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# We Are Family: Exploring Sense of Community for College Students With and Without Hidden Disabilities

Pamina A. Abkowitz

St. John Fisher College, paabkowitz@gmail.com

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# We Are Family: Exploring Sense of Community for College Students With and Without Hidden Disabilities

## **Abstract**

The purpose of this study was to explore the four factors of sense of community and to establish if there is a difference in the sense of community for students with and without hidden disabilities. A quantitative survey was conducted in a cross-sectional format, measuring responses during the spring semester of the academic year at a small, private, liberal arts college in Western New York State with approximately 2,600 undergraduate students. The data revealed that, overall, students experienced all four factors of sense of community: needs, membership, influence, and connection. The results indicate that in the areas of reinforcement of needs, membership, and overall sense of community, students who did not have hidden disabilities experienced a higher sense of community than students who identified themselves as having a hidden disability. In the areas of influence and connection, there was no statistically significant difference between those students with hidden disabilities and their nondisabled peers. Consideration for future research would be to conduct this study at other colleges and universities across the country to get a greater sample of students, consider research-based strategies to provide supports through universal design, and, develop a way to collect data on sense of community for new students throughout the first year in a program of study. By tracking students who are new to the campus, staff could determine if further supports are needed for groups of students. By establishing a connection with students who may be struggling, colleges can increase the chances that students will begin to feel their needs are being met.

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Whitney Rapp

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By

Pamina A. Abkowitz

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Supervised by

Dr. Susan M. Schultz

Committee Member

Dr. Whitney Rapp

Ralph C. Wilson, Jr. School of Education

St. John Fisher College

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## **Dedication**

This dissertation would not have been possible without the support of my mother, Rollie Abkowitz. She has been a lifelong educator and learner, and she taught me from an early age to keep looking forward and persist. I would also like to thank my brother, David, for his support on this journey, asking clarifying questions and providing insight. Melanie, my sister-in-law, Yonah and Talya, my nephew and niece, who commiserated when the tasks seemed daunting, and they were always available to provide a good laugh.

I would like to recognize my dissertation chair, Susan Schultz. You have been a wonderful friend and mentor. I appreciate all you have done and thank you for all the opportunities you provided for me on this journey. My committee member, Whitney Rapp, I appreciate all the insight you brought to the table. You helped me to find a meaningful lens through which to examine this problem. I hope to be able to collaborate with you both in the future.

To the members of my Team Quest: Diedre, Craig, and Jona, you have all taught me more than I ever could have imagined. Thank you so much for pushing me along when I needed it and being the wonderful people you are. You have left your handprints on my heart. To the members of Cohort 10, I will never forget this journey that we went on together and am grateful to have made friends and colleagues for life. I will miss our weekend meetings, and each of you have made a lasting impression, and I will be forever impacted by everyone in our cohort.

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Finally, this dissertation is dedicated to my father, Dr. Martin Abkowitz. He had a love of learning, thinking, and science. We lost you too soon, but I could hear your voice in my head as I pursued this dream, telling me to keep moving forward. I hope having another Dr. Abkowitz in the family would make you proud.

### **Biographical Sketch**

Pamina A. Abkowitz is currently an adjunct faculty member and graduate assistant at St. John Fisher College. Ms. Abkowitz attended Kent State University from 1986 to 1991, and graduated with a Bachelor of Arts degree in 1991. She attended Nazareth College from 1993 to 1995 and graduated with a Master of Science in Education degree in 1995. She attended St. John Fisher College from 2002-2003 and graduated with a Master of Science in Educational Administration in 2003. She returned to St. John Fisher College in the summer of 2015 and began doctoral studies in the Ed.D. Program in Executive Leadership. Ms. Abkowitz pursued her research in the sense of community for college students with and without hidden disabilities under the direction of Dr. Susan Schultz and Dr. Whitney Rapp and received the Ed.D. degree in 2017.

## **Abstract**

The purpose of this study was to explore the four factors of sense of community and to establish if there is a difference in the sense of community for students with and without hidden disabilities. A quantitative survey was conducted in a cross-sectional format, measuring responses during the spring semester of the academic year at a small, private, liberal arts college in Western New York State with approximately 2,600 undergraduate students. The data revealed that, overall, students experienced all four factors of sense of community: needs, membership, influence, and connection. The results indicate that in the areas of reinforcement of needs, membership, and overall sense of community, students who did not have hidden disabilities experienced a higher sense of community than students who identified themselves as having a hidden disability. In the areas of influence and connection, there was no statistically significant difference between those students with hidden disabilities and their nondisabled peers. Consideration for future research would be to conduct this study at other colleges and universities across the country to get a greater sample of students, consider research-based strategies to provide supports through universal design, and, develop a way to collect data on sense of community for new students throughout the first year in a program of study. By tracking students who are new to the campus, staff could determine if further supports are needed for groups of students. By establishing a connection with students who may be struggling, colleges can increase the chances that students will begin to feel their needs are being met.

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## **Chapter 1: Introduction**

In today's society, a 4-year college education is viewed as critical to facilitate career and financial success in the world of the 21st century (Albertini, Kelly, & Matchett, 2012). However, DaDeppo (2009) claimed that only 57% of freshmen who started college in 2002 at 4-year institutions completed a degree within a 6-year period. Due to these reported rates of completion, there have been studies regarding college retention and degree attainment (Flynn, 2014). One of the factors identified in the literature as a positive influence on retention for first-year college students is successful integration (Tinto, 1975). Studies have linked integration to a sense of community (McMillan & Chavis, 1986). McMillan and Chavis (1986) theorized that sense of community had four key elements: membership, influence, integration and fulfillment of needs, and shared emotional connection. A sense of community is critical to all students, including those students with hidden disabilities (DaDeppo, 2009).

Schools are complex environments where both cognitive and social functioning are developed (Rovai, Wighting, & Lucking, 2004). At the college level, learning takes place in both the classroom and in the social school environment. Students develop identities in multiple environments on a college campus, resulting in a sense of community and a role within that community (Rovai et al., 2004). Sense of community has been measured quantitatively through the Sense of Community Index, Version 2 (SCI-2), which measures all four attributes of sense of community for individuals within a given community (Chavis, Lee, & Acosta, 2008).

Colleges have seen an increase in enrollment of students with disabilities (Cortiella & Horowitz, 2014). The increase in this population can be potentially linked to the Individuals with Disabilities Education Act (IDEA) reauthorization in 2004. IDEA defines the purpose of special education as being in place to ultimately prepare students with disabilities for continuing education, employment, and eventually, independent living when they graduate (Leake, 2015).

### **Problem Statement**

Studies have suggested that the number of students with disabilities attending college has increased (Cortiella & Horowitz, 2014; Herbert et al., 2014; Leake, 2015). However, even with this increase, the number of students with disabilities who complete a college degree program is lower proportionally in comparison to their non-disabled peers (Herbert et al., 2014). One factor that has been explored in the literature that has been positively linked to persistence and completion of a college degree is integration (Tinto, 1975, 1993).

This research focuses on students who have disabilities that are not visible. This includes students with specific learning disabilities in reading, writing, math, or spelling, and attention deficit-hyperactivity disorder (ADHD) (Cory, White, & Stuckey, 2010; Embry, Parker, McGuire, & Scott, 2005). Terms that have been used in the literature include *invisible disabilities* (Cawthon & Cole, 2010; Cory et al., 2010; Embry et al., 2005) or *hidden disabilities* (Dukes & Shaw, 2004; Leake, 2015; Murray, Flannery, & Wren, 2008). These terms are referring to the same population of students who have disabilities that are not immediately apparent to a person unfamiliar with the student.

## **Theoretical Rationale**

Humans are social creatures. We form communities for companionship and survival. Being a part of a community helps individuals identify values and a sense of belonging as well as being in community for safety and survival. For years, researchers have been attempting to define what it means to have a sense of community. Early researchers asserted that a sense of community is the basis for a sense of self-identity (Sarason, 1974). A sense of community can impact an individual in a multitude of ways. If a person has a strong sense of community, he or she may be more willing to persist at a difficult task, take risks for the benefit of the community, and be a contributing participant in the growth and well-being of other members of the community (McMillan & Chavis, 1986).

The most widely cited theory of psychological sense of community stems from the research by McMillan and Chavis (1986). They provided a simple definition of sense of community: “sense of community is a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members’ needs will be met through their commitment to be together” (McMillan & Chavis, 1986, p. 9). The definition that they proposed has four key elements. The first element is membership, in which an individual has a feeling of belonging. The second element is influence, in which individuals have a sense of importance or mattering to the group, and the group, in turn, matters to the individual members. The third element is integration and fulfillment of needs. This element provides a feeling to members that their needs will be met by membership in the group. Finally, the fourth element is shared

emotional connection, which includes a sense of history and shared experiences that bond individuals to one another within the group (McMillan & Chavis, 1986).

The concept of psychological sense of community was introduced by Seymour Sarason in 1974. He proposed that identity within a community could be viewed as a major component of defining one's self. While many studies were conducted, they were mostly described as being unclear and without a theoretical foundation (Pretty, 1990). Between 1974 and 1986, studies were conducted and more empirical data emerged around the concept of the sense of community. The work of McMillan and Chavis (1986) emerged as an influential, working definition of the theory of sense of community.

Tinto (1975, 1993) proposed that the experiences a student has in college regarding social and academic integration can directly impact a student's commitment to the institution and retention in the program. Academic integration is defined as the extent a student regards interpersonal relationships with faculty and peers, and that those relationships promote both intellectual growth and development (Tinto, 1975). Social integration is defined as the bi-directional interaction between the student and the campus system, which includes peers, faculty, staff, and extracurricular activities (Tinto, 1975). When a student has the perception that the campus community, as a whole, cares about him or her on a personal level, he or she can be described as having a high level of social integration (DaDeppo, 2009). The greater the individual student's academic and social integration, the more likely he or she is to persist (DaDeppo, 2009).

Integration is also one of the elements of psychological sense of community (McMillan & Chavis, 1986). The theoretical framework for sense of community was developed by McMillan and Chavis (1986). This sense of belonging, mattering and

having one's needs met through membership in a group is important to all people, including those with disabilities (Herbert et al., 2014).

In developing the theoretical framework of sense of community, focus was initially on the idea of describing the forces that create a sense of community and then describing the process that the forces work together to create a sense of community (McMillan & Chavis, 1986). The forces, or elements of sense of community were identified as membership, influence, integration and fulfillment of needs, and shared emotional connection (McMillan & Chavis, 1986). The researchers wanted to look at each of these elements and then determine how they work together to create the experience that is the sense of community (McMillan & Chavis, 1986).

Researchers identified two distinct uses of the term community. First, was the geographical, territorial definition, which can be described as the location in which a person lives (McMillan & Chavis, 1986). Second, was the human relationship definition of community, in which a person can be part of a group that shares interests and skills (McMillan & Chavis, 1986). A focus on the human relationship definition of community became the basis for the four elements of McMillan and Chavis's (1986) sense of community. It was stated by the authors that the framework with the four elements had the potential to be applied in a wide range of community settings. They also asserted that this framework would allow for comparison and contrast between different communities (McMillan & Chavis, 1986).

In the same year that the framework for sense of community was created, the SCI-2 was developed to create a measurement that could be used to determine how a variety of factors influence an individual's sense of community (Chavis, Hogge,

McMillan, & Wandersman, 1986). Due to the difficulty in pinning down a working definition of sense of community, the authors used a technique known as Brunswik's theory of probabilistic functionalism (Chavis et al., 1986). According to this theory, a phenomenon, such as sense of community, is not directly observable and can therefore only be inferred by people who can review a given set of variables that represent the phenomenon (Chavis et al., 1986). In this study, 1,213 door-to-door interviews were conducted. Of those, 100 were selected at random to be analyzed by judges. The study had two hypotheses; first, there would be a high degree of consensus in the judges' perception of sense of community. The second hypothesis was that common estimates of sense of community can be predicted by items that represent the four elements of sense of community (Chavis et al., 1986). In the Chavis et al. study, the agreement resulted in a coefficient alpha of .97, which indicated a very high degree of consensus. The authors reported that this means that there is a common core in the sense of community, even among diverse populations of people (Chavis et al., 1986). However, it should be noted that the authors also indicated that the meaning of community among different groups needs continued research because differences in the definition of community may exist in different communities (Chavis et al., 1986).

Since 1986, the theory of sense of community has been researched and discussed as a basic human experience. Researchers continue to cite the McMillan and Chavis (1986) definition of sense of community, but they have used a variety of measures to address the four elements of sense of community (Chipuer & Pretty, 1999).

Other researchers have kept the original four elements of sense of community, but while evaluating the theory in specific environments, such as neighborhoods, universities,

and schools, the measure that was developed was adapted in each study to meet the needs of the specific environment (Berger, 1997; Chavis et al., 1986; Chipuer & Pretty, 1999; Grover, Limber & Boberiene, 2015). One such study that investigated the sense of community was conducted in a college setting (Lounsbury & DeNeui, 1996). In this study, Lounsbury and DeNeui investigated whether the size of an institution affected the sense of community. They further investigated whether sense of community was impacted by one or both of the following variables that relate to students' daily life on campus: living on campus and fraternity or sorority membership. The study revealed that, as the authors hypothesized, the size of the institution was inversely related to the sense of community indicated by the students. The findings for the relationship of sense of community to living on campus was similar to other studies in that students who lived on campus were found to have a higher sense of community than those who lived off campus (Lounsbury & DeNeui, 1996). The reported findings of sense of community, which was investigated with fraternity and sorority membership, was greater than for those who were not affiliated with Greek organizations. The researchers reported that participants in these types of organizations, which foster membership and cohesion, reported a higher level of sense of community (Lounsbury & DeNeui, 1996).

### **Statement of Purpose**

The purpose of this study was to establish the potential influence that sense of community has on the college campus and if there is a difference for students with and without hidden disabilities. Due to the nature of a number of factors related to identification of students with disabilities on college campuses, this particular population cannot be visibly identified. The triangulation of sense of community,

social integration, and students with hidden disabilities can uncover whether this particular population feels a sense of community and social integration within a particular setting that promotes it, compared to nondisabled peers. The numbers of students with disabilities who are attending college has increased over the past few decades, while graduation rates of their non-disabled peers have not increased at the same rate, proportionally (Cortiella & Horowitz, 2014). Completion rates for students with learning disabilities at 4-year colleges is 34% compared to 51% completion rate for non-disabled peers (Cortiella & Horowitz, 2014).

This study contributes to the literature related to the role that sense of community and social integration have on students with and without hidden disabilities. The data set will provide quantifiable information to link sense of community and social integration to students with and without hidden disabilities

### **Research Questions**

This study had two guiding questions:

1. Which of the four factors of sense of community do undergraduate students on a small, liberal arts college campus experience?
2. Is there a difference in the sense of community for undergraduate students with and without hidden disabilities?

### **Potential Significance of the Study**

Researchers have stated that the numbers of students successfully graduating from college has remained stagnant (Flynn, 2014; Leake & Stodden, 2014). In order to persist, students need to find a college or university setting where they feel welcomed and integrated (Tinto, 1993). For college students with disabilities, the rates of completion are

low (DaDeppo, 2009). Students with hidden disabilities have different experiences with peers and faculty than peers with visible disabilities (McCall, 2015). Students who access disability services often have greater success and persistence than those students who do not (Herbert et al., 2014). The factors that lead to integration, which can impact persistence, are the focus of this study. Integration has been shown to have a positive impact on retention and intent to persist (DaDeppo, 2009).

### **Definitions of Terms**

*Academic Integration* – the extent to which a student regards interpersonal relationships with faculty and peers, and that those relationships promote both intellectual growth and development (Tinto, 1975, 1993).

*Hidden Disabilities* – lack of ability that cannot be seen, such as learning disabilities and ADHD (DaDeppo, 2009; McCall, 2015).

*Social Integration* – The bidirectional interaction between the student and the campus system, which includes peers, faculty, staff, and extracurricular activities (Tinto, 1975).

## **Chapter Summary**

Chapter 1 provided background information regarding both the theory of sense of community, developed by McMillan and Chavis (1986), as well as the theory of social integration (Tinto, 1975). The intent of this study is to add to the existing literature on college students' experiences of sense of community, in comparison to their nondisabled peers, by exploring those experiences on a college campus that enrolls students with hidden disabilities. Chapter 2 explores the current literature regarding students with disabilities, sense of community, and social integration. Chapter 3 explains the methodology chosen for this study. Chapter 4 explains the results of this study, and Chapter 5 provides an analysis of findings and suggestions for future research.

## **Chapter 2: Review of the Literature**

### **Introduction**

This chapter provides a review of the empirical studies regarding sense of community, students with hidden disabilities, and factors that may influence integration. A link between integration and sense of community is explored. In addition, this chapter describes the methodologies common to the studies of students with disabilities, persistence, and sense of community. Gaps in the literature are identified and a rationale for the current study is discussed.

### **Background**

A college education is now viewed as critical to success in the world of the 21<sup>st</sup> century (Albertini et al., 2012). However, Leake & Stodden (2014) claimed that only 57% of freshmen who started college in 2002 at 4-year institutions completed their degree within a 6-year period. Due to these reported rates of completion, there have been numerous studies regarding college retention, persistence, and degree attainment (Flynn, 2014). One of the factors identified in the literature as a positive influence on retention is successful integration (Tinto, 1975).

The process of integration into a college environment can be described as a transition “between membership in past communities and membership in the new communities of college” (Tinto, 1993, p. 125). Campuses are made up of multiple communities that can provide opportunities for students to become integrated, and the experiences a student has in college regarding social and academic integration can

directly impact a student's commitment to the institution and to persist (Tinto, 1975). Academic integration is defined as the extent a student regards interpersonal relationships with faculty and peers, and that those relationships promote both intellectual growth and development (Tinto, 1975). Social integration is defined as the bi-directional interaction between the student and the campus system, which includes peers, faculty, staff, and extracurricular activities (Tinto, 1975). When a student has the perception that the campus community, as a whole, cares about him or her on a personal level, he or she can be described as having a high level of social integration (DaDeppo, 2009). The greater the individual student's academic and social integration, the more likely he or she is to persist (DaDeppo, 2009).

Studies have linked persistence to integration, and integration has been linked to a sense of community (McMillan & Chavis, 1986). McMillan and Chavis (1986) theorized that sense of community has four key elements: membership, influence, integration and fulfillment of needs, and shared emotional connection. The relationship that students with disabilities have with the college can impact the successful completion rate on campuses across the country (DaDeppo, 2009).

The numbers of students with disabilities enrolling in college has increased dramatically over the past three decades (DaDeppo, 2009). The Individuals with Disabilities Education Act (IDEA) of 1990, The Americans with Disabilities Act (ADA), and Section 504 of the Rehabilitation Act of 1973 have each had an impact on the increase of students with disabilities enrolling in postsecondary institutions (DaDeppo, 2009). The IDEA requires that the Committee on Special Education (CSE), in conjunction with the student, create transition plans to prepare the student for college or a

career. The ADA and Section 504 of the Rehabilitation Act of 1973 require institutions who receive any federal funding to provide accommodations so students can perform and meet the same academic obligations as their non-disabled peers (DaDeppo, 2009).

Although these acts promote college attendance, disability support services can vary across colleges and universities, which is in part due to the size of staff and breadth and depth of the services offered. Services can differ among colleges and universities based upon the contention that there is not a similar vocabulary common to all colleges and universities (Herbert et al., 2014). There is inconsistent terminology for disabilities across studies, and different studies use a variety of descriptors including functional abilities, diagnostic terminology, and a combination of both (Herbert et al., 2014).

It is difficult for colleges and universities to collect data on the effectiveness of their disability support services. A factor that impacts this is that federal law prohibits the collection of data on disability status as a part of college admissions' procedures (Rehabilitation Act, 1973). In addition, the Family Education Rights and Privacy Act (1990) prohibits colleges from sharing information that can result in individual identification of students so they are unable to provide students with information about other students who may also have a disability.

Studies regarding students with disabilities pursuing higher education have reported a range of students who have been enrolling in higher education programs. One study indicated that approximately 10% of students on college campuses have disabilities (Herbert et al., 2014). More recently, researchers have reported that the number of students with disabilities who attend 4-year colleges may be as high as 26% (Newman, Wagner, Cameto, & Knokey, 2009). This percentage includes college students with

disabilities who openly disclosed their disability and those who choose not to disclose. Colleges have a vested interest to investigate why many of these students may not persist to graduation (Herbert et al., 2014).

### **Persistence**

Researchers have been exploring the concept of student persistence and drop out for several decades, so the topic of persistence in college is not a new concept (Tinto, 2012). Persistence has been viewed by researchers, such as Tinto, Love, and Russo (1994), as being a part of student interactions with both the academic and social systems of a college or university. The academic system places academic and intellectual demands on the student (Albertini et al., 2012). The social system provides opportunity for the student to participate in extracurricular activities outside the classroom, or in some cases, the campus (Albertini et al., 2012). These interactions are important to the individual student's integration into campus life and student satisfaction and intent to persist (Albertini et al., 2012).

Although studies have been conducted regarding the transition of students with disabilities into postsecondary education programs, there are still questions regarding the factors that influence risk and resilience for persistence in this population of students in higher education (Lee, Rojewski, Gregg, & Jeong, 2015). The persistence of students with disabilities in postsecondary programs who wish to pursue careers that cannot be obtained with a high school education is critical in an increasingly complex world (Lee et al., 2015). There are both external and internal risk and resilience factors. One of the most critical external factors for success is the sustained emotional support from a trusted

adult. Important internal factors include knowledge of one's disability, accommodation strategies, self-determination, and self-advocacy skills (Lee et al., 2015).

Five empirical studies were reviewed with the overarching theme of persistence. Factors that can influence persistence include: predictors of retention (Fike & Fike, 2008; Lee et al., 2015), student engagement (Flynn, 2014), and integration (Berger, 1997; DaDeppo, 2009). DaDeppo (2009) found that social integration may be a greater factor in persistence than academic integration. The implications for students with disabilities who may experience difficulty with social interactions were also explored (Daly-Cano, Vaccaro, & Newman, 2015).

**Predictors of retention.** Student retention is important for a number of reasons, from both the student perspective as well as the institution perspective (Fike & Fike, 2008). For the institution, retention is critical for the financial stability of the institution and the viability of the academic programs (Fike & Fike, 2008). One of the measures used by policy makers is graduation and transfer rates. Additionally, colleges want students to have a positive college experience to graduate and join the workforce (Fike & Fike, 2008).

A retrospective quantitative study by Fike and Fike (2008) examined predictors of student retention for first-time college students in a community college. The sample included 4 years of data ( $N = 9,200$ ) of students who first enrolled at the college in the fall semester from the years 2001 through 2004. Fike and Fike (2008) defined student retention as, "first-year fall semester to first-year spring semester retention and first-year fall semester to second-year fall semester retention" (p. 3). Year-to-year retention fluctuated from a low of 65.7% to a high of 70.7% (Fike & Fike, 2008). Approximately

one-third of the first-time college students who enrolled in the fall did not enroll at the same institution in the spring. More than half of the first-time college students who enrolled in the fall did not enroll the following fall semester (Fike & Fike, 2008).

There were seven identified factors that positively contributed to student retention (Fike & Fike, 2008). The strongest predictor of retention was passing a developmental reading course, if that level of support was determined to be needed. College-level reading skills are critical to success for students to read and understand course textbooks and materials (Fike & Fike, 2008). The second factor, passing a developmental math course, was also suggested as an indicator of retention for students who require that level of support. The findings indicate that passing a developmental writing course was not associated with retention for this particular study. Fike and Fike (2008) indicated this finding was not in agreement with other studies that did indicate that developmental writing courses were positively associated with retention. Taking Internet courses was the third predictor of student retention found in this study. Seeking and receiving student support services was the fourth predictor of retention because student services programs encouraged student retention by meetings with advisors, grade checks, and completion of long-term plans of study (Fike & Fike, 2008). The level of parental education was the fifth predictor found to be positively correlated to retention. Fike and Fike argued that when parents have college experiences, they can provide guidance and support to the student to be successful in college. Students with learning disabilities who attend college and have parents who attended college have greater rates of retention. The parents can provide strategies for self-advocacy and time management that can lead to greater student success (Fike & Fike, 2008).

The sixth factor Fike and Fike (2008) found was that the number of hours that a student enrolls for the first semester and the number of hours dropped in the fall semester may be positively correlated to retention. It is not known why there is a positive correlation between the number of hours enrolled and dropped by individual students, but Fike and Fike suggested more research in this area. Finally, in findings consistent with prior research, the seventh factor of receiving financial aid was a predictor of student retention in this study. Fike and Fike (2008) indicated that students reported that financial difficulty was a key variable in whether a student persists.

The Lee et al. (2015) quantitative study examined data from the Longitudinal Study of 2002 database. The study investigated the influence of a selected group of risk factors for students with and without specific learning disabilities or emotional/behavioral disabilities. The sample size was 10,760 individuals. This included 9,990 students without disabilities (92.84%) and 770 students with either a specific learning disability or emotional/behavioral disorder (7.16%). The factors investigated included the categories of individual factors, family factors, school and peer factors, and community factors, in addition to control variables, including race and the native language of English. Data analysis was conducted using a logistic regression model with a “forced entry approach,” which was used to determine the probability of an event using associated covariates (Lee et al., 2015, p. 81).

The results of the Lee et al. (2015) study indicate that students with higher grade point averages (GPA) and higher socioeconomic status were more likely to persist in college than peers who had a lower socioeconomic status and GPA. In addition, those students whose friends had plans to attend college had a positive effect on persistence

(Lee et al., 2015). The findings support previous research regarding students with disabilities. Students with disabilities persisted at a lower rate than those without disabilities. Therefore, disability status was found to be an important, indirect risk factor regarding persistence (Lee et al., 2015). However, the study did indicate that there was no significant difference in persistence between students with specific learning disabilities and those who had emotional/behavioral disabilities. That factor was not included in the logistical regression model (Lee et al., 2015). Socioeconomic status was found to be a significant predictor of persistence. This finding was similar to past studies. The authors noted that while all family risk factors were associated with persistence of students without disabilities, only socioeconomic status was associated with persistence for students with disabilities (Lee et al., 2015). One other factor for persistence was the significant association for students with disabilities, which was the students' friends planning to attend college. Interestingly, when comparing most friends or all friends of students without disabilities who planned to attend college, there was a greater impact on persistence for students without disabilities. However, when even a few friends of students with disabilities planned to attend college, this had a greater impact on persistence for students with disabilities (Lee et al., 2015).

**Student engagement.** Flynn (2014) conducted a study using nationally representative data from the National Center for Education Statistics (NCES). Flynn used descriptive and logistical regression models to evaluate the effects of academic and social integration behaviors on both persistence and attainment of a degree using individual student-level and institutional-level covariates. The study found that later engagement, rather than first-year engagement, had a positive effect on persistence to degree

completion (Flynn, 2014). Many colleges have first-year programs to integrate students both socially and academically. However, this study indicates that there were positive effects to remaining in the same institution from beginning to degree completion. Student engagement, both academic and social, throughout the years spent in college was found to be important, and there was a positive correlation between later engagement and degree completion (Flynn, 2014).

Academic engagement behaviors include meeting informally with faculty, talking with faculty outside of class, meeting with an advisor regularly, and participation in study groups. Flynn (2014) described social engaging behaviors as attending arts and drama performances, participating in clubs, and participating in sports. The Flynn study partially supports the theoretical statement made by Tinto (2012) in which he stated, “the more students are academically and socially engaged, the more likely they are to persist and graduate” (p. 70).

**Integration.** Tinto (1975, 1993) proposed that the experiences a student has in college regarding social and academic integration can directly impact a student’s commitment to the institution and retention. Academic integration is defined as the extent a student regards interpersonal relationships with faculty and peers, and that those relationships promote both intellectual growth and development (Tinto, 1975). Social integration is defined as the bidirectional interaction between the student and the campus system, which includes peers, faculty, staff, and extracurricular activities (Tinto, 1975). When a student has the perception that the campus community, as a whole, cares about him or her on a personal level, he or she can be described as having a high level of social integration (DaDeppo, 2009). There is a reported belief that living on campus provides

more opportunities for students to become engaged with both peers and faculty (Herbert et al., 2014). Some studies have reported that by living on campus, students can become more socially integrated, have greater access to on-campus supports, develop greater independence, and become more involved in the campus community than peers who live off campus (Herbert et al., 2014). The greater the individual student's academic and social integration, the more likely he or she is to persist (DaDeppo, 2009).

Participants for the DaDeppo (2009) study were 97 freshmen and sophomores with learning disabilities who attended a large, 4-year public institution in the southwestern United States. The students with learning disabilities in DaDeppo's (2009) study, identified themselves to the university's disability resource center. Additionally, all but one student also participated in a fee-for-services program on campus, which provided additional supports for students with disabilities. More recent findings support Tinto's findings (1975) that college GPA is more likely a component of academic integration as opposed to a predictor of integration (DaDeppo, 2009).

DaDeppo (2009) used six measures for the study: entrance exam scores, high school GPA, college GPA, a research-designed questionnaire to obtain demographic information, The Freshman Year Survey (FYS), and a composite of three items on the FYS to measure intent to persist. DaDeppo used a nonexperimental design to examine the influence of academic and social integration on the success and intent to persist of college freshmen and sophomores. The data analysis was conducted using independent *t*-tests and chi-square analyses in addition to hierarchical multiple-regression analysis that was used to analyze the research questions (DaDeppo, 2009).

The purpose of the DaDeppo (2009) study was to investigate the influence academic and social integration have on academic success and the intent to persist of college students with learning disabilities. DaDeppo indicated that findings did not support the hypothesis that integration would be helpful in explaining individual academic performance and intent to persist. The influence of integration on GPA was not supported. The relationship between integration and intent to persist was not surprising. The variables for integration consistently predicted intent to persist (DaDeppo, 2009). For example, students with specific learning disabilities may have difficulty explaining needs to faculty or peers. Other students having difficulty with executive functioning skills may find it challenging to organize, plan, and execute assignments to meet course deadlines (DaDeppo, 2009).

Social integration was also positively linked to differences above and beyond both background characteristics and academic achievement as well as above and beyond academic achievement. This finding indicates that social integration may be a more powerful variable in affecting a student's commitment to both an institution as well as the intent to persist than academic integration and success (DaDeppo, 2009).

The importance of researching the process by which individual campus communities impact the process of integration is one that Berger (1997) asserted is lacking. He, therefore, set out to investigate the sources of integration as well as the influences on social integration. Berger chose to investigate residence halls for his study, and he cited previous research that supported the positive effects on student outcomes, including persistence. Berger (1997) stated that there is a need to explore the sense of

community within residence halls as an influence on the development of social integration.

The data collected in the Berger (1997) study was part of a longitudinal study of first-year student persistence at a private university in the Southeast. Three points of data were collected. First, 1,343 students gave permission for the researcher to use the answers to questions from a student information form that was completed at the end of orientation week. Second, students gave permission for the researcher to use the answers to questions from a student information form at the midterm point of the fall semester, collected data from The Early Collegiate Experiences Survey. From that survey, a total of 1,237 surveys were usable. Third, in the spring semester, the Freshman Year Survey was sent to students and a total of 1,061 surveys were returned (Berger, 1997). Data from all three surveys were matched and merged into one data set. The sample that resulted was a population of 718 students who returned data at all three points. A multivariate statistical procedure was used for studies of persistence (Berger, 1997).

One finding of the Berger (1997) study was the significant role that the students' level of family income had on social integration on the campus. Berger concluded that in the type of institution studied, which enrolled generally White, wealthy, high-achieving students, those students would have an easier time integrating into that particular college setting than their peers who did not share these characteristics.

Berger (1997) found that students who have a strong sense of community more likely feel positively about their school campus community and may therefore be more likely to engage with other campus groups, including faculty. On the other hand, he also suggested that students who spent most of their time engaging with peers may have a

detrimental effect on their desire to interact with faculty, which in turn could negatively impact performance (Berger, 1997). The Berger study examined the social integration process through the campus community of a residence hall. Berger (1997) suggested that there is a positive relationship that exists between a residential sense of community and social integration, and given Tinto's (1975) theory, this is not surprising. The Berger (1997) study provides an empirical basis for this connection, which established a positive relationship between sense of community and integration into a larger campus community (Berger, 1997).

### **Sense of Community**

Throughout the history of the research of sense of community, researchers have taken a common approach to measuring sense of community, and they modified it to make it appropriate to an individual community (Chipuer & Pretty, 1999; Pretty, 1990). The studies were more tailored to the specific communities being studied, which brought a greater relevance of the findings of individual studies (Pretty, 1990). However, this method makes it a greater challenge to generalize findings and synthesize the literature as a whole body of research. The reason this is important is because while modifications are made to measure the sense of community in one community, other communities may not necessarily have the same characteristics in them, making comparisons difficult (McMillan & Chavis, 1986).

Five studies were examined focusing on sense of community. The focus of the empirical research was college campuses to examine the unique attributes of a college campus community. The first two studies investigated collegiate sense of community (Lounsbury & DeNeui, 1996; Pretty, 1990). The second two studies investigated a sense

of belonging on college campuses (Jones, Brown, Keys, & Salzer, 2015; Krafona, 2014). The final study investigated a questionnaire that was used to determine the sense of classroom community as well as sense of community, collectively, on a school campus (Rovai et al., 2004).

A study conducted by Lounsbury and DeNeui (1996), examined how college size related to sense of community. Lounsbury and DeNeui stated that they believed that students in smaller colleges would more likely feel a stronger sense of community than students at a larger institution. Lounsbury and DeNeui (1996) developed a scale to measure sense of community for College Campuses. Although sense of community has been studied in a variety of settings, there was no scale created that would be appropriate for a college community. One important note regarding the Lounsbury and DeNeui (1996) study indicated that sense of community has been treated as a variable of community environments or as an effect, outcome, or consequence of the community environment, specifically the territorial, relational, or organizational environment. However, the researchers decided to investigate this topic from a personal perspective. Rather than sense of community representing an outside effect of either the location or the environment, they investigated through the lens of a personality attribute of extroversion.

Lounsbury and DeNeui (1996) examined four questions. First, they wanted to create a reliable measure of college sense of community by using colleges as a community. Second, they wanted to prove the hypothesis that sense of community is inversely related to school size. Third, an assessment of the relationship between sense of community and extroversion, a personality trait, was conducted. Finally, Lounsbury and

DeNeui (1996) wanted to determine shared and unique variances in sense of community among colleges while accounting for school size and extroversion.

Lounsbury and DeNeui's (1996) analysis of the relationship between sense of community and college size drew 774 participants from 23 colleges. The students were taken from one psychology class at each school. The convenience samples were at a range of schools, both small and large, with geographic diversity. The sense of community and extroversion analysis drew 1,121 participants. The distribution was approximately 45% male and 55% female for both samples, and the numbers were divided evenly between freshmen, sophomores, juniors, and seniors. A self-report questionnaire was used that included the College Sense of Community Scale as well as an abbreviated version of the Extroversion Scale. Lounsbury and DeNeui (1996) used a one-way analysis of variance, post hoc, Newman-Keuls analysis, and ANOVA to analyze the data. The Extroversion Scale had a coefficient alpha of .83, which shows overall internal consistency. The coefficient subscales ranged from .53 to .73.

The Lounsbury and DeNeui (1996) study revealed that college size was inversely related to sense of community on campus. This finding is consistent with previous research that students at smaller campuses have a stronger sense of community than those at larger universities. However, the findings did not make clear why this phenomenon existed (Lounsbury & DeNeui, 1996). More research was recommended by the researchers to determine why this inverse relationship exists. Findings also indicated that students who lived on campus had higher sense-of-community scores than students who reported that they lived off campus (Lounsbury & DeNeui, 1996).

The purpose of a study conducted by Pretty (1990) was to empirically investigate whether social climate components could predict sense of community on a university campus. The study investigated 102 undergraduate residents of a university residence hall who were approached at random in the lobby of their residence hall and were asked to complete the SCI-2, as well as complete a University Residence Environment Scale (Pretty, 1990). A multiple regression analysis was conducted and indicated that the sense of community within a university residence setting could be partially predicted from the amount of involvement, academic achievement, and support that is perceived by the students ( $R = .73$ ). The final regression equation for predicting sense of community from the components from the University Residence Environment Scale is psychological sense of community (PSC) =  $2.78 + .53$  (involvement) +  $.23$  (academic achievement) +  $.22$  (support) (Pretty, 1990).

Sense of community can be related to characteristics of climate within a university setting (Pretty, 1990). The relationship between psychosocial climate and sense of community extends beyond personal networks and supports. Students related their sense of community to not only perceptions regarding how individuals should behave but how the whole group of students should be expected to behave (Pretty, 1990).

### **Sense of Belonging**

A healthy learning environment needs to have, among other attributes, a community in which all members feel they belong (Krafona, 2014). A learning community should provide academic, social, and personal support to all students (Tinto, 1997). Learning has social and cognitive aspects that are important in the development of

a student, and it is most effective in an environment in which the classroom has a positive social environment and a strong sense of community (Krafona, 2014).

The participants of the study conducted by Krafona (2014) were undergraduate psychology students ( $n = 216$ ) selected from a population of 301 total students based upon the fact that they had been at the university longer than other classmates. The author used the SCI-2 with 12 questions answered as true/false (Krafona, 2014). The internal consistency of the index was found to be low, with alpha scores ranging from .64 to .69, and with subscale ratings ranging from .16 to .72 (Chipuer & Pretty, 1999).

The purpose of the study was to determine the reliability of the sense of community for a particular group of students at a university in Ghana (Krafona, 2014). The author was investigating whether students felt they belonged to the university and to examine the structure of the theoretical construct of belonging. The forced-choice responses offered on the scale may have had an impact on the view of the concept of belonging given that it is not a narrow concept. Krafona noted that there are no norms for this scale, making comparisons difficult between variables. The author further noted that cultural perspective may have an impact of the sense of belonging and sense of community as the definition between cultures could differ. Krafona (2014) noted that the findings for the study should be viewed in the context of a specific student population within a specific university, and the findings could not be generalized to the college population as a whole. This difficulty with generalizability is a theme in the literature around the topic of sense of community (Krafona, 2014).

A study conducted by Jones et al. (2015) examined the relationship between socioacademic engagement, integration, and sense of belonging among college students

with psychiatric disabilities. Jones et al. (2015) suggest that there is a lot of research on socioacademic engagement and integration among postsecondary students with psychiatric disabilities. The study was conducted to better understand the relationships between clinical variables and aspects of campus and classroom engagement.

Data was collected for the Jones et al. (2015) study through an anonymous survey. The survey was available to participants for 1 year. Analysis was limited to students who reported that he or she experienced a psychotic or affective disorder. Jones et al. (2015) noted that the sample was not representative of the general population. Both existing survey questions and novel questions were used in this survey. The alpha coefficient for sense of campus belonging was .76 (Jones et al., 2015).

Jones et al. (2015) proposed two hypotheses for the study. First, that campus engagement and psychosocial inclusion variables would account for more variance in sense of campus belonging than the symptomological variables. Second, that perceived social exclusion would partially diffuse the relationship between symptom factors and sense of belonging (Jones et al., 2015). Both hypotheses were partially borne out. The psychosocial variables that were not clinical did explain more variance than the symptom factors (Jones et al., 2015).

The idea of promotion of a sense of community campus wide, including providing faculty, staff, and students with more information about psychiatric disabilities, would be beneficial to not only the individuals with psychiatric disabilities but to the entire campus (Jones et al., 2015). The study underscores the importance of the nuances within the concepts of social engagement and campus involvement. The additional impact

psychiatric diagnosis may have on the individual's perception of social and academic inclusion was also highlighted (Jones et al., 2015).

The purpose of the quantitative study conducted by Rovai et al. (2004) was to develop and validate the classroom and school community inventory (CSCI), consisting of a classroom form and a school form. Two instruments that had been previously developed were used to evaluate validity of the CSCI. The first instrument used was the classroom community inventory, developed by Rovai in 2002. This particular instrument produces two subscales: social community and learning community. Cronbach's coefficient  $\alpha$  for the scale overall was 0.93. The reliability coefficients for social community and learning community were 0.92 and 0.87, respectively (Rovai, 2004). The second instrument used to evaluate the validity of the CSCI was the Dean Alienation Scale (Dean, 1961). This scale is used to operationalize alienation, which Dean (1961) described as having feelings of isolation, powerlessness, and not feeling a part of society as a whole (Rovai et al., 2004). The internal consistency reliability was reported as 0.78. Participants ( $N = 341$ ) were obtained from an independent middle school ( $n = 57$ ), an independent high school ( $n = 127$ ), and students from two universities ( $n = 157$ ). The students were from both traditional school communities as well as online learning environments.

The Dean (1961) study was seeking to establish validity and reliability of the CSCI, which consists of both classroom community and school community forms. Construct validity was confirmed through a factor analysis. An oblique rotation was used to obtain a simple structure that could be interpreted easily (Rovai et al., 2004). The reasoning behind using this method was due to the belief that the underlying dimensions

of sense of community are likely to be correlated. A Cronbach's coefficient was used to establish internal consistency for both forms of the scale. Finally, stability was measured using pretest and posttest measures within a 2-week interval between measurements (Rovai et al., 2004).

The results of the Dean (1961) study provided support for the distinction between sense of community in a classroom and sense of community on a school campus as a whole (Rovai et al., 2004). When items were pooled and analyzed as a set using factor analysis, four factors were identified: classroom social community, classroom learning community, school social community, and school learning community. These results demonstrated that students have multiple senses of community within the school environment in correlation with the multiple communities that exist on any given school campus (Rovai et al., 2004).

### **Students with Disabilities**

Eight studies were examined regarding students with disabilities on college campuses. The areas examined for their potential impact on student integration and persistence were: transition services prior to entering college (McCall, 2015), faculty attitudes (Sniatecki, Perry, & Snell, 2015), disability student services (Denhart, 2008; Dowrick, Anderson, Heyer & Acosta, 2005; Herbert et al., 2014), and self-advocacy skills (Albertini et al., 2012; Daly-Cano et al., 2015; Denhart, 2008). These factors, in conjunction with factors related to all students such as academic and social integration, may influence students' persistence to graduation (Dowrick et al., 2005).

**Transition.** In a phenomenological study, McCall (2015) investigated the experiences of four students with disabilities associated with high rates of enrollment at

college. These disabilities include blindness, hearing impairment, learning disability, and ADHD. The four participants took part in a previous survey examining high school preparation and levels of self-determination among college students with disabilities (McCall, 2015). Students were selected by using intensity sampling to identify students who had been successful in college. Data collection began with phenomenological interviewing methods eliciting individual experiences. The students took part in three in-depth interviews each lasting 60-90 minutes. The longitudinal interview approach had several benefits according to McCall (2015). For one, it gave the opportunity to build rapport with the participants and helped to build thick, full descriptions. The participants had multiple opportunities to tell their stories multiple times. Finally, it allowed for triangulation of responses from earlier interviews, and they could be checked against related responses in another interview (McCall, 2015).

Initial interviews were coded to understand the individual elements of each transition story. After transcribing the interviews, McCall (2015) took all four stories and looked for commonality in a chronological format within three themes: formal transition services, informal supports and resources, and college practices.

McCall (2015) reported on the transition services of all four students in the study. One student reported his services focused on self-advocacy and independent living skills. Another student had her services focused on academic skills. The third student had primary services with speech therapy, and the fourth student was a resource-room student working on developing organization and written-expression skills (McCall, 2015). All students reported attending CSE meetings while in high school. None of the students indicated any family training related to their disabilities, however parents did attend CSE

meetings and advocated on behalf of the student, but students reported little to no participation in those experiences (McCall, 2015).

Factors related to informal supports were reported to be important for all four students involved in this study (McCall, 2015). The students were provided with formal and informal opportunities to practice self-advocacy and self-determination skills. Most of the students indicated that they regularly engaged in self-advocacy with faculty and staff. Their teachers responded positively to all self-determination actions taken by the students and, as a result, students could depend upon adults to assist with developing those skills. In addition to developing self-determination skills, students reported that they had great family support and that all families expected them to attend college. Parents were involved in support and services for each student that helped them gain confidence (McCall, 2015).

The participants in the McCall (2015) study experienced a range of transition supports from informal conversations to fully-formulated plans to achieve their goals. The study demonstrated that the student who was clearly on a path to college, in fact, received fewer supports than other students did, by way of preparation for postsecondary life and services (McCall). The issue was raised that for some students who are college bound, they may not get the support they need to be able to self-advocate and be able to describe their needs in order to obtain the help they need to be successful. One finding the author noted was the high level of family support for the students in pursuing a college degree and the expectation that they would be successful in that endeavor (McCall, 2015).

The students in the McCall (2015) study reported feeling supported by the disability services office. Two students had guidance and support from their high school staff about how to access services. Two students had guidance with the support of their parents in obtaining college supports. All participants experienced negotiations with faculty and staff regarding accommodations for classes (McCall, 2015). For some of the students, peer support in getting accommodations resulted in positive accommodations, while for other students, they did not ask for peer support until after experiencing failure and having a professor suggest getting support (McCall, 2015).

**Faculty attitudes.** Faculty knowledge regarding accommodations can be a barrier for students with disabilities (Sniatecki et al., 2015). When faculty do not have adequate knowledge and are not prepared to implement accommodations in their classrooms, students can be negatively impacted. This may be particularly true for students with hidden disabilities (Sniatecki et al., 2015). These disabilities include learning disabilities, mental health disabilities, and ADHD (Sniatecki et al., 2015). According to the authors, faculty may question the legitimacy of accommodations since the disabilities are not immediately visible. In addition, faculty may have expressed concerns about the granting of accommodations since it may compromise the integrity of the curriculum (Sniatecki et al., 2015). This issue of fairness is one that was raised in the study. Faculty had indicated that accommodations may give an unfair advantage to students with disabilities. Research has indicated that when faculty have positive attitudes about students with disabilities receiving accommodations in their classes, the students with disabilities have a greater chance of success (Sniatecki et al., 2015).

A survey was distributed to all full and part-time faculty at a mid-sized public liberal arts university in upstate New York. Of the 604 faculty members, 123 (20.4%) completed the survey (Sniatecki et al., 2015). Data was collected online, through an anonymous survey administered through an online system. Faculty were recruited through email, which was sent along with a follow-up email sent 2 weeks after the first email, and a final reminder email was sent 2 weeks the first email distribution. There were no incentives offered for participation.

The survey instrument was adapted from a survey created at the University of Oregon to collect internal data regarding faculty attitudes toward disabilities and knowledge about services (Sniatecki et al., 2015). Some of the original questions from the survey were used to explore factors in the literature regarding disabilities and disability services. The survey was modified to include attitudes based upon three specific disability types: physical disabilities, learning disabilities, and mental health disabilities, rather than disabilities as a whole (Sniatecki et al., 2015).

Results of the study suggest that in general, faculty at the study institution had a positive attitude about college students with disabilities. The faculty indicated that they believed that students can be both successful and competitive in higher education (Sniatecki et al., 2015). The majority indicated that they believe that students with physical disabilities can be successful in college ( $n = 119, 96.7\%$ ). For students with learning disabilities ( $n = 112, 90.2\%$ ) and mental health disabilities ( $n = 102, 82.9\%$ ) the rates were slightly lower (Sniatecki et al.). An ANOVA was used to analyze faculty responses when disability type was the grouping variable, it was in this analysis that a difference was found in faculty beliefs about the ability of students with disabilities to be

successful based upon disability type. The most positive attitudes were found to be demonstrated toward students with physical disabilities. The second most-positive attitude demonstrated toward students with learning disabilities and the least positive attitudes were demonstrated toward students with mental health disabilities (Sniatecki et al., 2015). When faculty were asked about their attitudes toward providing accommodations for students with disabilities (SWD), results showed that some faculty ( $n = 6$ , 4.9%) held negative attitudes. This group of faculty members indicated that the granting of accommodations compromises academic integrity and can give an unfair advantage over other students in the class (Sniatecki et al., 2015). Although the number is small, the authors noted that it is still important to recognize that the belief existed among faculty and needed to be addressed to improve experiences of SWDs (Sniatecki et al., 2015).

Faculty indicated that they had a lack of knowledge regarding policies and procedures for SWDs (11.4% not familiar; 27.6% unsure) (Sniatecki et al., 2015). Even with this reported lack of knowledge, the faculty did report strong beliefs that they were sensitive to the needs of SWDs and knew where to find support to successfully work with this population. However, Sniatecki et al. (2015) did indicate concern that the lack of faculty knowledge around disability law and regulation, as well as services, requires professional development.

**Disability support services.** Some students with disabilities do not request disability services support due to the stigma that is associated with having a disability (Herbert et al., 2014). The researchers found a variety of responses from faculty when presenting documentation for accommodations. Students indicated a reluctance to

disclose disability due to the attitudes of some of the faculty and staff he or she interacts with and a less than positive response to the request for accommodations (Herbert et al., 2014).

The study conducted by Dowrick et al. (2005) used a participatory action-research approach in investigating postsecondary education experiences across the USA for adults with disabilities. Focus groups were created at 10 sites to collect a range of disabilities and ethnic backgrounds for this investigation (Dowrick et al., 2005). Purposeful sampling was done at each site in order to have a cross section of participants. Questions were developed with the first focus group after an initial group of questions were created to use at each site. Questions were modified at each site by coordinators and participants to address unique site factors. This allowed for participants to have greater ownership of the study (Dowrick et al., 2005). Focus groups lasted 1-2 hours each, and they were held in private, comfortable locations. Groups were videotaped or audiotaped and sent to the National Center for the Study of Postsecondary Educational Supports along with facilitator notes for analysis. Themes were developed for each group and then coded based upon the discussions and purpose of the study. Each site then was given the list for corroboration and comments. The final list of themes was organized into four categories: postsecondary supports, transition to employment supports, natural supports and attitudes, and awareness (Dowrick et al., 2005).

Participants commented on the importance of disability services and the need for coordination across support services (Dowrick et al., 2005). The discussions revealed that the personal connections the students made with disability services providers was important for their success and integration. Individual counselors or support staff were

mentioned as the students were offered supports above and beyond what is typically expected. However, many students reported that the disability services office was often understaffed and could only assist students with the most urgent needs (Dowrick et al., 2005). The students indicated that more information about the services offered would be valuable to them as they were not always aware of services offered. Students also reported the importance of the disability services office as a connection to the college administration. The students reported that many barriers could be addressed through an improved coordination between the two offices (Dowrick et al., 2005).

Two important supports identified by the students were assistive technology and faculty mentors (Dowrick et al., 2005). The students indicated that the assistive technology could, in some cases, remove learning barriers for the students. For others, faculty mentoring was a vital part of being in a college program and was critical for support (Dowrick et al., 2005). Students indicated that some faculty served as support to obtain employment. Internships and job training were critical experiences they needed to have to prepare for jobs. There was a general sense reported by the students that postsecondary education, in general, gave them self-confidence and marketability that they needed to seek employment; however, some students commented that they were concerned about the perception of others that individuals with disabilities are unemployable (Dowrick et al., 2005).

Many participants discussed the importance of family and peer support in their pursuit of a college education (Dowrick et al., 2005). Family was indicated as playing a significant role in support and persistence. This finding was consistent with other studies reported in this literature review. However, some did note that sometimes family could be

overprotective and discourage pursuit of college and career goals (Dowrick et al., 2005). Peers were also noted for their significant support and other students with disabilities could serve as role models and a resource for information. However, peers without disabilities were often seen as being critical supports for these students as they wished to be included like everyone else (Dowrick et al., 2005).

The students in the Dowrick et al. (2005) study expressed concern that disclosure could be stigmatizing with some students reporting that they found faculty who were either unwilling or unable to provide accommodations to meet their needs. Nondisabled peers and faculty at times questioned the need and efficacy of accommodations as well as expressing that the student may be getting an unfair advantage over students who did not disclose as well as having an unfair advantage over nondisabled peers. Disclosure was easier when accompanied by a letter for the disability services office explaining the disability and the need for accommodations; however, some students still felt stigmatized by the idea that disability means inability (Dowrick et al., 2005).

In a study conducted by Herbert et al. (2014) investigating persistence, the researchers identified 546 college students who sought disability services from the years 1996 through 2006. A logistic regression analysis was used to estimate three models. The first model examined race/ethnicity, gender, housing status, financial aid, and transfer status. In the second model, disability type was added, and for the third model, GPA was added (Herbert et al., 2014). The dependent variable identified was completion, indicating in one of two ways, completion and noncompletion (Herbert et al., 2014). Explanatory variable identification was guided by previous research and measured individual background characteristics and college experiences. Background

characteristics included gender, race, and type of disability (Herbert et al., 2014). College experiences included housing, campus location, financial aid, and GPA. The researchers used a logistic regression analysis to determine the factors that contributed to degree completion among students with disabilities (Herbert et al., 2014).

The role of self-determination was discussed as an important variable to student success in higher education. Many students with disabilities enter the college setting without knowing how to describe their disability or needs within a classroom setting. According to Herbert et al. (2014), students who have not yet developed self-advocacy skills often do not perform successfully in postsecondary education settings, and they are at greater risk of dropping out. Herbert et al. (2014) report that results indicated that students who began at one college or university setting and remained there throughout their college career, were more likely to complete a degree program than students who transferred. This finding would be logical given that if a student does not transfer, he or she does not need to become oriented to another series of requirements or a new program and services (Herbert et al., 2014). Herbert et al. (2014) reported that data found in their study was consistent with earlier findings in higher education literature that examined predictors of college completion, specifically, family and peer support is a more significant predictor of success over and above personal or institutional variables.

The purpose of the qualitative descriptive method study conducted by Kayhan, Sen, and Akcamete (2015) was to examine disability services from the perspective of students at two state universities in the Central Anatolia Region of Turkey. The study was conducted via interviews with six students with disabilities. Data was collected with a semi constructed questionnaire that included seven questions, collected through

interviews. Transcripts were recorded and transcribed with codes given to the concepts and themes. Seven themes were identified and included registration, awareness, adaptations, social support, communication and security, academic support, and service competence.

Student views were based upon their disabilities (Kayhan et al., 2015). The students with hearing and visual impairments reported that they were sufficiently informed about courses, while students with orthopedic impairments and autism spectrum disorders indicated they were not informed about courses and course content. The one student with an orthopedic impairment indicated that although he received assistance from student affairs during registration, he had difficulty gaining access to the elevators and bathrooms on the opposite side of the building. As far as course adaptations, levels of support depended upon the department and the student's level of comfort with requesting support (Kayhan et al., 2015).

All students in the Kayhan et al. (2015) study indicated that social services were not adequate to meet their needs. They reported that there should be specialized medical services that can address specific medical issues for students with disabilities in a higher education setting.

One student reported that she received support from disability services, but that she was reluctant to make complaints about professors. The students further reported that there should be more information given to faculty to provide appropriate support to students with disabilities. Most of the students report that the name of the disability services unit should be changed to reflect greater inclusion of all students. They suggested "Student Services" (Kayhan et al., 2015, p. 637), so that students who may

have difficulty in some area but not a disability could also get support. A student may have test anxiety, time management issues, and organization needs, and therefore, the support center should be available to all students (Kayhan et al., 2015).

**Self-advocacy skills.** Self-advocacy involves a student's ability to communicate needs and make decisions about the supports needed to achieve goals (Stodden, Brown, & Roberts, 2011). Two key ideas in self-advocacy are knowledge of self and knowledge of rights (Daly-Cano et al., 2015). Daly-Cano et al. (2015) noted that students who are able to describe what they need to be successful and who have an understanding of what rights they have as disabled Americans were most likely to be successful in college. When a student understands his or her disability, he or she is also more likely to use strategies consistently and develop effective social connections with peers, faculty, and staff (Daly-Cano et al., 2015).

The study conducted by Albertini et al. (2012) examined two questions regarding deaf students' integration into college. First, the authors evaluated the distribution of responses to two inventories: The Noel-Levitz College Student Inventory (CSI) Form B and the Learning and Study Strategies Inventory (LASSI). Second, the authors wanted to identify any personal factors that were identified within the two inventories that would potentially predict academic performance by the end of the first quarter. These were measured using two nonverbal reasoning assessments. The alpha coefficients for the Noel-Levitz CSI Form B are consistent across three types of institutions. Two-year colleges have a coefficient alpha of .79; 4-year private institutions have a coefficient alpha of .81; and finally, 4-year public schools have a coefficient alpha of .82. The

internal consistency for the LASSI was shown to be positive with the coefficient alphas for the 10 measured areas ranging from .73 to .89 (Albertini et al., 2012).

The participants were those students enrolled in a 2-year associate degree program who were recruited during 2-week freshmen orientation sessions over a 3-year period via two methods (Albertini et al., 2012). First, invitations were placed in mailboxes, and second, counselors in orientation classes reminded all students about the invitation. Students were offered a monetary incentive to participate, and a total of 437 students participated in the study (Albertini et al., 2012).

There was a consistent pattern of responses for the self-assessments and perceptions across all three cohorts of participants (Albertini et al., 2012). In the area of self-regulation, students' perceptions about their use of support strategies was an area of strength (Albertini et al., 2012). Students expressed less confidence in their abilities regarding preparing for classes, managing their time, and sustaining attention to tasks on assignments. The students also indicated areas of relative weakness in their ability to identify important information, in test preparation, with anxiety, in motivation, and with attitude. The responses reflected in the Noel-Levitz CSI Form B affirmed those findings (Albertini et al., 2012). These results may indicate that while the students had experience with accessing services and supports, they lacked confidence in their own abilities to manage time, prepare for tests and assignments, and manage anxiety. Due to the social and emotional difficulties that this anxiety causes, some students do not persist to degree completion. Albertini et al. (2012) concluded that the results seem to be in direct conflict with the student's intended desire to enroll in college to complete a degree. The authors

suggested that colleges need to engage students better both academically and socially to overcome these barriers.

Albertini et al. (2012) further reported that findings related to the Academic Study Scale of the Noel-Levitz CSI around motivation and the LASSI self-regulation component were positively correlated with academic performance during the first year of college. Students with strengths in these areas obtained higher GPAs than those assessed because this area was one of relative weakness. The Albertini et al. (2012) results indicate that the instruments used in the study identified personal factors that can influence the persistence of students. The authors argued that many of the personal factors that impact retention and persistence are factors that can potentially be mediated by interventions established by a college. The study further echoes the need for social and academic integration of students early in their college careers. The authors discussed the use of learning communities as one way to engage students early on with supports in their classes that would also foster the development and refinement of skills needed to be successful (Albertini et al., 2012).

Another study examining self-advocacy skills as they relate to persistence was conducted by Daly-Cano et al. (2015). When students transition from high school to postsecondary institutions, the skills of self-advocacy become increasingly important for student success. Once students have entered college, the process needed to obtain supports and services changes from entitlement to eligibility (Daly-Cano et al., 2015). Thus, the student must disclose that he or she has a disability and then explain the needs to the disabilities services office as well as to faculty, peers, and staff with whom the student interacts (Daly-Cano et al., 2015).

Daly-Cano et al. (2015) used a grounded theory method in their study. The purpose of the study was to develop a grounded theory about the development of the sense of belonging for a diverse group of first-year college students. The study is an analysis of the experiences of eight students with disabilities. The authors conducted semi-structured, individual interviews, one in the fall semester, and one in the spring semester. The fall protocol was a series of broad questions, including questions about what it is like to be a student at the university, what happened before college that helped with adjustment, influential people with the transition to college, as well as influences for a sense of belonging at the university. In the spring semester, the questions were more targeted toward the concept of self-advocacy (Daly-Cano et al., 2015). Questions included if the student could return to school on schedule, what he or she would do differently, and what he or she would tell another student with a disability about coming to that university. Interview transcripts were analyzed, and coding was determined based upon 100% agreement among the research team. The second round of interviews was analyzed the same way. After interview two, students were invited to offer feedback on both the themes as well as the research process (Daly-Cano et al., 2015).

Most students in the study indicated that they learned self-advocacy skills from family and educators in the K-12 setting. Students could develop these skills through three mentioned contexts. First, skills were developed through verbal and nonverbal messages of support. These included conversations with family and friends in which those people described difficulties that the students encountered and balanced those descriptions with messages of support in the students' capability to be successful. Second, students gave examples of situations in which direct instruction of self-advocacy

skills were taught by a teacher or family member. As the students could demonstrate the ability to self-advocate, they developed confidence so that the next time they were in an unfamiliar situation, they would be able to advocate and get their needs met. Third, the students were provided with specific strategies to self-advocate when they arrived at college. In preparation for college, the students were encouraged to practice self-advocacy skills in high school (Daly-Cano et al., 2015).

In the Daly-Cano et al. (2015) study, students in college described engagement in self-advocacy in three different ways. First, students engaged in proactive self-advocacy where they advocated for accommodations prior to needing them. Most often this occurred at the beginning of the semester through the Office of Disability Services. The second way the students engaged in self-advocacy was reactive. In this case, self-advocacy was done when the student was presented with a hurdle or challenge. In some cases, students engaged in creating strategies to counter the difficulty they were having. The final and third way that students engaged in self-advocacy was with retrospective self-advocacy. In this case, after a student had already had a negative experience and learned that he or she needed to self-advocate, but did not, learning was achieved. The students were then able to define what they should have done, and they could prepare themselves for the next time they would encounter a similar situation (Daly-Cano et al., 2015).

Students with different disabilities come to college with a variety of needs, previous experiences and competencies regarding self-advocacy. Self-advocacy requires a knowledge of self and developing strategies for gathering information, networking with peers and faculty, learning the new system of their institution, and responding to their

own needs. The key finding from the Daly-Cano et al. (2015) study is that self-advocacy skills can be developed with practice and teaching of the skills from an early age.

A phenomenological study conducted by Denhart (2008) investigated the barriers to higher education of 11 students with learning disabilities. The author was a student with severe dyslexia, and she had negative experiences in school. She sought participants with learning disabilities that had experiences different from her own. A total of 11 participants completed interviews lasting from 42 to 139 minutes. Out of the 11 students, 10 of the participants attended a private college. One student attended a community college in the area. Transcribed interviews were coded using a software program. Five a priori categories were created based upon research questions, and through in-case coding, 20 more categories emerged, for a total of 25 categories. After analysis, a draft of the initial findings was sent to the participants, no participant disputed the findings, and the findings were discussed within the context of the five research questions (Denhart, 2008). Research question one of the Denhart (2008) study explored similarities in the experiences of college students labeled with a learning disability, and five themes surfaced. First, nine out of the 11 participants mentioned that they felt like they spent a longer amount of time on assignments than their nondisabled peers. One student noted that while he felt his peers would spend 2 to 3 hours on an assignment, he spent 20 hours on the same assignment. The second theme to emerge from four out of the 11 participants was that the work individuals put into achieving a grade was not recognized by others. One participant noted that he did not think his professors realized how hard he works. The third theme identified by eight out of the 11 participants was that the work produced was not commensurate with the effort they put into the assignment. The fourth theme

identified by eight out of the 10 students who attended a private college was that the relationship they had with the learning specialist was critical to their success. This was due to the perception that the students saw the issues from the other students' perspectives as well as verbalizing an understanding of how much time and effort each student expends on assignments. Finally, five out of the 11 participants experienced a rapport with other students with learning disabilities. This rapport was established easily. The students identified that there was a recognition among the students that others were having the same struggles and they could relate to each other (Denhart, 2008).

Research question two in the Denhart (2008) study explored how this subset of students with disabilities viewed themselves based upon their individual experiences. Nine out of the 11 participants reported emphatically that they possessed a learning *difference* rather than a learning *disability*. The participants placed an emphasis on the idea that each person possesses a healthy learning difference. Only the student who attended the community college used the term "learning disabled" (Denhart, 2008, p. 491). However, even when explaining her learning disability, the explanation was described as a *difference* in learning versus not having *ability*. Out of the 11 participants, 10 also spoke of feeling misunderstood by faculty. One student noted that a professor told her she should reconsider taking his class because she had a learning disability (Denhart, 2008).

Research question three of the Denhart (2008) study explored the experiences in the process of assessment and accommodations for this particular subset of college students with learning disabilities. Five themes were discussed regarding this question. The first theme was positive and negative testing experiences. Three of the participants

reported positive experiences with the testing process. The positive experiences stemmed from the excitement of testing and discovering what was impeding academic growth and progress. Five of the participants reported negative reactions to the testing process. Negative experiences included emotional and physical pain that was linked to cognitive exhaustion. A second theme that emerged was the surprise at learning that academic difficulties could be linked to a learning disability. Three students expressed surprise at being labeled as having a learning disability. They reported that they had connected their difficulty to being stupid or lazy but not to a disability. The third theme was that all 11 participants reported feeling pride at having their intellect validated by a clinical measure. In order to have a learning disability, intellectual ability must be in the average to above-average range of function (Denhart, 2008). The fourth theme was that eight of the 11 participants reported not receiving enough information to understand how the learning disability affected their daily lives. Finally, the fifth theme was that nine of the participants who were granted accommodations expressed reluctance to ask for the accommodations. The students expressed a sense that the work they did with accommodations was not as worthy of a good grade as work they attempted without accommodations (Denhart, 2008).

Research question four of the Denhart (2008) study explored barriers to the access of higher education for this population. Four themes emerged from this question. The first theme six participants expressed was difficulty with organizing concepts for reading and writing. Identifying key ideas and concepts proved to be difficult for many of the students. The second theme that emerged involved six participants who expressed difficulty with oral and written comprehension. The students indicated difficulty

understanding professors with different accents. The third theme, related to the first theme where four participants reported difficulty with verbal communication. Students spoke of difficulty expressing ideas in class and participating in discussions because he or she could not formulate the ideas to express them. Finally, the fourth theme that emerged was that the participants expressed that they experienced a different way of thinking than their nondisabled peers. One student expressed it this way, “My brain is like a pomegranate and they want it to be like an orange” (Denhart, 2008, p. 493).

The fifth and final question investigated in the Denhart (2008) study was what the participants with learning disabilities viewed as their accommodation needs. Five themes emerged from this question. In the first theme, 10 out of the 11 participants discussed the need for self-understanding, particularly for the different way of thinking that everyone possessed. The students reported that this understanding came through interaction in the learning disability community group. In the second theme, seven out of the 11 participants could overcome barriers using traditional accommodations. The third theme, obtaining writing assistance, was used by five out of the 11 participants. This included use of the campus writing center as well as obtaining an editor for written work. The fourth theme, using organization strategies, was utilized by five of the 11 participants. The use of color coding, separating material, and making lists were specific strategies mentioned by students. Finally, the fifth theme was the use of visual strategies to overcome barriers. These included using multicolored highlighters, drawing outlines or pictures to learn and remember material.

## Summary

There is a gap in the literature regarding students with disabilities and sense of community (DaDeppo, 2009). The studies reviewed in this literature review argued that students with disabilities may have different experiences based upon their specific disability (Albertini et al., 2012; Daly-Cano et al., 2015; Herbert et al., 2014; Sniatecki et al., 2015). In the study conducted by Sniatecki et al. (2015), the researchers found that faculty working with students with disabilities had the most positive feelings about their students with physical disabilities and the most negative feelings about students with mental health disabilities, with feelings about students with learning disabilities falling in the middle—closer to feelings of mental health disabilities. Researchers have stated that when a student feels a sense of belonging and integration, both academic and social, he or she is more likely to persist (DaDeppo, 2009; Herbert et al., 2014; Tinto, 1975, 1993).

Sense of community, as defined by McMillan and Chavis (1986), has four key elements: membership, influence, emotional connection and integration, and fulfillment of needs. It is in the crosswalk of integration and fulfillment of needs, in conjunction with integration within a college setting and persistence for students with hidden disabilities, including learning disabilities, mental health disabilities, and ADHD, where a gap in literature can be identified. The factors that influence persistence, particularly as they intersect with feelings of being a member of the college community, sharing influence with others, integration, that individual needs will be met by being a part of the group, and a shared emotional connection with others around him or her, the elements of sense of community may provide a way to further examine the influences that promote persistence on a college campus (DaDeppo, 2009).

Studies exploring persistence and sense of community employed more quantitative than qualitative methodologies (persistence: quantitative = 4, qualitative = 0; sense of community: quantitative = 4, qualitative = 0). Studies investigating students with disabilities were evenly distributed between methodologies (quantitative = 3, qualitative = 4). Future research studies that employ both quantitative and qualitative methodologies have been recommended in the studies of sense of community, persistence, and students with hidden disabilities (Albertini et al., 2012; Daly-Cano et al., 2015; DaDeppo, 2009; Tinto, 2012).

In conclusion, as the number of students with disabilities enrolling on college campuses continues to increase, colleges need to determine how to best enhance the probability that students will persist in college to graduation (DaDeppo, 2009). Researchers have investigated the factors that impact sense of community (Lounsbury & DeNeui, 1996; Pretty, 1990). They have investigated factors that lead to persistence (Fike & Fike, 2008; Flynn, 2014). In addition, researchers have attempted to identify factors that lead to persistence for students with disabilities and the unique obstacles that they may face in completion of a college degree (Herbert et al., 2014). However, to this date, no one in the literature has sought to triangulate these three issues in an attempt to examine the elements of sense of community and the potential impact those factors may have on persistence for students with hidden disabilities.

The current bodies of literature examining students with disabilities, sense of community, and social integration have used a variety of methodologies. Most studies conducted regarding students with disabilities have been qualitative in nature, with the purpose of understanding the lived experience of the students. Sense of community has

been primarily studied using surveys in a quantitative methodology to determine if individuals within a given context feel a sense of community. The studies examining social integration have also primarily been quantitative in nature examining factors that lead individuals to become more socially integrated (Albertini et al., 2012; Daly-Cano et al., 2015; DaDeppo, 2009; Tinto, 2012). Integration has been shown to have a positive impact on retention and intent to persist (DaDeppo, 2009). The factors that lead to integration, which can impact persistence, is the focus of this study.

Chapter 3 explores the methodology to be used in this study. The research regarding sense of community has been primarily quantitative in nature. The research regarding students with disabilities has primarily been qualitative in nature as researchers explored lived experiences. Social integration research has had both quantitative and qualitative methodology. For the purposes of this study, a quantitative research methodology was used to gather data regarding the relationship between sense of community, social integration, and students with hidden disabilities.

## **Chapter 3: Research Design Methodology**

### **Introduction: General Perspective**

Today, a 4-year college education is viewed as critical to facilitate career and financial success in the world of the 21<sup>st</sup> century (Albertini et al., 2012). However, DaDeppo (2009) claimed that only 57% of freshmen who started college in 2002 at 4-year institutions completed a degree within a 6-year period. Due to these reported rates of completion, there have been numerous studies regarding college retention, persistence, and degree attainment (Flynn, 2014). One of the factors identified in the literature as a positive influence on retention for first-year college students is successful integration (Tinto, 1975).

Studies have linked persistence to integration and integration to a sense of community (McMillan & Chavis, 1986). McMillan and Chavis (1986) theorized that sense of community had four key elements: membership, influence, integration and fulfillment of needs, and shared emotional connection. A sense of community is critical to all students and can impact completion rates on campuses, including those students with disabilities (DaDeppo, 2009).

The process of integration into a college environment is described as a transition “between membership in past communities and membership in the new communities of college” (Tinto, 1993, p. 125). College and university campuses are traditionally made of multiple communities that offer opportunities for student integration. Integration can occur within two distinct communities on a college campus (Rovai et al., 2004). First is

the academic community within the classroom—the learning environment. The second is the school’s social community. Students can have multiple senses of community regarding the multiple communities in which they are a part on a college campus (Rovai, 2002). Academic integration is defined as the extent to which a student regards interpersonal relationships with faculty and peers, and that those relationships promote both intellectual growth and development (Tinto, 1975). Social integration is defined as the bidirectional interaction between the student and the campus system, which includes peers, faculty, staff, and extracurricular activities (Tinto, 1975). When a student has the perception that the campus community, as a whole, cares about him or her on a personal level, he or she can be described as having a high level of social integration (DaDeppo, 2009). The greater the individual student’s academic and social integration, the more likely he or she is to persist to degree completion (DaDeppo, 2009).

### **Problem Statement**

The purpose of this study was to establish the potential influence a sense of community had on a college campus and if there was a difference for students with and without hidden disabilities. Due to the nature of a number of factors related to identification of students with disabilities on college campuses, this particular population cannot be visibly identified. The triangulation of sense of community, social integration, and students with hidden disabilities could potentially uncover whether this population feels a sense of community and social integration within a setting that promotes it, compared to their nondisabled peers. The numbers of students with disabilities attending college has increased over the past few decades, while graduation rates have not increased at the same rate proportionally as their nondisabled peers (Cortiella &

Horowitz, 2014). Completion rates for students with learning disabilities at 4-year colleges is 34% compared to 51% completion rate for nondisabled peers (Cortiella & Horowitz, 2014).

The numbers of students with disabilities enrolling in college has increased dramatically over the past several decades (DaDeppo, 2009; Daly-Cano et al., 2015). The number of students with learning disabilities attending any postsecondary school increased from 30% in 1990 to 48% in 2005. A gap in the literature has been that the numbers of students with learning disabilities that attend 4-year colleges increased from 5% in 1990 to 16% in 2005 (Cortiella & Horowitz, 2014). However, even with this increase, the number of students with disabilities who persist and earn a degree is lower, proportionally, in comparison to their nondisabled peers (Herbert et al., 2014).

The college completion rate for students with learning disabilities is 41%, compared to 52% of nondisabled peers (Cortiella & Horowitz, 2014). Students with learning disabilities are attending 2-year community colleges at a rate of 50%, which is double their nondisabled peers' attending at a rate of 21% (Cortiella & Horowitz). At 4-year institutions, the percentages are practically reversed with students with learning disabilities enrolling at 21%, compared to nondisabled peers at 40% (Cortiella & Horowitz). In order to persist, students need to find a college or university setting where they feel welcomed and integrated (Tinto, 1993).

Students who access disability services often have greater success and persistence than those students who do not (Herbert et al., 2014). Disability support services can vary across colleges and universities, in part due to size of staff and breadth and depth of services offered. Services can differ between colleges and universities based upon the

contention that there is not a similar vocabulary common to all colleges and universities (Herbert et al., 2014). It is difficult for colleges and universities to collect data on the effectiveness of disability support services. In addition, the Family Education Rights and Privacy Act (1990) prohibits colleges from sharing information that can result in individual identification so that they are unable to provide students with information about other students who may also have a disability.

### **Research Context**

The site chosen for this study was a small, private, liberal arts college in Western New York State. There were 3,838 undergraduate and graduate students in attendance. There are five schools within the college, the Schools of: Arts and Sciences, Education, Business, Pharmacy, and Nursing. In addition, there are online courses for undergraduates as well as a program for continuing education. The college confers degrees for the undergraduate, masters, and doctoral levels. There are 549 full time faculty and staff on campus, with additional part time faculty and staff. There were 180 college students formally identified as college students with a disability.

The private institution was chosen as an appropriate site for this study because there was already a program in place designed to foster a sense of community at the college. The program assists students with navigating social and academic issues that often arise during freshman year, and the program provides support. Students were further encouraged to join in campus activities and have multiple opportunities for social events and campus community involvement. The program has built in opportunities for all students to develop a sense of community, social integration, and it was an appropriate site to view both the full campus' sense of community as well as the sense of community

that students with hidden disabilities may experience. The Institutional Review Board (IRB) approved the study in the spring semester, immediately prior to the release of the survey to students.

### **Research Questions**

This study has two guiding questions:

1. Which of the four factors of sense of community do undergraduate students on a small, liberal arts college campus experience?
2. Is there a difference in the sense of community for undergraduate students with and without hidden disabilities?

### **Research Design**

The methodology for this study was a quantitative survey design. A survey design provides a numerical description of trends, attitudes, or opinions of a given population (Creswell, 2014). A survey was the preferred method of data collection, given that the target population was undergraduate college students, and the ease with which they can access a survey, by smartphone, computer, or tablet, made the administration of the survey more accessible than through a paper-and-pencil task (Creswell, 2014). The survey was conducted in a cross-sectional format, measuring responses at one point in time, during the spring semester of the academic year. The study began with the researcher meeting with the president of the student government to explain the survey and ask for support in obtaining the required sample ( $N = 200$ ). The target sample size was determined by an a priori power analysis conducted with the software named G\*Power.

Quantitative methodology has been commonly used in research regarding sense of community. The tool was created to facilitate research that measures sense of community in a variety of settings. The instrument measured four subscales: (a) reinforcement of needs, (b) membership, (c) influence, and (d) shared emotional connection. Cronbach's coefficient, or coefficient alpha, for the overall scale was .94. The subscales demonstrated reliability with coefficient alpha scores ranging from .79 to .86.

The survey is attached as Appendix A, with 10 additional questions addressing demographic and disability information. The survey was scored in accordance with the scoring instructions that accompanied the survey. The responding group was disaggregated into groups of students with hidden disabilities, visible disabilities, and those with no disabilities as comparison groups (Huck, 2012). For the multivariate analysis of variances (MANCOVAs) that tested whether sense of community differed for students with or without disabilities, the targeted response rate was  $n = 200$ . For this measure, the proportion of variability between the components of sense of community, students with hidden disabilities, students with visible disabilities, and students without disabilities was explored.

Students were informed of the study and invited to participate via email throughout the campus community. In the spring semester, the researcher contacted the undergraduate student government board president to speak to him about the study to increase the likelihood of student participation (Appendix B). The office of the Dean of the School of Education sent out an email link to undergraduate students, regardless of major. One week after the initial survey, students received a second email with the link

attached. Finally, 2 weeks after that the initial email, a final email with the link to the survey was sent to students to collect responses from as many students as possible.

### **Research Participants**

The sample included undergraduate students at a small, liberal arts college to investigate the influence of the four factors of sense of community. Students were asked to identify themselves as a student with a disability because some of them might have received support services as a student in middle and high school, yet they did not pursue support in college. Although this may have been a potential stressor for students, they were being asked to self-identify with an option to not answer the question.

Approximately 17% of students with learning disabilities received accommodations and supports through their postsecondary institution, compared to 94% in high school (Cortiella & Horowitz, 2014). The survey was sent to all undergraduate students on campus ( $N = 2,786$ ), including full-time and part-time students. This study not only gathered data on those students who self-identified through the office of student disabilities but also those who did not identify themselves as a student with a hidden disability to the college, to obtain data from as wide a range of students with hidden disabilities as possible within the student body. Students were asked to identify if they received services during their middle and high school education. It was important to note for students that there was no way to identify them as individual participants. There were no names associated with the link to complete the survey. The students also had an opportunity to not answer questions that they did not wish to answer. All information was confidential and anonymous.

As noted in the literature, one in four students who received special education services in high school considered themselves as having a disability and informed the college of the need for postsecondary services (Cortiella & Horowitz, 2014). This leaves a population of students who may have had services in the past, but did not seek them in college, and they may have a hidden disability. Thus, the need was to invite all students to participate and to identify as many students with hidden disabilities as possible.

### **Instruments Used in Data Collection**

The instrument selected for the study was the SCI-2 developed by Chavis et al. (2008). The instrument was originally used in seven different communities around the United States. This study examined the sense of community of students with and without hidden disabilities. These disabilities are not visible and, therefore, others would not know of the existence of a disability within the individual.

### **Procedures for Data Analysis**

Analysis was conducted using SPSS software. An ANOVA was run to determine the relationship of variables to one another (Cronk, 2016). When it was determined that the variables were correlated, then a MANOVA was run to analyze the relationships between the variables for students with and without hidden disabilities (Cronk, 2016).

### **Summary**

The purpose of this study was to establish the potential influence sense of community has on a college campus and if there is a difference for students with and without hidden disabilities. The numbers of students with disabilities attending college has increased over the past few decades, while graduation rates have not increased at the same rate proportionally as the nondisabled peers (Cortiella & Horowitz, 2014). The

completion rate for students with learning disabilities at 4-year colleges is 34% compared to 51% completion rate for their nondisabled peers (Cortiella & Horowitz, 2014).

This study will contribute to the literature related to the role that sense of community and social integration have on students with and without hidden disabilities. The data set provides quantifiable information to link sense of community and social integration to students with and without hidden disabilities.

## **Chapter 4: Results**

### **Research Questions**

The purpose of this study was to explore the relationship between the four factors of sense of community and to establish if there is a difference in the sense of community for students with and without hidden disabilities. The study sought to answer the following research questions:

1. Which of the four factors of sense of community do undergraduate students on a small, liberal arts college campus experience?
2. Is there a difference in the sense of community for undergraduate students with and without hidden disabilities?

The SCI-2 was sent to all undergraduate students at a small, 4-year liberal-arts college in Western New York State. The participants provided information regarding demographics, disability status, the importance of a sense of community as well as the importance of each individual component that comprises sense of community. The descriptive statistics on the survey results are presented in Chapter 4. In addition, correlations between the importance of community and the sense of community scales are reported. Because those variables were highly correlated, the test for differences between students with and without hidden disabilities was run using a MANCOVA regarding how important community was to the student as a covariate.

## Sample

The SCI-2 (Chavis et al., 1986) was sent, via a link, to all undergraduate students ( $N = 2,786$ ). Of that population, 278 responded to the survey, indicating a return rate of 10.5%. The students were evenly distributed by their year in school in accordance with the institutional data. The students with visible disabilities ( $N = 3$ ) were excluded in the overall analysis, leaving 275 participants.

As shown in Table 4.1, 77.4% of the respondents were women. This was only a slightly larger proportion of women who were enrolled at the college. According to the college profile, there were 1,048 men enrolled as undergraduate students (40%) and 1,559 women enrolled as undergraduates at the college (60%). The respondents were almost equally distributed across class levels, although there were fewer freshmen who

Table 4.1

### *Demographic Data of the Sample*

Variable	N-Value	Percent (%)
Gender		
Male	36	20.3
Female	137	77.4
Class Status		
Freshman	32	18.6
Sophomore	47	27.3
Junior	46	26.7
Senior	47	27.3
Transfer Students	44	25.4
Hispanic Students	9	5.1
Race		
American Indian or Alaska Native	1	.6
Asian or Pacific Islander	6	3.4
African American	9	5.1
White	154	87.0
Other	2	1.1

*Note.* Percentages for gender and race did not add up to 100 because not all students responded to those items.

participated (18.6%). One-quarter (25.4%) of the students had transferred to the college from other institutions. This is commensurate with the proportion of students, college-wide, who transferred (26%). The clear majority of the respondents identified as White (87.0%) and Non-Hispanic (94.9%). Compared with students enrolled at the college, the survey respondents represented slightly higher percentage of students of color and those who identify as Hispanic.

As shown in Table 4.2, there were very few students who identified as having a visible disability ( $N = 3$ ). It should be noted that more than one-third of the respondents identified as having a hidden disability (39.2%). Of all respondents, 8% indicated that he or she received support services in middle or high school, and 5.7% indicated that he or she had an individualized education program (IEP) or received accommodations under a 504 plan while in middle or high school. When considering only those students who identified as having a hidden disability, 21% indicated they received support services in middle or high school, and 13% indicated that they had an IEP or 504 plan while in middle or high school. Looking further at the subset of students with hidden disabilities who reported having an IEP or 504 plan, 56% of those students reported being registered with the Office of Disability Services on campus.

Table 4.2

*Disability and Services Status*

Variable	All Respondents	Respondents with Hidden Disabilities
Visible Disability	1.7%	—
Hidden Disability	39.2%	—
Support Services	8.0%	21.0%
IEP/504 Plan	5.7%	13.0%
Registered with Office of Disability Services	3.4%	9.0%

Table 4.3 shows the descriptive statistics for each of the scales that measured importance and sense of community. As shown for each scale, the full range was used. This indicates variability in student experiences. Additionally, the mean for importance of community indicates that on average, community was very important to the students who responded to the survey. The means and standard deviations for the four sense of community scales indicate similar experiences across these four aspects of community.

Table 4.3

*Mean and Standard Deviation for Group Differences*

Variable	Mean	Standard Deviation	Minimum	Maximum
Importance of Community	5	1	1	6
Reinforcement	16	4	6	24
Membership	15	4	6	24
Influence	15	4	6	24
Connection	16	5	6	24

The correlations were run on the survey results. One purpose was to test whether the sense of community subscales were correlated with one another. Given that the subscales were correlated, a MANOVA was then run to account for the correlation among the dependent variables. A second reason to run the correlations was to test whether the importance of community was correlated with students' sense of community. Importance of community needed to be included as a covariate. As shown in Table 4.3, all scales were significantly correlated with one another, and all four coefficients were strong and moving in the same direction. Because of these significant correlations, the dependent variables of needs, membership, influence, and connection were tested using a MANOVA rather than a series of four separate ANOVAs. Also, importance of

community was included as a covariate to account for its correlation with the dependent variables.

Table 4.4

*Correlations Between Variables of Sense of Community and Importance of Community*

	1	2	3	4	5
Importance of Community	—				
Needs	.475*	—			
Membership	.504*	.667*	—		
Influence	.528*	.725*	.725*	—	
Connection	.538*	.820*	.776*	.830*	—

Analysis was conducted using a MANCOVA because of the strong correlation between the variables (Meyers et al., 2013). A MANCOVA allows a researcher to analyze relationships between dependent variables at each level of an independent variable. It first creates and tests the effect on a mathematical composite of the four dependent variables to see whether there is a multivariate difference between levels of the independent variable and the composite dependent variable. Then it breaks out the tests at the univariate level, indicating if there is a significant difference between levels of the independent variable for each component of the dependent variable. In this case, the dependent variables were: reinforcement of needs, membership, influence, connection, and total sense of community. The independent variables were whether the student identified as having a hidden disability.

A covariate is a variable that is known to be related to the dependent variables but is not treated as an independent variable. It is used in a MANCOVA as a statistical

control technique (Cronk, 2016). Importance of community was included as a covariate because it was highly correlated with each of the sense of community variables.

As shown in Table 4.5, there was a significant difference between students with and without a hidden disability for the reinforcement of needs ( $F(1,164) = 13.51$ ,  $p = .000$ ,  $\eta^2 = .08$ ), membership ( $F(1,164) = 11.05$ ,  $p = .001$ ,  $\eta^2 = .06$ ), and overall sense of community ( $F(1,164) = 8.67$ ,  $p = .004$ ,  $\eta^2 = .05$ ). The significant difference was that students with no disabilities reported a higher sense of community than those with a hidden disability (Table 4.5).

There was no significant difference between students with and without hidden disabilities for their sense of influence ( $F(1,164) = 2.1$ ,  $p = .15$ ) and shared emotional connection ( $F(1,164) = 3.60$ ,  $p = .06$ ). It should be noted that the power for these two analyses was very low (power = .30 and .47, respectively). Therefore, caution should be used when interpreting these nonsignificant findings.

Table 4.5

*Tests of Between-Subjects Effects for Students with Hidden Disabilities*

Dependent Variable	F	Sig	$\eta^2$	Observed Power
Needs	13.512	.000	.076	.955
Membership	11.047	.001	.063	.911
Influence	2.1010	.149	.013	.302
Connection	3.6030	.059	.021	.471
Total	8.6680	.004	.050	.833

**Summary of Results**

Chapter 4 provided an analysis of the data collected from a survey sent to undergraduate students at a small, 4-year liberal-arts college. The participants included

undergraduate students with hidden disabilities ( $N = 65$ ), visible disabilities ( $N = 3$ ), and students with no disabilities ( $N = 102$ ). Students with visible disabilities were so few that those students were not included in the analysis.

The data indicated that students with hidden disabilities experienced a statistically significant difference in the experience of sense of community in the areas of needs being met, membership, and the overall sense of community. The areas of influence and connection did not show a statistically significant difference between students with hidden disabilities and their nondisabled peers.

Research question 1 examined which of the four factors of sense of community the undergraduate students experienced in a small, liberal arts college campus. The data revealed that, overall, students experienced all four factors of sense of community: needs, membership, influence, and connection. Given that the means were all high, this indicates that most students experienced a high level of sense of community. If the standard deviations are large, that indicates a great deal of variability in individual student experience. In this study, the means for reinforcement of needs, membership, influence, and connection were 16.2, 15.3, 15.2, and 16.2, respectively. The standard deviations for the four factors were 4.1, 3.7, 4.0, and 4.6, respectively, indicating that there was not a great deal of variability in the students' experiences. All four factors were strongly correlated with one another.

Research question 2 examined if students with hidden disabilities experienced more or less of a sense of community than students without hidden disabilities. The results indicated that in the areas of reinforcement of needs, membership, and overall sense of community, students who did not have hidden disabilities experienced a higher

sense of community than students who identified themselves as having a hidden disability. In the areas of influence and connection, there was no statistically significant difference between those students with hidden disabilities and their nondisabled peers. Chapter 5 discusses these results within the context of the larger body of literature. In addition, limitations of the study, and recommendations for further research are identified.

## **Chapter 5: Discussion**

### **Introduction**

In today's society, a 4-year college education is viewed as critical to facilitate career and financial success in the world of the 21<sup>st</sup> century (Albertini et al., 2012). However, DaDeppo (2009) claimed that only 57% of freshmen who started college in 2002 at 4-year institutions completed a degree within a 6-year period. Due to these reported rates of completion, researchers have studied college retention and degree attainment (Flynn, 2013). One of the factors identified in the literature as a positive influence on retention for first-year college students is successful integration (Tinto, 1975). There are two types of integration that Tinto (1975) identified: academic integration and social integration. Academic integration refers to positive academic self-esteem. Students who are academically integrated enjoy the subject they are studying, feel successful with grades and classroom performance, and identify him- or herself as a student of a subject (Tinto, 1975). Social integration refers to relationships with peers and adults on the college campus. Social integration is not necessarily linked to having the most number of friends on campus but having relationships that are meaningful and personal (Tinto, 1975). Studies have linked integration to a sense of community (McMillan & Chavis, 1986). McMillan and Chavis (1986) theorized that sense of community has four key elements: membership, influence, integration and fulfillment of needs, and shared emotional connection. A sense of community is critical to all students, including those students with hidden disabilities (DaDeppo, 2009).

Schools are complex environments where both cognitive and social functioning are developed (Rovai et al., 2004). At the college level, learning takes place in both the classroom and in the social school environment. Students develop identities in multiple environments on a college campus, resulting in a sense of community and role within that community (Rovai et al., 2004). Sense of community has been measured quantitatively through the SCI-2, which measures all four attributes of sense of community for individuals within a given community (Chavis et al., 1986).

The purpose of this study was to establish the potential influence sense of community has on the college campus, and if there is a difference for students with hidden disabilities. This population cannot be visibly identified, due to the nature of several factors related to the identification of students with disabilities on college campuses. The triangulation of sense of community, social integration, and students with hidden disabilities can uncover if this population feels a sense of community and social integration within a setting that promotes it, compared to a population of their non-disabled peers. This study was conducted on a campus with a program in place to foster sense of community. The students were assigned an advisor who served as a support person for not just the fall semester, but who could be a connection for the students during their time as students at the college. Students placed in small groups based upon their residence hall assignment, participated in a course that took place in the fall semester of their freshman year. Throughout the semester long course, students were provided with support for academic and social challenges that might exist for new students entering college. Study strategies, test-taking strategies, writing strategies, and social strategies were reviewed with students to provide them with strategies that can be

applied to multiple situations. Problem solving was also conducted with specific groups of students who might have experienced greater social stress in their living environments. Students were encouraged to become involved in various groups on campus and social events that were held in the residence halls and on the campus to build a sense of community in different environments. Students had access to academic and social/emotional supports throughout their years at the college. In addition, students with disabilities had access to the Student Disabilities Center with support for study skills, writing, math, and organization. The support system that the college developed would ideally support a diverse student body and foster success.

The numbers of students with disabilities attending college has increased over the past few decades, while graduation rates have not increased at the same rate proportionally as their non-disabled peers (Cortiella & Horowitz, 2014). The completion rate for students with learning disabilities at 4-year colleges is 34%, compared to 51% completion rate for non-disabled peers (Cortiella & Horowitz, 2014).

### **Implications of Findings**

Sense of community, as it relates to a sense of belonging, can be an important factor in a student's behavior and performance (Osterman, 2000). The idea of belongingness has been linked in the research to psychological, academic, and social success within a college environment (Osterman, 2000). As shown in Table 4.5, there was a significant difference between students with hidden disabilities and those without a hidden disability for the reinforcement of needs, membership, and overall sense of community. The significant difference was such that students with no disabilities reported a higher sense of community than those with a hidden disability.

The data from this study indicates that specific components of sense of community, specifically reinforcement of needs, membership, and overall sense of community, were statistically significant in comparison to non-disabled peers. This aligns with previous research that has shown that some hidden disabilities, specifically anxiety and depression, may account for that student population feeling a lower level of belonging (Slaten, Ferguson, Allen, Brodrick, & Waters, 2016). The concept of having one's needs met, having a feeling of membership, and an overall sense of community can have an impact on student success and willingness to persist when academic expectations may become more difficult. The results of this study demonstrate a clear difference in the experience of sense of community between students with hidden disabilities and their non-disabled peers within three specific areas: the reinforcement of needs, membership, and an overall sense of community.

This data supports findings from previous studies in which a sense of belonging is of greater importance when a student is in a marginalized population on a college campus (Daly-Cano et al., 2015). The findings demonstrate that students with hidden disabilities feel a less strong sense of community regarding their needs being met by interaction with others in the community, a feeling of being a member of a community, and finally, the overall sense of community on the college campus. Positive interactions with both peers and adults can be of great importance in a student's sense of belonging and membership within a school community (Daly-Cano et al., 2015). Previous research has revealed conflicting data regarding interactions with both peers and adults for students with hidden disabilities. Support from faculty is noted in the body of literature as having a positive impact on student success regarding students with disabilities. In addition, students with

psychiatric disabilities have reported having difficulty with developing relationships with peers, having feelings of isolation, and feeling stigmatized (Daly-Cano et al., 2015).

There was no statistically significant difference between students with and without hidden disabilities for their Sense of Influence and shared emotional connection in this study. Influence results in a bi-directional relationship in which individual members have influence on the group, and the group has influence on the individual members (McMillan & Chavis, 1986). A college campus can be a place where conformity to rituals, a common mascot, clothing, and school crest all help to create an atmosphere of influence on individual members of the community. This can also foster a shared emotional connection. When students have common rituals and experiences on campus, this common history can help individuals identify as members of a community (McMillan & Chavis, 1986). Social relationships have been shown to influence an individual student's sense of community and belonging. The shared emotional connections that students experience over time in the college setting can be critical to a feeling of belonging (Daly-Cano et al., 2015).

While the two areas of Influence and Shared Emotional Connection in the current study did not have statistically significant differences between students with and without hidden disabilities, there were three areas that had statistically significant differences between students with hidden disabilities and students who did not have a hidden disability.

Fulfillment of needs was the area of greatest difference. McMillan and Chavis (1986) defined the integration and fulfillment of needs as being "reinforcement" (p. 12). The bi-directional reinforcement of needs between an individual and the group to which

he or she belongs is an important component of a sense of community. The idea of the status of being a member of a community can be a strong reinforcement of belonging (McMillan & Chavis, 1986). Another important component of reinforcement is the concept of being attracted to others in a group in which members can benefit each other in some way. Individuals will do what they need to do in order to fulfill their needs (McMillan & Chavis, 1986). Students with hidden disabilities may not experience either a sense of their own ability to contribute to the community or a sense that others within the community, including peers and faculty, can meet their needs (Osterman, 2000). The findings of this study show that even with a strong support system regarding developing a sense of community, students with hidden disabilities, as a collective group, continue to indicate that they do not feel that their needs are met by being members of the community. This could indicate that while a general sense of community is being fostered, the unique needs of students who are not visibly showing difficulty, are in fact, experiencing a difference in having their needs met by being a part of a community.

The second area that was demonstrated to be an area of statistically significant difference for students with hidden disabilities and their non-disabled peers was the area of membership. Membership encompasses a feeling of belonging, a sense that an individual has an investment in the community and therefore has a right to be a member (McMillan & Chavis, 1986). One important idea connected to membership is the idea of boundaries, meaning that there are specific individuals who are a part of a community and specific individuals who are not part of a community. Literature regarding the college experiences of students with disabilities has revealed inconsistent results regarding

relationships with peers in the transition to college as well as relationships with faculty in the college setting (Daly-Cano et al., 2015).

The third area with statistically significant results was in overall sense of community. Data from this study indicate that students who do not have hidden disabilities experience a higher sense of community than students who self-identify as having a hidden disability. Given the statistically significant differences in the areas of membership and reinforcement of needs, the overall sense of community for the population of students with hidden disabilities was lower than for students who did not self-identify as a student with a hidden disability.

The researcher's first question examined which of the four factors of sense of community undergraduate students experienced on a small, liberal arts college campus. The data revealed that, overall, students experience all four factors of sense of community: needs, membership, influence, and connection. Given that the means are all high, this indicates that most students experience a high level of sense of community. If the standard deviations are large, that would indicate a great deal of variability in individual student experience. The standard deviations for the four factors indicate that there was not a great deal of variability in student experience. All four factors were strongly correlated with one another.

The researcher's second question examined if students with hidden disabilities experience a different sense of community than students without hidden disabilities. The results indicate that in the areas of reinforcement of needs, membership, and overall sense of community, students who do not have hidden disabilities experience a higher sense of community than students who self-identify as having a hidden disability. In the areas of

influence and connection, there was no statistically significant difference between those students with hidden disabilities and their non-disabled peers.

### **Limitations**

This study was conducted at a small, liberal arts college with a convenience sample. The data does indicate statistically significant findings for the population studied within the areas of reinforcement of needs, membership, and overall sense of community. However, further research using this method would provide greater numbers to determine if these results can be applied outside this small college environment.

This research does not identify why students felt a significant difference in the areas of reinforcement of needs, membership, and overall sense of community. The other components of sense of community, including influence and connection, were not found to be statistically significant from the non-disabled peers. This area could be an area of potential research for the future. Investigating the lived experience of students with hidden disabilities, and exploring what students experience regarding having their needs met, could be identified to support an increase in the overall sense of community for this and other marginalized populations.

The idea of being individuals who matter to the community and having a shared emotional connection would seem to be equally important to the development of sense of community, yet, the data from this study indicates that reinforcement of needs and membership showed greater statistical significance in that students without hidden disabilities experience a greater sense of community in these areas. This contributes directly to the research on sense of belonging in that the specific factors of membership and reinforcement of needs are directly related to the idea of feeling a sense of belonging

to a group. This can directly inform colleges about factors that impact retention and persistence as well. Given that a student who feels a strong sense of belonging, membership, and that his or her needs are being met and is more likely to persist, it is in the best interest of all involved to determine what supports can make a college campus feel more inclusive. Membership and reinforcement of needs can be linked to this sense of belonging and therefore, a greater sense of community.

It should be noted that 39% of students responding to this survey self-identified as having a hidden disability. This number may be influenced by the way in which the question regarding hidden disability was asked in the survey. The question was written: “Do you have a disability that people cannot easily see when first meeting you (i.e., ADHD, dyslexia, dysgraphia, anxiety, or health related impairment)?” The percentage may be high due to the inclusion of anxiety or depression as a hidden disability. However, the statistically significant results regarding membership and reinforcement of needs should be considered as colleges investigate methods and strategies for supporting this population of students as well as those who have visible disabilities.

Overall, in this study, 13% of the students with hidden disabilities reported having received support through an individualized education program or through a 504-accommodation plan during their middle and high school years; 9% of the respondents indicated that he or she was registered with the Office of Disabilities. The percentage of students with disabilities that received support through an IEP or a 504-accommodation plan in middle or high school was 56%. This is a higher percentage than is reported in the literature, where the percentage of students that disclose to the Office of Disabilities on a

college campus may be around 24% of students that received supports during their middle and high school years.

### **Recommendations**

The results of this study raise important questions about the experience of developing a sense of community. The data from this study clearly demonstrates a difference in the feelings of membership, reinforcement of needs, and overall sense of community on a college campus that offers support to incoming freshmen in a program that fosters a sense of community. An important consideration for future research would be to conduct this study at other colleges and universities across the country to get a greater sample of students. The fact that greater numbers of students with disabilities are enrolling at colleges, yet graduating in disproportionately lower numbers than their non-disabled peers is an issue that colleges and universities around the world must address.

Colleges and universities may wish to consider research-based strategies to provide supports through universal design. While this study did indicate that students at the college all experienced a sense of community, the results showed that students with hidden disabilities have a difference in experience of membership within the college community as well as a feeling that their needs are being met by interacting with other members of the community. Finally, the overall sense of community for students with hidden disabilities is less positive than with their non-disabled peers. Are there supports that can be provided or highlighted for students who self-identify as having a hidden disability? If there is a way to provide support to all students, this could lessen the stigma attached to having a hidden disability that often prevents students from identifying their disability to the college upon entry (Daly-Cano et al., 2015). Further research would need

to be conducted to identify what in the lived experience of this population of students contributes to the feelings of a less positive sense of community in the areas of membership, reinforcement of needs, and overall sense of community.

Self-advocacy skills are important for any student at the college level, but particularly for students with disabilities. Post-secondary institutions may wish to investigate how to foster development of those skills during a freshman orientation program. In addition, colleges may want to discuss the development of self-advocacy skills in middle and high school. This may better prepare students to arrive at college with strategies and the confidence to ensure that the individual student's needs are met.

Finally, many colleges and universities have an orientation program that is conducted at the beginning of the semester as a 1-week introduction to the campus and life as a student at the college or university. A final recommendation would be for colleges and universities to develop a way to collect data on sense of community for new students throughout the first year in a program of study at the college or university. By tracking students who are new to the campus, new student orientation staff and student life staff could determine if further supports are needed for groups of students, and an adult could be assigned to reach out to students to provide support. By establishing a connection with students who may be struggling, colleges can increase the chances that students will begin to feel their needs are being met and that they have membership within the community. This could make a difference in persistence and retention for the students.

## **Conclusion**

Studies have linked persistence to integration and integration to a sense of community (McMillan & Chavis, 1986). McMillan and Chavis (1986) theorized that sense of community had four key elements: membership, influence, integration and fulfillment of needs, and shared emotional connection. The relationship that students with disabilities have with the college campus can impact the successful completion rate on campuses across the country (DaDeppo, 2009).

The numbers of students with disabilities enrolling in college has increased dramatically over the past three decades (DaDeppo, 2009). Studies on students with disabilities have reported a range of students pursuing and enrolling in higher education programs. One study indicated that approximately 10% of students on college campuses have disabilities (Herbert et al., 2014). More recently, researchers reported that the number of students with disabilities who attend 4-year colleges may be as high as 26% (Newman et al., 2009). This percentage includes college students with disabilities who openly disclosed and those who chose not to disclose. Colleges have a vested interest to investigate why many of these students may not persist to graduation (Herbert et al., 2014).

The Individuals with Disabilities Education Act of 1990, The Americans with Disabilities Act, and Section 504 of the Rehabilitation Act of 1973 have each had an impact on the increase of students with disabilities enrolling in postsecondary institutions (DaDeppo, 2009). The IDEA requires that the Committee on Special Education, in conjunction with the student, create transition plans in order to prepare the student for college or career. The ADA and Section 504 of the Rehabilitation Act of 1973 require

institutions who receive any federal funding to provide accommodations so students can perform and meet the same academic obligations as their non-disabled peers (DaDeppo, 2009).

Although these acts promote college attendance, disability support services can vary across colleges and universities, in part due to size of staff and breadth and depth of the services offered. This study found that of the students who received special education services during middle and high school, 56% of those students identified themselves to the Office of Disability Services on the college campus. This percentage is high, given other studies have reported that approximately 24% of students with disabilities identify themselves to the Office of Disabilities upon entering college (Daly-Cano et al., 2015).

This study had two guiding questions:

1. Which of the four factors of sense of community do undergraduate students on a small, liberal arts college campus experience?
2. Is there a difference in the sense of community for undergraduate students with and without hidden disabilities?

The results indicate that undergraduate students at this college experienced all four factors of sense of community without great variability between students with hidden disabilities and their non-disabled peers. However, when each factor is separated and a comparison is made between students with hidden disabilities and their non-disabled peers, statistically significant differences are shown. Three areas that had statistically significant power were: reinforcement of needs, membership, and overall sense of community. Students with hidden disabilities continue to indicate that they do not feel that their needs are met by being a member of the community. This could

indicate that while a general sense of community is being fostered, the unique needs of students who are not visibly showing difficulty are, in fact, experiencing a difference in having needs met by being a part of a community. In addition, this population reported that although the sense of community is strong on this college campus, they did not feel membership within the college community. Previous studies have shown that positive social adjustment and, perhaps of even greater importance to college deans, persistence in college can be impacted by whether a student feels academically and socially connected to others in the community (Daly-Cano et al., 2015; Tinto, 1975).

Having data that separates out the four components of sense of community can be helpful for colleges who wish to provide support to students who self-identify as having a hidden disability. Consideration of development of membership within the community, how student needs are being reinforced and met, as well as an overall sense of community, are all areas highlighted from the data in this study as being areas for future research. Students with hidden disabilities are a unique population in that the differences that they may feel may be due to circumstances that are not visible to others. This creates difficulty in the examination of strategies and supports that may be needed to support this population. It will be important to examine the lived experiences of this population of students to develop supports to meet their social, emotional, and academic needs.

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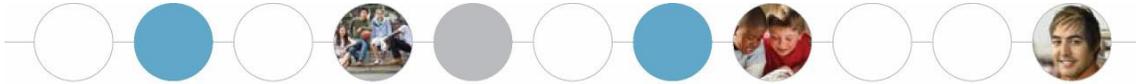
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Appendix A

Survey



**Sense of Community Index 2  
(SCI-2): © Background,  
Instrument, and Scoring  
Instructions**



Community Science  
438 N. Frederick Avenue, Suite 315  
Gaithersburg, MD 20877  
301-519-0722 voice  
301-519-0724 fax  
[www.communityscience.com](http://www.communityscience.com)  
[www.senseofcommunity.com](http://www.senseofcommunity.com)



The Sense of Community Index (SCI) is the most frequently used quantitative measure of sense of community in the social sciences. It has been used in numerous studies covering different cultures in North and South America, Asia, Middle East, as well as many contexts (e.g. urban, suburban, rural, tribal, workplaces, schools, universities, recreational clubs, internet communities, etc.). The SCI is based on a theory of sense of community presented by McMillan and Chavis (1986) that stated that a sense of community was a perception with four elements: membership, influence, meeting needs, and a shared emotional connection.

Results of prior studies have demonstrated that the SCI has been a strong predictor of behaviors (such as participation) and a valid measurement instrument. Nonetheless the SCI has also been subject to criticisms and limitations. The reliability of the overall 12 item scale has been adequate, however it consisted of four subscales whose reliability were inconsistent and generally very low. The SCI had a true-false response set that limited variability and concerned critics. Despite its use with different cultural groups, there were concerns about the adequacy of the SCI as a cross cultural measure. A study of immigrant integration in a western US state, provided the research team the opportunity to revise the SCI in order to address previous concerns. The research team created a 24 item Sense of Community Index version 2 (SCI-2). Unlike the earlier version, it was able to cover all the attributes of a sense of community described in the original theory. A Likert like scale was developed instead of the True-False format. The original draft was piloted with 36 culturally person in seven different settings from Maryland to Hawaii. Strong reliability was found, but there were several suggestions for improvement which were incorporated (i.e., rewording of the statement to increase clarity)

The SCI-2 was revised and used within a larger survey of 1800 people. The analysis of the SCI-2 showed that it is a very reliable measure (coefficient alpha= .94). The subscales also proved to be reliable with coefficient alpha scores of .79 to .86.

Community Science is pleased to share this material with other organizations and individuals free of charge. No changes may be made to the SCI-2, for use in either print or electronic form, without the permission of David Chavis, Ph.D., Community Science, 438 N. Frederick Ave., Suite 315, Gaithersburg, MD 20877; 301-519-0722 (office) or 301-519-0724 (fax) or email [dchavis@communityscience.com](mailto:dchavis@communityscience.com).

Citation for this instrument:

Chavis, D.M., Lee, K.S., & Acosta J.D. (2008). *The Sense of Community (SCI) Revised: The Reliability and Validity of the SCI-2*. Paper presented at the 2<sup>nd</sup> International Community Psychology Conference, Lisboa, Portugal.

## SENSE OF COMMUNITY INDEX II

The following questions about community refer to: [insert community name].

How important is it to you to feel a sense of community with other community members?

1	2	3	4	5	6
Prefer Not to be Part of This Community	Not Important at All	Not Very Important	Somewhat Important	Important	Very Important

**How well do each of the following statements represent how you *feel* about this community?**

		Not at All	Somewhat	Mostly	Completely
<b>1.</b>	I get important needs of mine met because I am part of this community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>2.</b>	Community members and I value the same things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>3.</b>	This community has been successful in getting the needs of its members met.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>4.</b>	Being a member of this community makes me feel good.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>5.</b>	When I have a problem, I can talk about it with members of this community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>6.</b>	People in this community have similar needs, priorities, and goals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>7.</b>	I can trust people in this community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

8.	I can recognize most of the members of this community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	Most community members know me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	This community has symbols and expressions of membership such as clothes, signs, art, architecture, logos, landmarks, and flags that people can recognize.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.	I put a lot of time and effort into being part of this community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.	Being a member of this community is a part of my identity.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.	Fitting into this community is important to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.	This community can influence other communities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.	I care about what other community members think of me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16.	I have influence over what this community is like.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.	If there is a problem in this community, members can get it solved.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.	This community has good leaders.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19.	It is very important to me to be a part of this community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20.	I am with other community members a lot and enjoy being with them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21.	I expect to be a part of this community for a long time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

<b>22.</b> Members of this community have shared important events together, such as holidays, celebrations, or disasters.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>23.</b> I feel hopeful about the future of this community.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<b>24.</b> Members of this community care about each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## **Instructions for Scoring the Revised Sense of Community Index**

### **1. Identifying the Community Referent**

The attached scale was developed to be used in many different types of communities. Be sure to specify the type of community the scale is referring to before administering the scale. Do not use “your community” as the referent.

### **2. Interpreting the Initial Question**

The initial question “How important is it to you to feel a sense of community with other community members?” is a validating question that can be used to help you interpret the results. We have found that total sense of community is correlated with this question – but keep in mind this may not be true in every community.

### **3. Scoring the Scale**

For the 24 questions that comprise the revised Sense of Community Index participants:

**Not at All = 0, Somewhat = 1, Mostly = 2, Completely = 3**

Total Sense of Community Index = Sum of Q1 to Q24

Subscales      Reinforcement of Needs = Q1 + Q2 + Q3 +

Q4 + Q5 + Q6 Membership = Q7 + Q8 + Q9 +

Q10 + Q11 + Q12 Influence = Q13 + Q14 +

Q15 + Q16 + Q17 + Q18

Shared Emotional Connection = Q19 + Q20 + Q21 + Q22 + Q23 + Q24

## **Appendix B**

### **Letter to Undergraduate Student Government Board**

Good afternoon (evening),

My name is Pamina Abkowitz and I am a student in the Doctoral Program for Executive Leadership. One of the program requirements is for me to conduct original research. My area of interest is in colleges' fostering a sense of community on the college campus. I am interested in exploring if your campus community experience influenced your sense of community. I am also interested in exploring if students with hidden disabilities, meaning those that are not visible, have a different experience than students with visible disabilities and those students without disabilities.

I am coming to this body, as you are campus community leaders and I am hoping with your support, to obtain as many responses as possible. I will be sending out an introductory email within the next week and would appreciate if you would both participate as well as encourage others to participate.

Individuals who participate will be contributing to understanding how colleges can foster a sense of community.

Thank you for your time. Are there any questions?