	2	3	4	5
79. As I look back over my life, I realize my parents did the best they could for me	1	2	3	4	5
80. I am proud of what I have accomplished in my life	1	2	3	4	5

APPENDIX H: SENSE OF BELONGING SCALE PERMISSION EMAIL

From: Morrow, Jennifer Ann [redacted]
Subject: RE: Sense of belonging scale
Date: February 16, 2023 at 1:29 PM
To: Varnick, Natasha Lindley [redacted]

JM

Natasha,

Sadly, Ms. Hoffman passed away a couple of years ago (she left academia before she finished her degree) and Dr. Richmond is retired. I've attached the modified scale (we modified the scoring to be 4 subscales instead of 5) and the original article. You can obtain reliability and validity information from any number of researchers that have cited and used the article since then.

You are free to use the scale in any project, just properly cite it. Just so you are aware I have just started the process of revising the scale as part of a two-year long scale development project. It won't be ready in time for your project but I will publish the new scale when it's completed. I'm hoping it will be more inclusive than the current version.

JM

Jennifer Ann Morrow, Ph.D.
(she/her/hers)
Associate Professor of Evaluation, Statistics, and Methodology
University of Tennessee
Educational Leadership and Policy Studies Department
530 Jane and David Bailey Education Complex
Knoxville, TN 37996-3452
Email: [redacted]
Phone: [redacted]

From: Varnick, Natasha Lindley [redacted]
Sent: Saturday, February 11, 2023 5:52 PM
To: Morrow, Jennifer Ann [redacted]
Subject: Sense of belonging scale

Dr. Morrow,

I am a psychology lecturer at the University of Tennessee at Martin, and I am working on my dissertation on mentoring, psychosocial development, and sense of belonging in undergraduate students. I am trying to find the most recent version of the Sense of Belonging scale that was originally mentioned in the 2002 article of which you were a co-author. I could not find contact information for the first author, Dr. Hoffmann, but I was able to easily find your contact information since we are both in the UT system.

If you happen to have access to the most recent version of this scale and to any reliability and validity information about the scale, I would greatly appreciate it. I will be happy to share the results of my study with you and any other authors of the

scale. Thank you so much for your help with this.

Sincerely,
Natasha Varnick
Psychology Lecturer
UTM Regional Centers
[redacted]

SENSE OF BELON...ED.pdf

Hoffman_et_al_ 2002-2003.pdf

APPENDIX I: SENSE OF BELONGING SCALE

SENSE OF BELONGING SCALE

SENSE OF BELONGING SCALE – REVISED

Hoffman, M.B., Richmond, J.R., Morrow, J.A., & Salomone, K. (2002-2003). Investigating "sense of belonging" in First-Year college students. *Journal of College Student Retention*, *4*(3), 227-256.

Revised Scale has 4 factors, original scale was 5 factors (Perceived faculty support was 2 factors)

Individual factors were created by adding their respective items and calculating their mean. There are no weights

No questions are reversed scored

Completely Untrue	**Mostly Untrue**	**Equally True and Untrue**	**Mostly True**	**Completely True**
1	**2**	**3**	**4**	**5**

Perceived Peer Support (8 items)

1. I have met with classmates outside of class to study for an exam
2. If I miss class, I know students who I could get notes from
3. I discuss events which happened outside of class with my classmates
4. I have discussed personal matters with students who I met in class
5. I could contact another student from class if I had a question
6. Other students are helpful in reminding me when assignments are due or when tests are approaching
7. I have developed personal relationships with other students in class
8. I invite people I know from class to do things socially

Perceived Classroom Comfort (4 items)

9. I feel comfortable contributing to class discussions
10. I feel comfortable asking a question in class
11. I feel comfortable volunteering ideas or opinions in class
12. Speaking in class is easy because I feel comfortable

SENSE OF BELONGING SCALE

Perceived Isolation (4 items)

13. It is difficult to meet other students in class
14. No one in my classes knows anything personal about me
15. I rarely talk to other students in my class
16. I know very few people in my class

Perceived Faculty Support (10 items)

17. I feel comfortable talking about a problem with faculty
18. I feel comfortable asking a teacher for help if I do not understand course-related material
19. I feel that a faculty member would be sensitive to my difficulties if I shared them
20. I feel comfortable socializing with a faculty member outside of class
21. I feel that a faculty member would be sympathetic if I was upset
22. I feel that a faculty member would take the time to talk to me if I needed help
23. If I had a reason, I would feel comfortable seeking help from a faculty member outside of class time (office hours etc.)
24. I feel comfortable seeking help from a teacher before or after class
25. I feel that a faculty member really tried to understand my problem when I talked about it
26. I feel comfortable asking a teacher for help with a personal problem