NURSING PROFESSIONALS' ATTITUDES THAT MAY IMPACT DIAGNOSTIC OUTCOMES AMONG PATIENTS WITH DISABILITIES

Louvisia Conley

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NURSING PROFESSIONALS' ATTITUDES THAT MAY IMPACT DIAGNOSTIC OUTCOMES AMONG PATIENTS WITH DISABILITIES

by

Louvisia Conley

A Dissertation
Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Education
Major: Instruction and Curriculum Leadership in Special Education

The University of Memphis
May 2024
ABSTRACT

Louvisia Conley, EdD. The University of Memphis. May 2024. Nursing Professionals' Attitudes That May Impact Diagnostic Outcomes Among Patients with Disabilities. Major Professor: Chrisann Schiro-Geist, Ph.D.

People with disabilities have been identified as representing the largest marginalized group worldwide. A negative attitude towards people with disabilities has been an extended paradigm in American society. Improving the treatment of people with disabilities has led to national policy and legislation changes. However, health inequities continue to be a significant issue faced by people with disabilities. Bourdieu's Theory of Practice provided the theoretical basis for this research. Using the Scale of Attitudes Toward Disabled Persons survey, this quantitative descriptive research aimed to examine factors that may impact attitudinal barriers among three groups, graduate nursing students, current practicing nurses, and retired nurses, when diagnosing physical symptoms of patients with disabilities. The survey results were analyzed by performing statistical tests to determine whether significant differences existed in the attitudes toward persons with disabilities for the groups. The quantitative results have indicated statistically significant differences in the participants’ attitudes. The results of this study may foster positive attitudes among nursing professionals and other healthcare workers and potentially improve medical services for individuals with disabilities.

Keywords: Americans with Disabilities Act, attitudes, disability bias, diagnostic overshadowing, misdiagnosis, nursing education
DEDICATION

I dedicate this dissertation to my family, which has supported me throughout my doctoral journey: my mother, the late Bobbie Dell Conley-Elliott; my father, the late Charlie Henry Conley; my children Nadia and Bryson; my Irish godmother, the late author Peg Hanafin, and my Irish family in Ireland. My children and godmother helped me see that I AM not defined by a ‘dis’ ABILITY, but rather by my capability and possibility for success. I appreciate my children for standing by me through this endeavor. I am humbled by what God has allowed me to achieve for our family. We all share in this accomplishment.
ACKNOWLEDGEMENTS

I first want to thank God Almighty, the head of my life, for allowing me to overcome many challenges and barriers and for giving me the courage not to give up. This dissertation is an example to others that you can achieve your dreams no matter where you come from if you have tenacity, perseverance, and self-determination.

I will always be grateful to my children, Nadia and Bryson. I thank you for believing in me as I sought to accomplish my goal to obtain my doctorate. You always supported and encouraged me to live my best life while embracing my unique "dis" ABILITY.

I want to express my sincere gratitude to Dr. Chrisann Schiro-Geist, my committee chair, for her support. I acknowledge the members of my doctoral committee, Dr. Kay Reeves, Dr. Eli Jones, Dr. Laura Casey, Dr. Patrick Murphy, and my residency supervisor/mentor, Dr. Carolyn Graff. Thank you for sharing your valuable expertise that contributed to the completion of this dissertation.

Thanks to my editor, Dr. Gwendolyn Ward, who has empowered me to see beyond the writing and reach for the lifeline when someone offers a helping hand. I will be forever humbled and grateful that God connected our paths. Dr. Ward, you have been the thread in the fabric that links our lives forever.

Lastly, I give a special thank you to my family and friends. You all believed in my ABILITY to move beyond society's stigmas and walk in my purpose and calling. I am so appreciative of you. I have reached the finish line. I am a winner!
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CHAPTER 1: INTRODUCTION TO THE STUDY

Background of the Study

A negative attitude towards people with disabilities has been an extended paradigm in American society. Over the years, people with disabilities in the United States have endured discriminatory attitudes and practices (VanPuymbrouck et al., 2020). The Americans with Disabilities Act [ADA] of 1990 addressed the inequitable treatment that people with disabilities have endured (ADA National Network, 2017, 2021). The ADA prohibits discrimination against people with disabilities and ensures they receive equal rights and opportunities (ADA.gov, n.d.). Despite the implementation of federal legislation, there is evidence that varying negative attitudes about people with disabilities, whether conscious or unconscious, still exist (Colvin et al., 2020; FitzGerald & Hurst, 2017; Gallegos, 2021). Previous researchers suggested that negative attitudes have contributed to the stigmatization and misdiagnosis of people with disabilities (Fisher & Purcal, 2017). The Council on Quality and Leadership conducted a study in 2020 to analyze the attitudes of over 25,000 healthcare providers toward people with disabilities (Friedman, 2020; VanPuymbrouck et al., 2020). The findings indicated that more than 80% of the healthcare participants harbored implicit discriminatory attitudes that could affect the quality of care provided to people living with disabilities (Friedman, 2020; VanPuymbrouck et al., 2020).

Many researchers have defined the term attitudes. According to Eagly and Chaiken (1993), an attitude is a psychological predisposition of expression based on one's evaluation of an individual with some degree of approval or disapproval. In the Medical Dictionary Online (n.d.), attitude is defined as a learned tendency to behave or react consistently based on what is conceived. Devkota et al. (2017) acknowledged that the attitude of healthcare personnel is
important when considering people with disabilities. The attitudes of healthcare professionals can determine the quality of the services that people with disabilities receive (Devkota et al., 2017; Kritsotakis et al., 2017; Orgera & Artiga, 2018). According to Uysal et al. (2014), hindrances related to accessing health care services are often associated with implicit attitudes. "Attitudinal barriers are experienced by people with disabilities when health care professionals view and treat the disabled as deficient, abnormal, sick, and in need of prevention, correction, and assimilation" (Uysal et al., 2014, p. 2). The World Health Organization [WHO] (2021) reported an increase in people with disabilities.

Millions of adults live with a disability. If formally recognized, people with disabilities would represent the largest minority group in the nation (Cyrus et al., 2018; United States Department of Labor, n.d.). They are also unofficially recognized as the largest minority group in the world. More than a billion people worldwide live with a disability, with 20% having a functional disability that affects their daily activity (Polikandrioti et al., 2020; World Bank Group, 2021; WHO, 2021). The Centers for Disease Control and Prevention [CDC] (2015) reported that in 2013, 53 million or 1 in 5 adults in the United States were disabled as defined by the ADA. By 2018, that number increased by 4% to 61 million or 1 in 4 adults (CDC, 2020c). Of the 61 million adults recognized as disabled, many live with a functional disability (see Table 1).

Table 1

<table>
<thead>
<tr>
<th>Categories of Disability Type</th>
<th>% of Adults</th>
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<tr>
<td>Mobility Impairments</td>
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*Note. Data obtained from the Centers for Disease Control and Prevention (2020c).*
Disability Defined

Disability is recognized as a legal term. The federal government defines disability based on the context in which the term is used and the level of an individual's ability to participate in everyday life situations (Colvin et al., 2020; Tinta et al., 2020; WHO & World Bank, 2011). The ADA defines disability as "a physical or mental impairment that substantially limits one or more major life activities" (ADA National Network, 2021, para. 2; ADA.org, n.d.; Nguyen & Gilbert, 2019). Major life activities include mobility, communication, hearing, vision, caring for one's self, and performing manual tasks, as well as bodily functions related to intelligence, respiratory, circulatory, and reproduction (ADA National Network, 2021). The Social Security Administration defines disability as "the inability to engage in substantial gainful activity due to a medically determinable physical or mental impairment" (Ulrich, 2014, para. 2.). Disabilities vary in limitations and severity and may be identified as early as two years of age (Havercamp et al., 2012; Krahn et al., 2015; Parekh, 2017). For this study, disability, as characterized by the ADA, will be used to define the term.

Problem Statement

Negative biases against individuals with disabilities are prevalent in society. The practice of overlooking prevailing illnesses because of a persons' disability has become a well-documented occurrence (Havercamp et al., 2012). Some nurse professionals do not readily recognize the influence of a person's disability on effectively diagnosing physical symptoms among the patient population with disabilities. Most often, nurses focus on the patient’s disability and miss other critical issues (Blair, 2021). Improving the treatment of people with disabilities has led to national policy and legislation changes, such as the Rehabilitation Act, the

People with disabilities often identify discriminatory attitudes and behaviors when trying to access healthcare. Negative attitudes from health care professionals are the most significant barrier to accessing appropriate care (Desroches, 2020; Desroches et al., 2019; Uysal et al., 2014; VanPuymbrouck et al., 2020). Uysal et al. (2014) stated that when health care professionals maintain negative attitudes about patients with disabilities, it can hinder the quality of care patients receive. Uysal et al. (2014) stated further that nurses' negative attitudes toward patients with disabilities could be perceived as unreceptive, resulting in the patients not receiving the appropriate care. Nurses must learn how to develop and maintain a positive attitude toward people with disabilities early in their nursing education training because they spend more time with patients than other healthcare professionals (American Nurses Association, n.d.; Uysal et al., 2014).

**Purpose of the Study**

Attitudes, whether positive or negative, influence how and why people respond the way they do to others. Kumar (2018) stated that attitudes develop from personal beliefs, experiences, in addition to social and professional influences. Selvamani and Rajan (2017) similarly stated that values come from beliefs and play an essential role in guiding behavior. Attitudes among nursing professionals toward people with disabilities can vary based on many factors (Fisher & Purcal, 2017; VanPuymbrouck et al., 2020). Oliva-Ruiz et al. (2020) recognized the connection between attitudes and behavior because of the cognitive and emotional factors that influence behavior.
Negative attitudes can lead to diagnostic overshadowing. Nash (2013) recognized diagnosis overshadowing as a primary barrier for patients with disabilities. The purpose of this study was to examine factors that may impact attitudinal barriers among nursing professionals and graduate nursing students when diagnosing physical symptoms of patients with disabilities. For this study, nursing professionals include nurses currently working in the field, nursing faculty and educators, retired nurses, and nursing students. The nurses were divided into three groups: graduate nursing students, current practicing nurses, and retired nurses.

**Significance of the Study**

Health inequities are a significant issue faced by people with disabilities in the United States due to various barriers. Although progress has been made towards full inclusion for individuals with disabilities, there remain substantial barriers for individuals accessing appropriate and effective health care (Emerson et al., 2012; Krahn et al., 2015). Sundler et al. (2020) recognized quality health care as a human right. People with disabilities deserve equal treatment and access to the same rights and opportunities as people without disabilities. However, people with disabilities are often characterized by their physical appearance and subjected to misconceptions, negative stereotypes, and assumptions (Agmon et al., 2016; Mahmoudi & Meade, 2015). People with disabilities have been identified as a marginalized group (Agmon et al., 2016; Marks & Sisirak, 2022; Villines, 2021). Equal and equitable access to health care services for people with disabilities still requires attention (Pelleboer-Gunnink et al., 2017).

People living with disabilities comprise a considerable portion of the world’s population. Researchers have identified that people with disabilities make up more than 15% of the population globally (Villines, 2021, para. 2). The WHO (2023) reported 16% of the global
Several studies exist that have examined the attitudes of healthcare professionals toward people with disabilities (Ali et al., 2013; Antonak & Livneh, 2000; Appelgren et al., 2018; FitzGerald & Hurst, 2017; Khan et al., 2015; Kritsotakis et al., 2017; Pelleboer-Gunnink et al., 2017; Satchidanand et al., 2012; Ten Klooster et al., 2009; Tervo & Palmer, 2004; VanPuymbrouck et al., 2020; White & Olson, 2012). However, many of the studies were about health professionals in countries other than the United States. Limited research exists where researchers examine U.S. healthcare providers' attitudes toward adults with disabilities and the effects of those attitudes on the care that patients receive. Developing a better understanding of the attitudes and behavior of nursing professionals toward people with disabilities would allow the medical profession to design viable interventions for healthcare professionals working with patients in this group. Because attitudes are commonly considered a result of learned behavior, implementing best practices in the nursing education curriculum or implementing specific interventions could be effective in changing healthcare professionals and students' attitudes (Shakespeare & Kleine, 2013). The results of this study can be used to foster positive attitudes among nursing professionals and other healthcare workers and improve medical services for individuals with disabilities.

**Definition of Terms**

Definitions were provided to promote clarity and to ensure a common understanding of how the terms were used in context throughout the study (Creswell & Creswell, 2018). The terminologies included the following:

**Americans with Disabilities Act:** a civil rights law that prohibits discrimination based on disability (ADA, 2020).
**Attitudes:** an evaluation, good or bad, of a person that can be based on affective, cognitive, or behavioral information. Attitudes can vary in their strength; meaning, how enduring, how resistant to change, and how predictive of behavior they are (Bizer et al., 2006).

**Diagnostic overshadowing:** occurs when a health professional assumes that a person’s behavior or condition is part of their disability without exploring other factors, such as biological determinants, which stems from cognitive bias (Blair, 2021; Joint Commission, 2022).

**Disability:** a physical or mental condition that limits a person's movements, senses, or activities; an impairment especially one imposed or recognized by the law (CDC, 2020c).

**Individuals with Disabilities Education Act:** a law that makes available a free appropriate public education to eligible children with disabilities throughout the nation and ensures special education and related services through high school graduation or until age 21 (United States Department of Education, n.d.).

**Nursing education:** refers to formal learning (theoretical and practical training) in the science of nursing to prepare students for the functions and duties of caring for patients as nursing care professionals.

**Research Questions and Null Hypotheses**

The nursing profession receives training on how to assess their patients’ physical symptoms. Attitudes have a direct impact on the quality of health care nurses provide. Negative attitudes can cause patient care to be compromised (Fisher & Purcal, 2017). Also, inadequate training for nurses in caring for persons with disabilities can lead to misdiagnosis and other health inequalities (Appelgren et al., 2018; Javaid et al., 2019). In this study, the researcher explored the attitudes of graduate nursing students, current practicing nurses, and retired nurses.
toward persons with disabilities, as well as the degree to which the practice of diagnostic overshadowing occurs when assessing the physical symptoms of patients with disabilities.

Variables

Variables describe attributes that can be measured. An independent variable (predictor variable) pinpoints the expected cause, whereas the dependent variable (outcome variable) defines the expected effect (Bhandari, 2022; Creswell & Creswell, 2018). Descriptive studies only describe the current state of a variable by answering the what instead of the why. Consequently, there are no presumed causes or effects and no independent and dependent variables to be manipulated (McCombes, 2022; Waliuya, 2021). Comparative research questions can be used to examine differences between at least two groups and a single dependent variable (Barroga & Matanguihan, 2022). The researcher aimed to examine factors that may impact attitudinal barriers among three groups, graduate nursing students, current practicing nurses, and retired nurses when diagnosing physical symptoms of patients with disabilities.

Comparative research questions allow the researcher to identify clear differences between two or more groups based on one or more variables (McCombes, 2022). This study used two comparative research questions to quantify the difference between nursing professionals' and nursing students' attitudes and understanding of diagnostic overshadowing. The research questions aligned with the study purpose. The variables were attitudes and understanding of occurrences of diagnostic overshadowing, and the nonrandomized groups were nurses.

The research questions were as follows:

**RQ 1:** Is there a difference in attitudes toward people with disabilities among graduate nursing students, current practicing nurses, and retired nurses?
**H0₁:** There are no statistically significant differences in attitudes toward people with disabilities among graduate nursing students, current practicing nurses, and retired nurses.

**RQ 2:** Is there a difference in understanding about occurrences of diagnostic overshadowing among graduate nursing students, current practicing nurses, and retired nurses?

**H0²:** There are no statistically significant differences in understanding about occurrences of diagnostic overshadowing among graduate nursing students, current practicing nurses, and retired nurses.

### Assumptions and Limitations of the Study

#### Assumptions

Assumptions are common in research and developed by someone conducting the study. Simon (2011) stated assumptions emphasize aspects of a study that the readers presume to be plausible (Simon, 2011). Leedy and Ormrod (2010), as cited in Simon (2011), believed that “assumptions are so basic that, without them, the research problem itself could not exist” (p. 62). Similarly, Simon (2011) stated that assumptions form the basis for the research and, thereby, are necessary to add validity to the study. The researcher assumed that all the participants willingly volunteered to take part in the study without coercion. Each respondent had to consent to participate in the study in order to move forward to begin the survey. Prospective participants that did not want to participate in the study had the option to decline.

It was also assumed that each person accessed the survey in Qualtrics individually as intended. The survey was designed to be completed by one participant at a time. The individual results may be viewed in the Data & Analysis section in Qualtrics. In the informed consent document, participants were notified that no identifiable information would be collected when completing the online survey and that the Qualtrics security options would be set to anonymize
the responses. Therefore, another assumption was that the assurance of anonymity guided the
nursing professionals and graduate nursing students to answer the survey questions honestly
without fear of retribution. Lastly, the researcher assumed that the participants carefully
considered their answers on the survey and that the responses accurately reflected each person's
genuine attitude toward people with disabilities.

Limitations

This study contained limitations that may have affected the results. Simon and Goes
(2013) maintained that limitations are potential weaknesses in a study that is mostly out of the
researcher’s control. The researcher used snowball sampling to recruit nurses and nursing
students. For this sampling technique, a limitation is that “there is no way to know the total size
of the target population” (Moss, 2019, para. 2). The researcher extended an invitation to over 40
organizations and institutions. The non-randomness of the exponential, non-discriminative
snowball sampling method prevented generalizing the results beyond the sample studied (Heath,
2023). Another limitation was that there was no evidence to support that the nursing
professionals who participated in the study were representative of all nurses and nursing students
locally, nationally, or internationally. Therefore, as stated, the results may be difficult to
generalize beyond the sample studied.

Summary

Chapter 1 covered the background of the study, the problem statement, the purpose of the
study, the theoretical framework, the research questions, the limitations of the study, the
significance of the study, and the definition of terms. Two comparative research questions were
used to examine attitudes toward disabled persons. Research has shown that the attitudes of
healthcare providers can affect the quality of care patients receive. This is particularly important
for nursing professionals caring for individuals with disabilities. However, there is evidence that some healthcare providers overlook existing health conditions in people with disabilities. Despite federal laws, negative attitudes toward people with disabilities persist (Colvin et al., 2020; Havercamp et al., 2012). Having a negative attitude can result in diagnostic overshadowing, which is a significant obstacle for patients with disabilities, according to Nash (2013). The researcher examined factors contributing to attitudinal barriers among nursing professionals and graduate nursing students when diagnosing physical symptoms in patients with disabilities. The research focused on three categories of nursing professionals: graduate nursing students, current practicing nurses, and retired nurses.

CHAPTER 2: LITERATURE REVIEW

This literature review provides a conceptual basis for examining factors that may impact attitudinal barriers among nurse professionals and nursing school students when diagnosing physical symptoms among patients with disabilities. A systematic search of the literature was conducted using the following keywords and phrases: disability, barriers to healthcare, diagnostic overshadowing, attitude, disability bias, health inequality, and nursing training.

Due to an aging population, almost everyone will eventually experience impairment. Kirschner and Curry (2009) stated that "Disability is a universal experience that affects nearly everyone without exception at some time in their lives" (p. 1334). The health of people with disabilities has been a long-standing concern; however, only recently has it been cast within the framework of health disparities and inequities (Krahn & Fox, 2014). Similarly, Krahn et al. (2015) pointed out that people with disabilities have gone unrecognized as a population for public health attention, but the inequities of this population have now become visible (p. 198).
Historical Perspective About Disabilities

Disability is a concept that has been misunderstood for centuries. Misinformed and confused thinking contributed to persons with disabilities being subjected to inhumane treatment, such as sterilization and institutionalization (Krahm et al., 2015; Marini et al., 2017). During the Middle Ages, disability was often blamed on the individual and associated with religious punishment or family history (Smeltzer et al., 2017). Smeltzer et al. (2017) stated:

In the medieval era, disability was considered a punishment from God for one’s sin or misbehavior or that of one’s ancestors. Others, over the centuries, have viewed disability as the work of the devil. Disability was seen as an individual’s failure, deformity, or defect. As a result of the myths about disability, people with disabilities were feared and often shunned, abused, or condemned. (para. 2)

Family members with visible or severe disabilities were often kept at home in isolation. Society had labeled persons with disabilities as different and considered them sick and unhealthy and, therefore, kept them from public view. These persons were considered a burden on families and society.

The 1800s presented health, social, and political implications. Many of the early policies did not address the societal fears, neglect, superstition, prejudice, and ignorance that served as barriers to persons with disabilities contributing fully to society or obtaining the proper care and services needed (Marini et al., 2017; Munyi, 2012). The Immigration Act of 1882 prohibited persons considered undesirable from entering the United States. The federal legislation denied entry to “lunatic, idiot or any person unable to take care of himself or herself without becoming a public charge” (Baynton, 2001, p. 45). The reformed Immigration Act of 1907 was even more
exclusive and denied entry for anyone judged “mentally or physically defective...which may affect the ability of such alien to earn a living” (Baynton, 2001, p. 45).

Persons with disabilities have been subjected to inhumane treatment for decades. Marini et al. (2017) pointed out that historically, “people with disabilities were treated as a minority group without equal rights or opportunities” (p. 20). In the past, the harsh treatment of disabled people drastically reduced their life expectancy. During the early 1900s, states had laws that ostracized persons who were considered “hereditarily unfit” (Marini et al., 2017, p. 10). Connecticut became the first state to prohibit people with visible disabilities from marrying or experiencing intimate cohabitation to protect society from inheriting physical and mental disabilities. The list was expanded to include certain criminal offenses. The penalty for breaking the law carried a 3-year minimum sentence.

Additionally, between 1903 and 1905, Kansas, New Jersey, Ohio, Michigan, and Indiana soon passed laws similar to Connecticut. Throughout the 1900s, public support for isolating persons with disabilities and criminals grew, “which soon expanded into sterilization” (Marini et al., 2017, p. 10). The 1911 Chicago Municipal Code Ordinance stated:

No person who is diseased, maimed, mutilated, or in any way deformed so as to be an unsightly or disgusting object or improper person be allowed in or on the public ways or other public places in this city, or shall therein or thereon expose himself to public view… (Coco, 2010, p. 23)

Coco (2010) noted that the initial ordinance dated back to 1888 and was not repealed until 1973.

During the 1920s and 30s, Congress passed laws creating provisions for integrating injured war veterans into the workplace. However, Coco (2010) pointed out that widespread changes did not occur for disabled veterans until the 1960s (para. 5). Additionally, during the late
20th century, persons with disabilities were often treated like charity cases and considered mistakes or accidents of nature. Many had to rely on charitable organizations or resort to living on the streets and panhandling to survive (Faville, n.d.; Munyi, 2012). Up until the mid-1940s, individuals with disabilities were devalued and subjected to inhumane treatment. Awareness about the rights of the disabled population occurred approximately throughout the 1970s into the 1990s.

From a historical perspective, legislative and societal changes over the years have improved the treatment of persons with disabilities and access to health care. From the Mental Retardation Facilities and Community Mental Health Centers Construction Act of 1963 to the Americans with Disabilities Act of 1990, policymakers have attempted to establish the rights of persons with disabilities to be able to participate fully in society. Smeltzer et al. (2017) noted that attitudes toward these individuals have changed significantly. Positive attitudes toward individuals with disabilities promote social inclusion, contributing to a flourishing society (Babik & Gardner, 2021). However, past beliefs can influence current practices. Negative views about disabled people’s ability to care for themselves and experience a quality life remain prevalent.

**Theoretical Framework**

Bourdieu's Theory of Practice provided the basis for this research. Bourdieu (1990) conceptualized social behavior on how people relate to one another in groups as individuals. The theorist posited that the propensities of society persuade people to act a certain way or make particular choices. Bourdieu recognized that family tradition, values, and societal influences affect social behavior (Oerther & Oerther, 2018).

Field, habitus, and cultural capital form the contextual basis for Bourdieu's theory. Bourdieu posited that human behavior is structured within fields. The concept of field is defined
as "a field of forces where the participants occupy positions that statistically determine the positions, they take within the field...." (Bourdieu, 1995, p. 39). Bourdieu (1990) asserted that power relations within and between the field structures human behavior. Habitus describes the underlying ideas of social life that determine how we behave or interact with others. According to Oerther and Oerther (2018), all people in varying degrees are a product of their past and act unconsciously within the established cultural capital from their background. Meaning, people respond unconsciously to the options or the field they consider available to them (Souza & Silvino, 2018). Bourdieu's Theory of Practice reinforced the notion that people are products of the social norms and cultural capital presented to them during childhood that defines their thinking (Sapiro, 2015).

Bourdieu's theory can be used to explain the dynamics between nurses and their patients. Rhynas (2005) contended that Bourdieu's approach could be used in research to understand nurses' interactions and best practices related to patients living with a disability. Bourdieu’s work provided insight into how diagnostic overshadowing can occur when nurse professionals allow negative attitudes and bias behavior from their past to interfere with their assessment for treatment of patients with disabilities. Oerther and Oerther (2018) pointed out that nurses should use intuitive knowledge to support patients as they work to understand their experiences living with disability and illness. Considering the factors that influence the situation, to include the patients' perceptions, emotions, and desires about their health care can strengthen nurses’ best practices.

Bourdieu’s theory identifies patterns of social behavior. Rhynas (2005) stated that Bourdieu's Theory of Practice provides a foundation for understanding the actions of groups in the social world. Often, their actions are influenced by “cultures, traditions, and organizational
structures” (Rhynas, 2005, p. 181). Bourdieu focused the theoretical concepts on eliminating the dichotomy of objectivity and subjectivity, which is vital for establishing a collaborative relationship between nurses and patients based on the patients’ experiential knowledge (Oerther & Oerther, 2018).

**Nurses Training**

Nursing has the most healthcare professionals in the nation. The nursing profession comprise a workforce of almost 4 million (Haddad et al., 2020). Nurses provide a wide range of patient care and support depending on the level of education and licensure. As part of their baseline training, nurses receive instruction on how to assess and diagnose their patients' physical symptoms. Despite the number of individuals in the U.S. living with a disability, most nursing programs do not adequately prepare students to provide treatment to meet the health needs of this group (Appelgren et al., 2018). Trollor et al. (2016) found that nursing programs vary in their training, curriculum, and exposing students to patients with disabilities. Devkota et al. (2017) recognized that although some nursing programs incorporate disability concerns in nursing school training, improving attitude and skills in disability care is still not recognized as a priority (p. 3). Similarly, Storms et al. (2017) found that healthcare professionals often feel inexperienced when addressing the unmet needs of people with disabilities (p. 368).

Sometimes patients with disabilities do not receive an accurate diagnosis that affects the quality of health care nurses provide. Appelgren et al. (2018) pointed out that the educational preparation of nurses to provide care for persons with disabilities is a topic that needs more research. The author stated further that understanding the nurses’ experiences with providing care, particularly for persons with intellectual disabilities, is essential for developing knowledge across the healthcare profession. Hezaveh et al. (2013) indicated that a disconnect exists in the
nursing education system between the nursing curriculum and the nurses' clinical experiences that interfere with students providing quality health care services early in their careers. Shakespeare and Kleine (2013) cited time and clinical overload as the primary obstacles for nursing programs limiting instruction about disability.

Civil rights protections to individuals with disabilities present underlying problems. According to the National Council on Disability [NCD] (2009), the ADA has had a “limited impact” on improving the quality of health care services offered to people with disabilities (para. 1). The NCD (2021) maintained that the level of care delivered by health professionals to persons with disabilities has created a “national disaster” (para. 3). The organization contributes the suboptimal health care of providers to the lack of competent training practitioners receive in medical schools. Health professionals need adequate training to provide appropriate and effective care to persons with disabilities (Ali et al., 2013; NCD, 2021). Havercamp et al. (2012) suggested that improving the knowledge, skills, and attitudes of nurses and other healthcare professionals is the key to improving the quality of care that persons with disabilities receive.

Negative attitudes held by nurses about patients with disabilities can cause patient care to be compromised (Fisher & Purcal, 2017; Lam et al., 2010). These attitudes and misconceptions are usually not openly hostile, but they may result in patients with disabilities not receiving indicated preventive care (Uysal et al., 2014, p. 1). According to Balogh et al. (2015), inaccurate or delayed diagnoses persist in different facets of the healthcare system and sometimes resulting in harmful consequences. Ten Klooster et al. (2009) measured the attitudes of nursing students toward people with disabilities and non-nursing peers. Regarding the study results of people with disabilities, the authors found that the nursing students’ attitudes were more positive toward physically disabled people than those intellectually disabled. However, the authors recognized
that more research needs to be conducted about attitudes of nursing students and factors influencing these attitudes (Ten Klooster et al., 2009).

Disability training for health care professionals has been identified as an important component of attaining quality healthcare for the disabled community. Rotenberg et al. (2021) recognized that a lack of knowledge, stigmatization, and negative attitudes act as barriers to health care professionals providing high standards of care for people with disabilities. The authors acknowledged that proper training about disabilities is needed to dispel the negativism of healthcare workers toward people with disabilities. Similarly, VanPuymbrouck et al. (2020) found that healthcare professionals' discriminatory attitudes can contribute to unequal health care and the marginalization of people with disabilities. In their research, Lee et al. (2023) examined the extent to which medical programs included disability training in their curriculum. The researchers believed that healthcare workers' lack of knowledge about the experiences and needs of the disability community contributed to healthcare disparities experienced by people with disabilities. In addition, the amount of disability competency training offered varied across programs, with most healthcare workers having limited opportunities to gain an in-depth understanding of disability. Lee et al. found that most nursing schools provided some engagement with people with disabilities but with limited exposure. The most significant barrier to integrating more training activities was a lack of time in the curriculum.

Proper training plays an essential role in nurses developing good health care practices. According to the Joint Commission's report (2022), several studies have highlighted the need for healthcare providers to improve nurses’ training in caring for adults with disabilities. Developing adequate knowledge, skills and attitudes of nursing students should be an integral part of the nursing curriculum (Havercamp et al., 2012). Smeltzer et al. (2017) stated that “an important
strategy to improve the health care of people with disabilities is to integrate the topic of disability into the education of health care professionals, including nursing” (p. 3). Likewise, Shakespeare and Kleine (2013) maintained that nurses’ access to continued educational training can improve the quality of care, create trust, and build rapport in communicating and understanding patients with disabilities.

**Diagnostic Overshadowing**

Biases and discriminatory attitudes can influence patient care. Northway et al. (2017) asserted that people with disabilities are often exposed to significant health inequities and may experience a range of barriers when seeking to access healthcare. Therefore, people with disabilities may be subject to diagnostic overshadowing. Jones et al. (2008) pointed out that the term, which was introduced in 1982, referred to the tendency for clinicians to attribute symptoms or behaviors of a person with learning disability to their underlying cognitive deficits. The term has since evolved to describe when undiagnosed ailments are attributed to preexisting physical conditions (Hallyburton, 2022; Iezzoni, 2019). Therefore, diagnostic overshadowing occurs when physical or mental symptoms are wrongly attributed to an individual’s disability which can affect diagnosis and treatment (Ali et al., 2013; Hallyburton, 2022; Neurotrauma Law Nexus, 2020).

Diagnostic overshadowing is a distinct phenomenon that can reflect nurses’ attitudes. Blair (2021) described diagnostic overshadowing as "once a diagnosis is made of a major condition, there is a tendency to attribute all other problems to that diagnosis, thereby leaving other co-existing conditions undiagnosed" (para. 1). Diagnostic overshadowing can lead to inadequate medical treatment causing critical health issues to be overlooked (ANA Center for Ethics and Human Rights, 2019; Javaid et al., 2019; NCD, 2021; Rader, 2022). Nurses with
limited experience caring for people with disabilities may incorrectly assign symptoms of a physical condition to the disability (Appelgren et al., 2018; Blair, 2021).

As displayed in Figure 1, the integrative model provides a conceptual framework for understanding factors influencing nurses’ attitudes of disability perception and diagnostic overshadowing. Diagnostic overshadowing stems from biases. According to Bourdieu’s theory, biases can be innate and acquired from one’s environment and societal influences (Blair, 2021). The conceptual framework was developed by the researcher who proposed that negative attitudes toward disability produces a range of multi-dimensional factors encompassing negative outcomes.

**Figure 1**

*Diagnostic Overshadowing Conceptual Framework*

*Note.* Developed by L. Conley, 2019, *Diagnostic overshadowing process flowchart*, The University of Memphis.
Gaslighting, similar to diagnostic overshadowing, is another phenomenon established in social inequities (Moyer, 2022). White (2020) stated that gaslighting takes on different forms where individuals or groups are subjected to psychological power struggles that cause them to doubt their perception of reality (para. 1). Diagnostic overshadowing entails healthcare professionals dismissing patients’ symptoms based on past medical history usually related to a disability (Blair, 2021). For medical gaslighting, healthcare professionals deliberately deny the facts that a physical problem exists and work to convince a patient that their symptoms are unfounded or even imagined (Moyer, 2022). Medical gaslighting differs from diagnostic overshadowing in that it usually involves an imbalance of power (Sweet, 2019; White, 2020).

**Misdiagnosis**

Medical errors pose a significant challenge in the healthcare industry, particularly when it comes to diagnostic errors. According to researchers, diagnostic overshadowing is a phenomenon that can result in misdiagnosis (Nash, 2013; Shefer et al., 2014). *Misdiagnosis* is a common diagnostic error that occurs when a patient is wrongly diagnosed with a medical condition or illness (Torrey, 2020). This can have devastating consequences for the patient’s health, as they may receive incorrect treatment or unnecessary medication. In 2011, diagnostic errors were responsible for around 10% of adverse events that occurred in hospitals (Neale et al., 2011). A recent study conducted by The Agency for Healthcare Research and Quality found that as many as 250,000 patients in the U.S. die each year due to diagnostic errors, while another 370,000 suffer serious harm (Abelson, 2022; Kounang, 2022). Therefore, it is crucial to improve diagnostic mechanisms and develop a culture of safety to minimize and prevent such errors from happening.
Barriers to Health Care

Almost all people, at times, face difficulties in their daily life. However, people with disabilities incur barriers more often and are undeservedly affected (CDC, 2020d). Barriers prevent people with disabilities from accessing optimal health care and from fully integrating into society. The WHO explained that barriers are the influences in a person's environment that limit accessibility and impede their capacity to function (Ali et al., 2013; Baghdayan, n.d.; CDC, 2020d). Ali et al. (2013) conducted a study to determine if, or to the extent, people with disabilities incurred barriers to healthcare. Their findings revealed that the disabled population experienced implicit and explicit biases from healthcare professionals. Gallegos (2021) stated that “Explicit and implicit discriminatory bias within the health care professions represent an insidious virus against which people with disabilities have been fighting for decades” (para. 9).

Barriers are associated with disability bias and hinder persons with disabilities from accessing their rights. Barriers continue to perpetuate in society and include policies, disability biases, physical obstacles, and services that hinder functioning. Researchers identify three primary categories of barriers: (a) institutional, (b) environmental, and (c) attitudinal (Rohwerder, 2015; Waliuya, 2021). Institutional barriers are policies or procedures designed to discriminate, put at a disadvantage, or marginalize certain groups of people (Rohwerder, 2015; Waliuya, 2021). Environmental barriers include physical constraints that limit persons with disabilities from participation (Rohwerder, 2015; Waliuya, 2021). Attitudinal barriers involve how persons with disabilities are perceived (Rohwerder, 2015; Waliuya, 2021). Attitudinal barriers continue to perpetuate society through misconceptions and assumptions (Uysal et al., 2014).
While Fisher and Purcal (2017) asserted that negative attitudes toward people with disabilities are a major barrier to the delivery of quality health care, Advancing Care Excellence for Persons with Disabilities (2021) considered the failure of healthcare professionals to communicate effectively and appropriately with people with disabilities as a major barrier. Berkman et al. (2011) stated that “Limited health literacy increases barriers to receiving adequate health care and, at times, results in poor health outcomes” (p. 1). Health literacy refers to how information about health is obtained and understood so that appropriate decisions about care can be made (Mantwill et al., 2015; Nguyen & Gilbert, 2019). Many healthcare professionals assume people with disabilities lack the health literacy to communicate effectively about their disability and illness (Storms et al., 2017). Collyer et al. (2017) emphasized that a hierarchy of power operates within the healthcare field, which determines the forms of knowledge that are acceptable.

Building on Bourdieu’s Theory of Practice, a collaborative relationship between nurses and patients with disabilities depends on the cultural health capital that both possess. Dubbin et al. (2013) determined that cultural resources have varying values and can facilitate or impede communication between patients and healthcare professionals. While health literacy among people with disabilities appears inadequate, the findings of Berkman et al. (2011) do not support the notion that individuals with disabilities experience health literacy difficulties and are not statistically different compared with individuals without disabilities. Physical and cognitive disabilities are generally linked, but there are distinct differences. It is worth mentioning that Berkman et al. (2011) conducted a study using a representative population of participants with varying disabilities rather than tailor the research to a particular disability. Mantwill et al. (2015) acknowledged that a connection exists between health literacy and health disparity.
Health disparities exist due to discrimination and environmental disadvantage (Krahn & Fox, 2014). Whitehead (1992) stated, "Inequality in health care is a term commonly used to indicate systemic differences; however, some use the term to convey unequal access to services” (p. 5). In addition, the term relates to a subset of health inequalities, modifiable but still associated with social disadvantages related to ethical justice. The inequalities are considered among the scope of health, extended beyond medical care, including health promotion and the multiple social determinants that influence a wide range of health outcomes and risks (Krahn et al., 2015).

Social determinants describe the conditions in the places where people, live, learn, work, or play, to name a few, that affect the quality-of-life (CDC, 2021; Healthy People 2030, n.d.). When measuring health disparities in the context of disability, there is also a need, conceptually or statistically, to avoid including unavoidable differences (Krahn & Fox, 2014). According to Krahn and Fox (2014) and Krahn et al. (2015), disparities show that people with disabilities have a higher rate of developing chronic illnesses, as indicated in the cascade of disparities (see Figure 2). Adverse health conditions put the well-being of people with disabilities at greater risk. The cascading differences show the increased outcome of poorer health observed by people with disabilities. To better address the health disparities that people with disabilities experience, an accurate assessment of health literacy, to include patient knowledge and experiences, need to be researched (Hollar & Rowland, 2015).
**Figure 2**

*Cascade of Disparities*

**Note:** "Cascade of Disparities" leading to poor health outcomes in adults with disabilities (Krahn & Fox, 2014).

**Summary**

In Chapter 2, the researcher examined the historical perspective of disability, nurses' training, and barriers to health to compile the literature review. The purpose of the study was to examine factors that may impact attitudinal barriers among nursing professionals and graduate nursing students when diagnosing the physical symptoms of patients with disabilities. The information provided a better understanding of nurses' attitudes toward disability and its impact on diagnostic overshadowing.

Historically, persons with disabilities have experienced stigma and discrimination in all aspects of life. How disability is perceived is a significant factor that impacts the overall well-being of persons with disabilities and society's ethical standards. Bourdieu's Theory of Practice provided the foundation for this research. Considering Bourdieu's theory, the underlying factors
of attitudes in society determine how others behave toward or interact with individuals with disabilities. Social constructs and ways of thinking shape society's views and treatment of people with disabilities. Negative beliefs about disabilities can make individuals feel devalued, powerless, and excluded from social circles (Babik & Gardner, 2021). Many legislative and societal changes have occurred which have had a great influence on the treatment of and attitudes toward people with disabilities. In Chapter 3, the researcher provided an overview of the methodology.

**CHAPTER 3: METHODOLOGY**

For this study, the researcher examined factors that may impact attitudinal barriers among nursing professionals when diagnosing the physical symptoms of patients with disabilities. The research literature indicated that nurses’ attitudes and misconceptions could be potential barriers to providing successful diagnosis and treatment (ANA Center for Ethics and Human Rights, 2019). In this chapter, the researcher presented the plan used to conduct the research, including a description of the research design, instrument, recruiting study participants, and data collection and analysis.

Permission was obtained from The University of Memphis Institutional Review Board (IRB) to collect data relevant to the research (see Appendix A). The IRB approval number is #PRO-FY2023-270. After receiving approval from the IRB, the researcher established contact with potential nurse professionals and graduate nursing students through convenience sampling. A recruitment flyer was placed on public message boards and forwarded to directors of nursing at local community health buildings (see Appendix B). The flyer contained a QR code linked to a recruitment invitation letter in Qualtrics (see Appendix C). Through the Qualtrics link, interested subjects continued to the online informed consent document and data collection questionnaire.
The research procedures approved by the IRB were followed to ensure the participants were protected. Those who expressed interest in participating in the study provided their consent. Through the informed consent process, participants were notified about the details of the study, including potential risks, even though only minimal risks were noted (see Appendix D). All participants’ responses were used only for this academic research. Any information obtained through this study remained confidential. Using an alphanumeric coding system developed and known only to the research investigator protected the participants responses. All data collected were stored on a laptop that was password-protected and used anti-virus software. Data were backed up on an external hard drive with encryption capabilities and kept at the research investigator’s home in a file drawer that could be locked.

**Research Design and Rationale**

A quantitative research method was used to examine the attitudes of nursing professionals and graduate nursing students about people with disabilities. Quantitative methods emphasize collecting and analyzing numerical data to understand social trends or phenomena (Ahmad et al., 2019; Bhandari, 2020; Creswell & Creswell, 2018). A quantitative descriptive research design was the type of method utilized in this study. The method allows the researcher to determine a population's or particular phenomenon's characteristics. Descriptive research describes the differences between groups without manipulating the variable. Similarly, McCombes (2022) stated that a descriptive design is non-experimental, with no independent and dependent variables to be controlled or manipulated by the researcher. The variables are measured systematically using numerical terms to allow the researcher to explore and gather data regarding the characteristics of people and groups (Grove & Gray, 2018). The descriptive research approach was appropriate for bringing awareness to diagnostic overshadowing, which
first required measuring nursing professionals' and students' attitudes toward people with disabilities.

**Participants and Sampling**

The research focused on nurses’ and nursing students’ attitudes toward people with disabilities. Using snowball sampling, graduate nursing students, current practicing nurses, and retired nurses were invited to participate in the study. Snowball sampling is a nonprobability sampling method where participants are recruited through a referral process. For nonprobability sampling, non-random criteria are used when selecting participants, and not every member of the population has a chance of being included (QuestionPro, 2021a, para. 2). Moss (2019) recognized that the snowball sampling method has advantages and disadvantages. Participants were initially selected based on availability, voluntary response, and similar characteristics. According to QuestionPro (2021a), “non-probability sampling techniques are a more conducive and practical method for researchers deploying surveys in the real world” (para. 10).

**Recruitment strategy**

Dusek et al. (2015) noticed a steady decline in survey response rates. Because of the decrease in survey responses, Dusek et al. recognized snowball sampling as a viable method to recruit study participants. Snowball sampling is used where researchers have limited access to potential study subjects. For this sampling method, researchers initially contact and recruit a small number of study subjects (Parker et al., 2019). The existing study subjects are asked to recruit other eligible participants from among their acquaintances. The process continues to *snowball* until the target sample is reached. Leighton et al. (2021) used snowball sampling to recruit nursing students to participate in a research study survey. During Leighton et al.’s (2021) data collection process, the COVID-19 pandemic changed healthcare education, moving many
students to study remotely. Therefore, the authors switched sampling methods to reach nursing students who had shifted to online learning. The authors found that the snowball sampling method was more effective than multisite face-to-face data collection, which required IRB approval for each site and influenced the intensity of the recruitment efforts.

The eligibility criteria to participate in this study included: (a) be a current practicing or retired nursing professional or a graduate nursing student, and (b) be at least 20 years of age. Qualtrics and email initiated by the participant were the primary sources of communication with the subjects. The recruitment strategy consisted of convenience and snowball sampling. The researcher recruited initial subjects by placing recruitment flyers on public message boards of local community health buildings or in places frequented by nurses and nursing students (convenience sampling). The flyer contained a QR code that linked to the recruitment invitation letter in Qualtrics. The agreed recruits were asked to forward the flyer with the QR code or the link to the recruitment letter to their colleagues and acquaintances (snowball sampling). The initial subjects and others interested in obtaining more information about the study were directed to scan the QR code in the flyer to access the invitation letter and continue to the informed consent document. The informed consent contained information about the research topic, the potential risks and benefits of participation, the data collection method, and the researcher’s contact information.

The process of participants proceeding through the Qualtrics link in the invitation letter to the informed consent document provided interested recruits the opportunity to consent to participate. Clicking the appropriate link in the informed consent document directed participants to the Scale of Attitudes Toward Disabled Persons (SADP) survey and demographic questions. Steps to protect participants from harm included maintaining the confidentiality of the data. To
maintain the privacy of the participants’ identity, the Qualtrics security options were set to anonymize the responses. Therefore, no identifiable information was collected from participants when completing the online questionnaire.

**Discussion of the Sample Obtained**

An exponential, non-discriminative snowball sampling of professional nurses (current practicing and retired) and graduate nursing students were recruited to participate in the study. For this type of snowball sampling, participants were obtained through multiple referrals. Each referred participant had a fair chance to volunteer to participate in the study and to complete the survey. Nursing professionals and graduate nursing students were selected as the sample because of their capacity to provide relevant responses to the survey to examine factors that may impact attitudinal barriers when diagnosing physical symptoms of patients with disabilities.

Responses to the demographic questions were collected from 101 participants. Descriptive analyses to measure frequencies for the demographics data were calculated. The results obtained from calculating the descriptive statistics as shown in Table 2 indicated that practicing nurses constituted the highest number of respondents (47 or 46.7%), followed by 31 graduate nursing students (30.7%) and 21 retired nurses (20.8%).

**Table 2**

*Descriptive Statistics of Employment Status*

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate nursing student</td>
<td>31</td>
<td>30.7</td>
</tr>
<tr>
<td>Current practicing nurse</td>
<td>47</td>
<td>46.5</td>
</tr>
<tr>
<td>Retired nurse</td>
<td>21</td>
<td>20.8</td>
</tr>
<tr>
<td>Missing System</td>
<td>2</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Of the 101 participants, 43 had 20 or more years in the profession (42.6%), 22 had 1-5 years (21.8%), 19 had 6-10 years (18.8%), and 15 with 11-19 years (14.9%) (see Table 3).
Table 3

<table>
<thead>
<tr>
<th>Years in the Profession</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 Years</td>
<td>22</td>
<td>21.8</td>
</tr>
<tr>
<td>6-10 years</td>
<td>19</td>
<td>18.8</td>
</tr>
<tr>
<td>11-19 years</td>
<td>15</td>
<td>14.9</td>
</tr>
<tr>
<td>20 or more</td>
<td>43</td>
<td>42.6</td>
</tr>
<tr>
<td>Missing System</td>
<td>2</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Table 4 shows that many of the respondents were registered nurses (29 or 28.7%), 23 were graduate nursing students (22.8%), and 19 held other positions (18.8%). There were an even number of nurse practitioner and manager/faculty positions. Both were 15 or 14.9%.

Table 4

<table>
<thead>
<tr>
<th>Highest Position Attained</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate nursing student</td>
<td>23</td>
<td>22.8</td>
</tr>
<tr>
<td>Registered nurse</td>
<td>29</td>
<td>28.7</td>
</tr>
<tr>
<td>Nurse practitioner</td>
<td>15</td>
<td>14.9</td>
</tr>
<tr>
<td>Nurse manager and faculty</td>
<td>15</td>
<td>14.9</td>
</tr>
<tr>
<td>Other</td>
<td>19</td>
<td>18.8</td>
</tr>
</tbody>
</table>

Over half of the respondents, 58 reported working in a hospital/medical clinic setting (57.4%), 18 worked in education (17.8%), 17 in residential/home care (16.8%), 7 in a physician’s office (6.9%), and one person who worked in a setting other than those used in the study (1.0%) (see Table 5).

Table 5

<table>
<thead>
<tr>
<th>Primary Setting Worked</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital / Medical Clinic</td>
<td>58</td>
<td>57.4</td>
</tr>
<tr>
<td>Residential / Home Care</td>
<td>17</td>
<td>16.8</td>
</tr>
<tr>
<td>Physician’s office</td>
<td>7</td>
<td>6.9</td>
</tr>
<tr>
<td>Education / Research based setting</td>
<td>18</td>
<td>17.8</td>
</tr>
</tbody>
</table>
Regarding the age and gender of the respondents, 33 were under 35 years old (32.7%), 27 were between ages 50 and 64 (26.7%), 24 were between 35 and 49 (23.8%), and 17 were age 65 or older (16.8%) (see Figure 3). In addition, 76 were female (75.2%), 17 were male (16.8%), three were non-binary (3.0%), and 5 preferred not to answer (5.0%) (see Figure 4).

Figure 3

Age Range of Participants

![Age Group Chart]

Figure 4

Descriptive Statistics of Participants’ Gender

![Gender Chart]
Instrumentation

Several instruments have been developed to measure attitudes toward people with disabilities. The original scale to measure attitudes, the ATDP, was developed in 1960. The ATDP scale has been widely used to measure the attitudes of the general population toward disability (Lam et al., 2010; Yuker et al., 1970). The ATDP scale meets the standard for reliability and “possesses content and construct validity” (Lam et al., 2010, p. 3). Wang et al. (2021) conducted a comprehensive search of professional literature that evaluated attitudes toward disabled people from 1950 to the present. Of the 27 studies highlighted in the findings, in most instances, researchers used either Form B of the ATDP or the SADP to examine the attitudes of students and healthcare professionals.

The SADP was the primary instrument used in this study. Antonak and Larrivee (1995) noted that the SADP measures attitudes toward people with disabilities as a group. Lam et al. (2010) deemed the SADP a proven survey instrument to measure the attitudes of students and workers in the healthcare profession. On the other hand, Gething and Wheeler (1992) recognized that even though the ATDP and the SADP are used extensively, some items in the scales may not be applicable for the present day. Antonak developed the SADP in 1982. It was developed as an updated and psychometrically sound version of the ATDP and is widely used to measure the attitudes and perspectives of groups such as healthcare workers (Antonak, 1982; Antonak & Livneh, 2000; Lam et al., 2010; Myong et al., 2021). The researcher selected the SADP based on three factors: psychometric properties, dimensionality, and the length of the scale.

Kost and de Rosa (2018) found that shorter surveys yield higher response and completion rates. The 24-item multidimensional SADP was used in this research study to minimize the time burden for the participants to complete the questionnaire. The frequency distribution was
calculated using a 6-point Likert-type rating scale from -3 (strongly disagree) to +3 (strongly agree). There was no possibility of a neutral answer. The participants indicated their level of agreement with the statements on the scale (Appendix E). This scale allows for the analysis of the attitudes toward persons with disabilities through a score whose lower values indicate more negative attitudes and higher values indicate more positive attitudes.

Of the 24 items in the SADP, half are worded to generate a positive response representing a positive attitude, and the other 12 items are worded so that a response with a negative number represents a negative attitude (Antonak & Livneh, 2000). The 12 SADP items worded to generate a negative response must be reverse coded to provide an accurate score. To compute the SADP score in the direction of a positive attitude, Antonak and Livneh (2000) recommended changing the sign of the Likert scale response (that is, from + to – or from – to +) for those items worded in a negative manner which included items 1, 3, 4, 7, 8, 9, 10, 14, 17, 18, 19, and 22). Next, sum the respondent's responses to all 24 items; the signed scores ranged from -72 to +72). Lastly, add a constant of 72 to the total to eliminate negative scores.

It was also recommended that the exact process be followed to calculate the subscales of the SADP by adjusting the signs, and then add 33, 21, and 18 to each subscale, respectively, to eliminate negative scores. Subscale 1 ranged from 0 to 66, subscale 2 ranged from 0 to 42, and subscale 3 ranged from 0 to 36. The total SADP score ranged from 0 to 144. On the SADP, lower scores indicated a more negative attitude, while higher scores indicate a positive attitude.

The other section of the questionnaire consisted of 11 demographic questions that provided categorical data (see Appendix F). The demographic questions were developed by the researcher. The questions were reviewed and modified by outside professionals for content which maximized the validity of the questions. Obtaining background information on the
participants was used to categorize the SADP responses. Also, the demographic data indicated whether the sample was representative of the larger population (QuestionPro, 2021b). The demographic questions collected data such as employment status, highest position attained, range of age, years in the profession, gender, and participants’ experiences with persons with disabilities. There were 5 demographic questions that assessed participants’ contact with persons with disabilities when performing nursing responsibilities, as well as, the intensity of their knowledge as related to the occurrences of diagnostic overshadowing.

The participants accessed the SADP and demographic questions through a link in the Qualtrics online survey platform. Computer-assisted survey software tools allow users to design, send, and collect feedback from a targeted sample online. Participants were informed that the research survey and demographic questions could be completed in approximately 15-20 minutes in a single session, regardless of the type of device. However, the average time to complete the survey was about 15 minutes.

**Validity and Reliability**

Rigorous psychometric analyses of the SADP by the author verified that the scale was reliable, internally consistent, and possessed construct validity (Antonak, 1982). The Cronbach alpha determined the consistency of responses across the different items in the survey. A score of 0.70 or higher was considered acceptable for reliability (UCLA Statistical Consulting Group, n.d.). The results of the detailed analyses of the SADP showed a reliability coefficient of .81 and an alpha coefficient of .88 (Antonak, 1985). The analyses also confirmed that the three factorially derived subscale scores were homogeneous, specific, and reasonably independent. Factorial congruence of the ATDP and SADP supported the construct validity.
Consistent with Antonak’s analysis, Dorji and Solomon (2009) conducted several analyses on the SADP that indicated reliability coefficients from 0.81 to 0.85 and alpha coefficients of 0.88 to 0.91. The SADP has been used in research worldwide, for instance, in countries such as Bhutan, Jordan, Hong Kong, Taiwan, Singapore, and Australia (Chan et al., 1984; Dorji & Solomon, 2009; Nagata, 2007). The responses to the other researchers’ analyses produced alpha internal consistency coefficients ranging from 0.76 to 0.88 (Antonak & Larrivee, 1995). Therefore, the researcher considered the SADP a viable instrument for this study.

The SADP provided a total score as well as three factor subscale scores. Roush and Klockars (1988) identified the three subscales developed by Antonak and the number of items from the SADP survey used to measure each subscale. As displayed in Table 6, the subscales include optimism-human rights, behavior misconceptions, and pessimism-hopelessness (Roush & Klockars, 1988, p. 26).

- **Subscale 1** – Optimism-human rights items focused on recognizing the human rights of individuals with disability and their social inclusion.
- **Subscale 2** – Questions about Behavior misconceptions focused on the personality and behavior features attributed to individuals with a disability.
- **Subscale 3** – Pessimism-hopelessness items focused on negative attributes that generate a view of hopelessness toward individuals with a disability.

A discrepancy was noted in the assignment of the SADP item #21. The item was initially assigned to Subscale 3. However, similar items fit Subscale 2 (Antonak, 1985).

Cronbach’s coefficient alpha is the “frequently most reported reliability statistic” (Eisinga et al., 2013, p. 637). However, Spearman-Brown is considered a more appropriate measure of reliability, especially for determining the total score for two-item tests. In addition, Cronbach’s
alpha most often underestimates reliability, whereas the Spearman-Brown formula is always higher than Cronbach’s alpha (Eisinga et al., 2013; Statistics How To, n.d.). Derived from a principal factors analysis, Antonak (1985) reported Spearman-Brown reliabilities of .71, .55, and .61 for the subscales. In addition, the author reported internal consistency scores of .81, .77, and .82. The statistical results above supported the construct validity of the SADP.

Table 6

**SADP Subscales**

<table>
<thead>
<tr>
<th>Subscales</th>
<th>Number of items</th>
<th>SADP Item Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscale 1. Optimism-Human Rights</td>
<td>11</td>
<td>2, 5, 6, 11, 12, 13, 15, 16, 20, 23, 24</td>
</tr>
<tr>
<td>Subscale 2. Behavior Misconceptions</td>
<td>7</td>
<td>7, 9, 10, 14, 17, 18, 21</td>
</tr>
<tr>
<td>Subscale 3. Pessimism-Hopelessness</td>
<td>6</td>
<td>1, 3, 4, 8, 19, 22</td>
</tr>
</tbody>
</table>


**Data Collection**

Data were collected using an online 2-part questionnaire. The questionnaire consisted of a 24-item survey and 11 demographic questions. The researcher recruited subjects by placing recruitment flyers on public message boards of local community health buildings and educational institutions that have nursing programs. Because the response proved to be slower than anticipated, the researcher sent a recruitment letter and flyer to over 40 additional educational institutions, healthcare systems, and nursing organizations within and outside of the local Southeastern region. Heath (2023) recognized that when participants are recruited to participate in a study by other members of the same group, it makes them more open to contribute.
However, there was an increased risk of sample bias and margin of error with snowball sampling due to the non-randomness of the selection.

Participants accessed the questionnaire through Qualtrics. For the questionnaire, up to 158 participants were approved by The University of Memphis Institutional Review Board (IRB) to be recruited for the study. The researcher recruited initial subjects by placing recruitment flyers on public message boards of local community health buildings or in places frequented by nurses and nursing students (convenience sampling). The flyer contained a QR code that linked to the recruitment invitation letter in Qualtrics. The agreed recruits were asked to forward the flyer with the QR code or the link to the recruitment letter to their colleagues and acquaintances (snowball sampling). The initial subjects, as well as others that were interested in obtaining more information about the study were directed to scan the QR code in the flyer to access the invitation letter and continue to the informed consent document.

The informed consent contained information about the research topic, the potential risks and benefits of participation, the data collection method, and the researcher’s contact information. The process of participants proceeding through the Qualtrics link in the invitation letter to the informed consent document provided interested recruits the opportunity to give their consent to participate. Clicking the appropriate link in the informed consent document directed participants to the Scale of Attitudes Toward Disabled Persons (SADP) survey and demographic questions.

Proper steps to protect participants from harm included maintaining the confidentiality of the data and the privacy of the participants’ identity. To assure that no identifiable information was collected from participants when completing the online survey, the Qualtrics security options were set to anonymize the responses. Completed survey responses were stored in
Qualtrics. The researcher downloaded and exported the survey results into the IBM Statistical Package for the Social Sciences (SPSS).

**Data Collection Procedures**

1. Sought permission from the IRB.
2. Obtained approval from institution directors/supervisors when needed to place the flyer in various locations for the purpose of recruiting graduate nursing students, current practicing nurses, and retired nurses to participate in the study by completing the survey.
3. Potential recruits accessed information about the study using the QR code in the flyer.
4. The QR code led potential recruits to the informed consent, survey, and demographic questions in Qualtrics which is an online survey software program.
5. The SADP survey and researcher developed demographic questions were initially supposed to be available in Qualtrics for 3-weeks. However, due to the nature of snowball sampling of relying on recommendations and referrals of others to recruit additional participants, instead the questionnaire was active for 7 months.

**Statistical Analysis**

Statistical analysis involved examining the results from the SADP scores, where attitudes of nurses was the variable. The quantitative data from the 24-item SADP with a 6-point Likert scale was analyzed using the SPSS software Version 29 (Guetterman, 2019). Before the Qualtrics results could be uploaded into SPSS, data cleaning had to be performed. Data cleaning entailed modifying or removing data that was irrelevant or incorrectly formatted. Furthermore, once the Qualtrics data were imported into SPSS, more data cleaning occurred. A one-way analysis of variance (ANOVA) was conducted for research question 1 to identify significant differences in nurses’ attitudes toward people with disabilities. Because diagnostic
overshadowing is a “failure to deliver a proper diagnosis” (Joint Commission, 2022, p. 3), a two-way ANOVA was conducted for research question 2 to determine if misdiagnosis was associated with the SADP scores based on groups. Misdiagnosis is closely related to diagnostic overshadowing. Therefore, for the purpose of this study, diagnostic overshadowing and misdiagnosis are used synonymously. Data were presented as mean ± standard deviation. Demographic data were analyzed for frequency which included factors about participants’ education level, age range, gender, years worked in the profession, whether they received disability awareness training, and basic information about participants’ background in disability and diagnostic overshadowing.

The intent was to examine the scores on the SADP. The idea is that the higher the participants’ scores on the SADP questionnaire, the more positive the attitudes towards people with disabilities. Consequently, the lower the scores on the SADP, the less positive the attitudes. In addition, the researcher examined whether misdiagnosis was associated with the SADP scores based on groups. Results from this research study could potentially directly impact the care nurses provide to patients with disabilities in all healthcare settings. Raising awareness about potential biases in attitudes can help identify overlooked needs of people with disabilities, enabling them to receive targeted support and thrive to their full potential.

**Ethical Procedures**

The foundation of quality research is about proving trustworthiness, which, in quantitative research, is achieved through the measurement of the validity and reliability of the instrument. Statistical analysis results of the SADP indicated “satisfactory item characteristics, reliability, and internal consistency for the total scale and subscales” (Antonak, 1982, p. 22). Researchers worldwide have documented Cronbach alpha coefficients of 0.74 to 0.91, which
meets the standard for reliability and internal consistency (Findler et al., 2007; Myong et al., 2021). In short, the SADP proved reliable in all aspects: across items (internal consistency), across different researchers (inter-rater reliability), and over time (test-retest reliability).

**Summary**

For this study, the researcher aimed to investigate scores on the SADP and probable occurrences of diagnostic overshadowing. This descriptive research study utilized a 2-part online questionnaire to gather quantitative information about attitudes toward persons with disabilities and demographic information. Nursing professionals and graduate nursing students were recruited to participate in the study. The quantitative data from the 24-item SADP with a 6-point Likert scale was analyzed using the SPSS software Version 29. Null hypothesis testing was conducted on each of the two comparative research questions.

**CHAPTER 4: RESULTS**

Limited research exists where researchers examined U.S. nurses’ attitudes toward adults with disabilities and the prevalence of diagnosis overshadowing that may affect the care that patients with disability receive. This study sought to address that gap. In Chapter 4, the researcher presented an overview of aspects of the methodology. In addition, the results of the study were discussed.

**Overview of the Methodology**

This study used a quantitative descriptive research design to examine the attitudes of nursing professionals and graduate nursing students about persons with disabilities. A descriptive design is non-experimental, with no independent and dependent variables. Graduate nursing students, current practicing nurses, and retired nurses were recruited for the study through an
exponential, non-discriminative snowball sampling method. All participants were informed that their involvement in the study was anonymous.

The instrument consisted of a 2-part questionnaire. The questionnaire comprised the 24-item SADP survey, and 11 researcher developed demographic questions. Each item was rated on a Likert scale of 1 (strongly disagree) to 6 (strongly agree). Data collection commenced after obtaining approval from the university IRB. Using the QR code on the recruitment flyer or the Qualtrics link, 116 prospective participants accessed the informed consent document and the 2-part questionnaire. Most participants completed the survey within the 15-20 minutes posted on the flyer and in the informed consent document. The sample consisted primarily of females (76.2%). In addition, almost all participants directly interacted with persons with disabilities (98%).

**Research Questions and Null Hypotheses**

The researcher aimed to examine nurses’ attitudes toward persons with disabilities and the occurrences of diagnostic overshadowing. The comparative research questions aligned with the study purpose. The research questions were as follows:

**RQ 1:** Is there a difference in attitudes toward people with disabilities among graduate nursing students, current practicing nurses, and retired nurses?

**H01:** There are no statistically significant differences in attitudes toward people with disabilities among graduate nursing students, current practicing nurses, and retired nurses.

**RQ 2:** Is there a difference in understanding about occurrences of diagnostic overshadowing among graduate nursing students, current practicing nurses, and retired nurses?
H0²: There are no statistically significant differences in understanding about occurrences of diagnostic overshadowing among graduate nursing students, current practicing nurses, and retired nurses.

**Variables**

For this study, there were no independent and dependent variables to be manipulated. The variables measured in this study were attitudes and understanding of diagnostic overshadowing. Therefore, the higher the participants’ scores on the SADP questionnaire, the more positive the attitudes toward persons with disabilities. Consequently, the lower the scores on the SADP, the less positive the attitudes toward persons with disabilities. Null hypothesis testing was conducted on each of the comparative research questions.

**Statistical Analysis and Results**

**Data Preparation**

After exporting the Qualtrics results into SPSS, the researcher cleaned the data to prepare it for analysis in SPSS. Several columns in the data file not relevant to conducting the data analysis were deleted, such as start/end date, preview responses, status, duration, finished, location, distribution, user language, and others. Missing and incomplete data values were deleted. Next, the researcher conducted data screening visually for missing data and inconsistencies. Of the 116 respondents, 8 did not consent and declined participation, 5 consented to participate but did not complete the survey, and 9 other respondents were missing only one or two items. The researcher deleted the two preview/test responses and 13 declined survey responses. In addition, there were 11 missing values. Two surveys were missing 2 items each, and 7 others were missing only 1 (see Table 7). Because the incomplete surveys were
missing only one or two items, they were not deleted. Therefore, the sample comprised 101 participants.

Table 7

Missing Values

<table>
<thead>
<tr>
<th>Question</th>
<th>Number of participants that did not respond</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEM 1 Employment status</td>
<td>2</td>
</tr>
<tr>
<td>DEM 2 Years in the profession</td>
<td>2</td>
</tr>
<tr>
<td>DEM 7 Whether had disability awareness training</td>
<td>2</td>
</tr>
<tr>
<td>DEM 8 Familiar with diagnostic overshadowing</td>
<td>1</td>
</tr>
<tr>
<td>ITEM 22 Disabled engage in bizarre behavior</td>
<td>4</td>
</tr>
</tbody>
</table>

*Note. DEM = Demographic question*

Descriptive Statistics

The researcher conducted various descriptive statistics. Central tendency was run to identify the mean scores of the demographic variables of employment status, highest position attained, age range, years in the profession, gender, and participants’ experiences with persons with disabilities for the SADP total and individual subscale scores. In addition, reliability analyses were conducted to determine the internal consistency, reliability, and validity of the SADP scale and subscales.

Measures of frequency determined the demographic classification of the participants. Data were displayed in a distribution table (see Appendix G). A sample of 101 participants completed the online survey. Because of the nature of snowball sampling and the anonymity of the online survey using Qualtrics, no response rate could be determined. Highlights of the results have shown that the sample consisted of 31 graduate nursing students (30.7%), 47 current practicing nurses (46.5%), 21 retired nurses (20.8%), and 2 did not answer the employment status question (0.1%).
Reliability

The reliability of the total scale and subscales were measured. Cronbach's alpha (α) coefficient measures a composite’s score reliability or internal consistency. The value of Cronbach’s alpha between 0.6 and 0.8 is considered acceptable (Taber, 2018). For this study, the alpha level of .70 was deemed acceptable. A survey was employed to measure three underlying constructs of the SADP.

- Subscale 1 – Optimism-Human Rights (11 items); scores ranged from 0 to 66.
- Subscale 2 – Behavioral Misconceptions (7 items); scores ranged from 0 to 42.
- Subscale 3 – Pessimism-Hopelessness (6 items); scores ranged from 0 to 36.

The SADP, consisting of 24 items, was employed to measure different underlying constructs. Reliability statistics using Cronbach's alpha were performed before reverse coding the negative worded items (see Table 8). The total scale had an unacceptably low level of internal consistency, as determined by Cronbach’s alpha coefficient of α = .32, which does not meet consistency standards. On the other hand, the subscales had a low to moderate level of internal consistency of α = .66, α = .75, and α = .62, respectively.

Table 8

Reliability Statistics for the SADP and Subscales Before Reverse Coding

<table>
<thead>
<tr>
<th>SADP</th>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Scale</td>
<td>.32</td>
<td>24</td>
</tr>
<tr>
<td>Subscale 1</td>
<td>.66</td>
<td>11</td>
</tr>
<tr>
<td>Subscale 2</td>
<td>.75*</td>
<td>7</td>
</tr>
<tr>
<td>Subscale 3</td>
<td>.62</td>
<td>6</td>
</tr>
</tbody>
</table>

*Note. * = α > .70

Table 9 shows the reliability statistics after reverse coding the negative worded items. The total scale increased from a low to a high level of internal consistency, as determined by
Cronbach’s alpha coefficient of $\alpha = .81$. The subscales remained relatively unchanged with a moderate to low level of internal consistency of $\alpha = .66$, $\alpha = .75$, and $\alpha = .61$. Cho and Kim (2015) noted that Cronbach's alpha scores may be low due to small sample sizes and scores with a low number of items. After reverse coding, the 24-item scale was deemed reliable and met consistency standards. In contrast, only one of the three subscales had acceptable reliability and internal consistency. For this study, analyzing the data using the total scale rather than the three subscales individually was justified because the subscales did not show adequate psychometric properties.

Table 9

Reliability Statistics for the SADP and Subscales After Reverse Coding

<table>
<thead>
<tr>
<th>SADP</th>
<th>Cronbach's Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Scale</td>
<td>.81*</td>
<td>24</td>
</tr>
<tr>
<td>Subscale 1</td>
<td>.66</td>
<td>11</td>
</tr>
<tr>
<td>Subscale 2</td>
<td>.73*</td>
<td>7</td>
</tr>
<tr>
<td>Subscale 3</td>
<td>.61</td>
<td>6</td>
</tr>
</tbody>
</table>

Note. * = $\alpha > .70$

Research Question 1

Before analyzing the SADP data using a one-way ANOVA to determine whether there is a difference in attitudes toward people with disabilities among graduate nursing students, current practicing nurses, and retired nurses, the researcher first had to check to ensure the data could be analyzed using the ANOVA. Three assumptions were considered: (a) continuous dependent variable; (b) the independent variable is categorical with two or more independent groups; and (c) have independence of observations. Because the first three assumptions were met, the researcher checked for three additional assumptions regarding how the data fits the one-way
ANOVA model. The three assumptions included (a) an assumption of no outliers, (b) an assumption of normality (if the SADP scores were normally distributed for each group), and (c) an assumption of homogeneity (if the population variance for each group was similar).

The results in Figure 5 indicated no outliers in the data, as assessed by inspection of a boxplot.

**Figure 5**

*Boxplot Displaying Assumption of No Outliers*

![Boxplot Image]

When testing for normality as shown in Table 10, the data indicated that the SADP scores were normally distributed for each group, graduate nursing students, current practicing nurses, and retired nurses, as assessed by Shapiro-Wilk's test ($p > .05$).

**Table 10**

*Shapiro-Wilk’s Test of Normality for RQ 1*

<table>
<thead>
<tr>
<th>Group</th>
<th>Statistic</th>
<th>N</th>
<th>*Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Nursing Student</td>
<td>.953</td>
<td>31</td>
<td>.190</td>
</tr>
<tr>
<td>Current Practicing Nurse</td>
<td>.982</td>
<td>47</td>
<td>.690</td>
</tr>
<tr>
<td>Retired Nurse</td>
<td>.938</td>
<td>21</td>
<td>.196</td>
</tr>
</tbody>
</table>
Lastly, regarding assumptions, Table 11 shows there was homogeneity, as assessed by Levene's test for equality of variances ($p = .531$). Even though the group sizes were not equal (ranging from $n = 21$ to $n = 47$), there was an indication of increasing positive attitudes on the SADP, ranging from a mean of 108.10 for retired nurses to 115.19 for graduate nursing students with the higher score representing more positive attitudes toward persons with disabilities (see Table 12 and Figure 6).

**Table 11**

*Levene’s Test of Homogeneity of Variances*

<table>
<thead>
<tr>
<th>SADP Total</th>
<th>Based on Mean</th>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SADP Total</td>
<td></td>
<td>.637</td>
<td>2</td>
<td>96</td>
<td>.531</td>
</tr>
</tbody>
</table>

**Table 12**

*Descriptive Statistics of Mean SADP Total Score*

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean ± Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Nursing Student</td>
<td>31</td>
<td>115.19 ± 10.897</td>
</tr>
<tr>
<td>Current Practicing Nurse</td>
<td>47</td>
<td>114.62 ± 10.426</td>
</tr>
<tr>
<td>Retired Nurse</td>
<td>21</td>
<td>108.10 ± 12.477</td>
</tr>
</tbody>
</table>

**Figure 6**

*Plot of Mean SADP Total Score*
The descriptive results in Table 12 and Figure 6 show that the homogeneity assumption was met. The results of the three assumptions satisfied the conditions for the data to be analyzed using the ANOVA.

When reporting the results of a one-way ANOVA, eta squared ($\eta^2$) is usually used to report the effect size. Effect size conveys the magnitude of the difference between the groups (Learn Statistics Easily, 2023). The ANOVA results were interpreted using the F-statistic, degrees of freedom, p-value, and effect size.

**Results of the ANOVA Inferential Statistics for RQ 1**

The one-way ANOVA was conducted to determine if the SADP score differed for groups with different attitudes (see Table 13). Participants were classified into three groups: retired nurses ($n = 21$), current practicing nurses ($n = 47$), and graduate nursing students ($n = 31$). Data were presented as mean ± standard deviation. The SADP score was statistically significantly different for the groups, $F(2, 96) = 3.125, p = .048, \eta^2 = .061$.

<table>
<thead>
<tr>
<th>SADP Total Scale</th>
<th>Sum of Squares</th>
<th>$df$</th>
<th>$F$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>760.266</td>
<td>2</td>
<td>3.125</td>
<td>.048</td>
</tr>
<tr>
<td>Within Groups</td>
<td>11677.755</td>
<td>96</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12438.020</td>
<td>98</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table 12, the SADP scores were lower for retired nurses ($n = 21, M = 108.1, SD = 12.5$), than for the current practicing nurses ($n = 47, M = 114.6, SD = 10.4$) and the graduate nursing students ($n = 31, M = 115.2, SD = 10.9$) regarding attitudes toward disabled persons, in that order. In addition, the group mean scores of at least two groups were statistically
significantly different, $p = .048$. Because the one-way ANOVA indicated significant results, a Tukey post hoc analysis was conducted to confirm where the differences occurred between the groups. The one-way ANOVA and post hoc tests address different questions and do not necessarily give the same results. The Tukey post hoc test revealed three pairwise comparisons, each showing non-significant results (see Table 14). The increase from graduate nursing student to current practicing nurse (0.58, 95% CI [-5.50, 6.65] was not statistically significant, $p = .972$). The increase from current practicing nurse to retired nurse (6.52, 95% CI [-0.37, 13.4] was not statistically significant, $p = .68$), as well as the increase from retired nurse to graduate nursing student (7.09, 95% CI [-.32, 14.5], $p = .06$). The large confidence intervals calculated at a 95% level between the groups suggest there may be a difference between the groups, but the sample sizes in the dataset may have been too small to detect it.

**Table 14**

*Tukey Post Hoc Results*

<table>
<thead>
<tr>
<th>Variable 1</th>
<th>Variable 2</th>
<th>Mean Difference</th>
<th>$P$-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Nursing Student</td>
<td>Current Practicing Nurse</td>
<td>0.58</td>
<td>.972</td>
</tr>
<tr>
<td>Current Practicing Nurse</td>
<td>Retired Nurse</td>
<td>6.52</td>
<td>.068</td>
</tr>
<tr>
<td>Retired Nurse</td>
<td>Graduate Nursing Student</td>
<td>7.09</td>
<td>.064</td>
</tr>
</tbody>
</table>

The group means were statistically significantly different ($p < .05$). Therefore, the null hypothesis for RQ 1 that there are no statistically significant differences in attitudes toward people with disabilities among graduate nursing students, current practicing nurses, and retired nurses can be rejected. The results indicated a difference between the groups. However, the sample size may not have been large enough to determine where the difference occurred,
although the means plot (Figure 6) suggested that the retired nurse group out of the three may have been the odd one.

**Research Question 2**

For RQ 2, three primary assumptions had to be considered to perform a factorial or two-way ANOVA: (a) a continuous dependent variable; (b) two independent variables that are both categorical with two or more independent groups; and (c) have independence of observations. If the study design meets these three assumptions, the two-way ANOVA would be the correct statistical test to analyze the data. The dependent variable was the SADP, which measured attitude and met the assumption of a continuous variable. The two independent variables, misdiagnosis and groups, consisted of two or more groups, and there was no relationship between the observations in the groups. Therefore, the first three assumptions were met.

Two additional assumptions that needed to be considered included normality and homogeneity: (a) there should be no significant outliers, (a) the dependent variable should be normally distributed, and (c) the assumption of homogeneity of variances. Residual analysis using SPSS was performed to test for these assumptions. Outliers were assessed by inspection of a boxplot (Figure 7), normality was assessed using Shapiro-Wilk's normality test (Table 15), and homogeneity of variances was assessed by Levene's test (Table 16). According to Howell (2008), an ANOVA is relatively robust against violations of the normality assumption, and valid results from the test can still be obtained. However, there were no outliers, residuals were normally distributed ($p > .05$), and variances were homogeneous ($p = .834$).
A two-way ANOVA was conducted to examine the main effects of misdiagnosis based on groups (graduate nursing students, current practicing nurses, and retired nurses) and their interaction effects on the SADP scores. Misdiagnosis and diagnostic overshadowing are diagnostic errors that contribute to delays in diagnosis and healthcare treatment. This study identifies misdiagnosis as an independent variable for research question 2 since it indicates diagnostic overshadowing. In Table 17, data were presented as mean ± standard deviation. For
the graduate nursing student and current practicing nurse, the group means were fairly even among those who witnessed misdiagnosis and those who did not. However, the retired nurse group, the smallest group, showed about a 12-point difference (see Figure 8).

Table 17

*Descriptive Statistics of Group Means of Misdiagnosis*

<table>
<thead>
<tr>
<th>Group</th>
<th>Witnessed Misdiagnosis</th>
<th>N</th>
<th>Mean ± Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Nursing Student</td>
<td>Yes</td>
<td>18</td>
<td>115.33 ± 12.166</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>13</td>
<td>115.00 ± 9.336</td>
</tr>
<tr>
<td>Current Practicing Nurse</td>
<td>Yes</td>
<td>26</td>
<td>115.92 ± 10.789</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>21</td>
<td>113.00 ± 9.980</td>
</tr>
<tr>
<td>Retired Nurse</td>
<td>Yes</td>
<td>10</td>
<td>114.60 ± 9.419</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>11</td>
<td>102.18 ± 12.279</td>
</tr>
</tbody>
</table>

Main effects analysis has shown that misdiagnosis was statistically significant at \( p < .05 \) (see Table 18). The main effect of misdiagnosis yielded an effect size of .053, indicating that 5.3% of the variance in the SADP scores was explained by misdiagnosis (\( F(1, 93) = 5.181, p = .025, \)
Therefore, the SADP scores of those who never witnessed misdiagnosis were significantly lower by approximately 5 points than those who did. The main effect of groups was not significant, yielding an effect size of .059 at \( p > .05 \) \( (F(2, 93) = 2.903, p = .25, \text{partial } \eta^2 = .059) \). The interaction effect was not statistically significant \( (F(2, 93) = 2.096, p = .129, \text{partial } \eta^2 = .043) \), indicating no interaction effect for misdiagnosis and groups on the SADP scores. Although, when considering the means plot in Figure 8, the retired nurses who did not observe misdiagnosis appear to be much lower than the other groups; however, the sample size is too small to determine this.

**Table 18**

**Inferential Statistics for ANOVA Results for RQ 2**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>( F )</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Misdiagnosis</td>
<td>600.029</td>
<td>1</td>
<td>600.03</td>
<td>5.181</td>
<td>.025</td>
<td>.053</td>
</tr>
<tr>
<td>Groups</td>
<td>672.263</td>
<td>2</td>
<td>336.13</td>
<td>2.903</td>
<td>.060</td>
<td>.059</td>
</tr>
<tr>
<td>Misdiagnosis*Groups</td>
<td>485.533</td>
<td>2</td>
<td>242.77</td>
<td>2.096</td>
<td>.129</td>
<td>.043</td>
</tr>
<tr>
<td>Error</td>
<td>1285852.000</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The means of SADP scores for witnessing misdiagnosis and graduate nursing student, current practicing nurse, and retired nurse groups were 115.19 (\( SE = 2.54 \)), 114.62 (\( SE = 2.11 \)), and 108.10 (\( SE = 3.40 \)), respectively.

Tukey’s post hoc tests were conducted for the group variable (see Table 19). The graduate nursing student group was associated with a mean SADP score of 0.576 (95% CI -5.35, 6.50) points higher than the current practicing nurse group, \( p = .971 \), and for the current practicing nurse group, 6.522 (95% CI -.206, 13.25) points higher than the retired nurse group, \( p = .059 \). The current practicing nurse group was associated with a mean SADP score of 7.10 (95% CI -.146, 14.34) points higher than the retired nurse group, \( p = .056 \). The data suggests that the
group means were not statistically significant. Meaning, there was no interaction of the variable on the SADP; however, there was an overall effect of the misdiagnosis variable on the SADP total score but the effect size was only 5.3%.

**Table 19**

*Tukey Post Hoc Results*

<table>
<thead>
<tr>
<th>Variable 1</th>
<th>Variable 2</th>
<th>Mean Difference</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate nursing student</td>
<td>Current practicing nurse</td>
<td>.576</td>
<td>.971</td>
</tr>
<tr>
<td>Current practicing nurse</td>
<td>Retired nurse</td>
<td>6.52</td>
<td>.059</td>
</tr>
<tr>
<td>Retired nurse</td>
<td>Graduate nursing student</td>
<td>7.10</td>
<td>.056</td>
</tr>
</tbody>
</table>

The group means were $p > .05$ so, the null hypothesis for RQ 2 that there are no statistically significant differences in understanding about occurrences of diagnostic overshadowing among graduate nursing students, current practicing nurses, and retired nurses, failed to be rejected.

**Summary**

In the United States, there exists a significant population of individuals who are living with disabilities. Researchers have suggested that negative attitudes of healthcare workers have contributed to the misdiagnosis of people with disabilities (Fisher & Purcal, 2017). In this quantitative descriptive research study, the researcher examined the attitudes of nursing professionals and graduate nursing students toward persons with disabilities, and witnessed occurrences of diagnostic overshadowing. In this chapter, the researcher discussed the quantitative methods used to conduct the study.

Data were gathered from a two-part questionnaire comprising the SADP survey and demographic questions. The participants accessed the questionnaire through Qualtrics. The three
participant groups of graduate nursing students, current practicing nurses, and retired nurses completed the 24-item survey measuring their attitude toward disabled persons. Each participant group completed the survey in a single session. Data were analyzed using SPSS by performing a one-way ANOVA for RQ 1 and a two-way ANOVA for RQ 2. Lastly, the results were discussed.

CHAPTER 5: DISCUSSION and CONCLUSION

Attitudes are habits of mind and character that direct a person’s thoughts and actions. A negative attitude toward people with disabilities has been an extended paradigm in American society. Improving the treatment of people with disabilities has led to changes in national policy and legislation. However, health inequities continue to be a significant issue faced by people with disabilities. Because attitudes among nurses toward people with disabilities can vary (Fisher & Purcal, 2017; VanPuymbrouck et al., 2020), the researcher of this study examined factors that might impact attitudinal barriers among nursing professionals and graduate nursing students.

Discussion of the Findings

Reliability of the SADP

The SADP has been widely used and is recognized as a viable measure for quantifying healthcare workers’ attitudes toward disabled persons. For this study, the SADP’s Cronbach Alpha of .81 confirmed the total scale’s reliability. However, when investigating the reliability of the subscales, Subscale I optimism-human rights, Subscale II behavioral misconceptions, and Subscale III pessimism- hopelessness the results showed Cronbach alphas of $\alpha = .66$, $\alpha = .73$, and $\alpha = .61$, respectively. Previous studies conducted using the SADP total scale reported reliable Cronbach alpha coefficients ranging from .76 to .91., with the subscales reporting .81, .77, and .82, respectively (Antonak & Larrivee, 1995; Dorji & Solomon, 2009; Tervo & Palmer,
It is essential to take note of the decrease in Cronbach’s alpha scores in this study compared to previous studies. According to Giecek (2019), “time could be a factor in explaining the downward trend in the reliability of the SADP” (p. 43). Some of the items on the SADP may no longer be relevant or consistent with current social and political trends. For example, some statements such as people with disabilities should not be provided free public education, should be prevented from having children, should be involuntarily committed to an institution immediately after being arrested, equal employment opportunities should be available to disabled individuals, and laws to prevent employers from discriminating should be passed (Antonak & Larrivee, 1995) may no longer be relevant. Because some of the SADP items were obsolete, it could have influenced the participants’ responses (Giecek, 2019).

Data were collected from 101 participants (See Appendix G/Table G1). Most of the respondents were female (75.2%) registered nurses (28.7%) who worked in a hospital/medical clinic setting (57.4%). While almost all respondents had direct interaction (98%) and completed assessments and diagnoses for people with disabilities (91.1%), only two-thirds had disability awareness training (66.3%) and were familiar with the term diagnostic overshadowing (67.3%).

**Statistical Results**

For RQ 1, results from statistical tests revealed that graduate nursing students, comprised mostly of participants in the youngest age group (ages 20-34), scored 7 points higher on the SADP than the retired nurses, suggesting that younger respondents may be more accepting of disabilities and held positive attitudes toward disabled persons than older age groups with more years in the profession. The main effect of groups for RQ 1 was statistically significantly different, yielding an effect size of .061 at $p > .05$ ($F(2, 96) = 3.125, p = .048$, partial $\eta^2 = .061$). Though the effect size is small. These results are closely related to those of Devkota et al. (2017)
who found that younger healthcare workers were more positive about disabilities than older age groups.

A study was conducted by Domagała-Zyśk (2021) to analyze the attitudes of people from different age groups toward individuals with intellectual disabilities. According to Domagała-Zyśk, discriminatory behavior and lack of support for equitable treatment can be a threat to the welfare and right to proper healthcare of the disabled community. The results of the study showed that attitudes towards persons with intellectual disability varied among people of different age groups. Like Devkota et al. (2017), in Domagała-Zyśk’s study, the youngest participant group (ages 19-34) expressed the most positive attitudes. However, in contrast to Devkota et al., Domagała-Zyśk also found that the oldest participant group (ages 61-81) expressed positive attitudes toward persons with a disability, while the participant group (ages 35–60) expressed the most negative attitudes. It is worth noting that Domagała-Zyśk’s study was conducted during a critical period of the global pandemic from May 2020 to January 2021.

Nursing education has undergone significant changes in recent decades to equip nurses with the skills to care for all patients, including those with disabilities. Ortega et al. (2015) observed that new nursing curricula now offer specialized training and experiences focusing on enhancing clinical skills to meet the needs of patients with disabilities. According to Ruiz et al. (2020), immersive clinical experiences that involve caring for people with disabilities have helped nursing students develop better attitudes toward them. These changes in nurses' academic training may have led to the graduate student nurses having more positive attitudes toward people with disabilities than the current practicing and retired nurse groups, as suggested by the SADP results.
For this study, the mean score difference between those who received disability awareness training and those who did not was statistically insignificant. Overall, participants’ attitudes toward people with disabilities were reasonably positive, which may explain why more than half of them reported having witnessed diagnosis overshadowing. Although the hypothesis for RQ 1 was rejected, no conclusions could be drawn regarding attitudes toward specific disabilities due to the lack of delineation between the disabilities.

For RQ 2, a two-way ANOVA was performed to analyze the effect of misdiagnosis on SADP scores based on groups (graduate nursing students, current practicing nurses, and retired nurses). The two-way ANOVA results revealed no statistically significant interaction between the effects of misdiagnosis and group responses on the SADP. Data has shown that misdiagnosis did have a significant effect ($p = .025$). Those who witnessed misdiagnosis had higher SADP scores. The mean SADP score was greater in the graduate nursing student group. The main effect of misdiagnosis yielded an effect size of $0.53$ at $p > .05$ ($F(1, 93) = 5.181, p = .025$, partial $\eta^2 = 0.053$). The effect size was significant but not large enough to be meaningful.

Although no inferential tests were conducted regarding age, the descriptive statistics suggested that nurses in the younger age group (20 - 34), comprised primarily of graduate nursing students, tended to be more understanding of people with disabilities. The longer nurses work in the field, the more desensitized they may become to diagnostic overshadowing. Experienced nurses may witness diagnostic overshadowing more frequently than less experienced nurses, but they may view it as insignificant due to their own life experiences. However, younger and less experienced nurses may not be as desensitized and may lack knowledge about diagnostic overshadowing. It is worth noting that society has become more accepting of patients with
disabilities, so while diagnostic overshadowing may still occur, it may not be as prominent as it was in the past.

This study supports Bourdieu's Theory of Practice, which suggests that social norms can create power imbalances between group members, depending on their expected behavior in certain situations. Provision 2 of the nurse's code of ethics states that a nurse's primary concern is the patient's well-being (American Nurses Association, 2015). Provision 2 encourages nurses to empower their patients by providing them with the necessary information and support to make informed decisions about their care. However, Henderson (2003) found that nurses hesitated to share decision-making powers with their patients as they believed they held more knowledge and expertise. That belief results in a power imbalance between nurses and patients. Nurses must communicate openly with their patients to address the power imbalance and promote equality.

Bourdieu’s theory emphasized that an individual's daily routines and habits may not always be explicitly stated but can be implied or understood without being conveyed (Rhynas, 2005). Therefore, nurses and other healthcare workers must include an understanding of embodied knowledge acquired during disability awareness training to support disabled patients. Bourdieu's theory enables persons to consider objective and subjective aspects by conceptualizing capital, habitus, and field (Huang, 2019; Oerther & Oerther, 2018). It is important to uncover the experiential knowledge of nurses so that best practices can be implemented to offer patients with disabilities proper diagnosis and care.

Power dynamics in healthcare can affect communication between nurses and patients. Understanding the characteristics of the healthcare relationship can lead to uncovering ineffective treatment and intervention, resulting in diagnostic overshadowing. In this research, Bourdieu's framework brought attention to the positions and distributions of power of nurses and
patients within the field, which helped to understand the attitudinal barriers towards patients with disabilities. The results showed that nurses with more experience and years in the profession held less positive attitudes toward persons with disabilities.

**Assumptions and Limitations**

The researcher assumed that all the participants willingly volunteered to take part in the study without coercion. Prospective participants who did not want to participate in the study had the option to decline. Eight respondents declined by clicking, I do not consent, I do not wish to participate. In addition, some respondents consented to participate but did not complete the survey. It was also assumed that each person accessed the survey in Qualtrics individually. The individual results were downloaded from Qualtrics by the researcher and analyzed using SPSS.

A snowball sampling technique was used to recruit nurses and nursing students. Therefore, there was “no way to determine the total size of the target population” (Moss, 2019, para. 2). A drawback of snowball sampling is the uncertainty in its representation of the target population (Moss, 2019; Raina, 2015). There was no evidence to support that the nursing professionals who participated in the study were representative of all nurses and nursing students locally, nationally, or internationally. No data were collected regarding the ethnicity of the participants or whether they had a disability, so it could not be determined whether minority subgroups within the population were present in the sample. Because the participants were recruited through a referral process, there was no way to determine the setting where the surveys were completed.

Another limitation is that this study utilized a small sample, especially for the retired nurse’s group. The Tukey post-hoc test showed no difference in the groups, even though the overall test was significant. The test result suggests that the sample may have been
underpowered, which could have contributed to the post-hoc test not finding significance for research question 1.

Participants in snowball sampling are recruited through personal networks rather than random selection. Moss (2019) pointed out that in snowball sampling, participants may be more inclined to refer individuals with similar characteristics or experiences. A retired nurse was not included in the initial recruitment, potentially contributing to that group’s low response rate to the online survey and small sample size. To increase the likelihood of recruiting the identified sample, future researchers should include in their initial participants all who fit the criteria for the population of interest.

The last limitation to be discussed that may have affected the survey results was social desirability bias. “Social desirability bias refers to the tendency to respond in ways that feel or seem socially acceptable” (Cleave, 2021, para. 4). There was no way to determine if respondents answered truthfully without social bias. For example, the nurses and nursing students might have provided responses about their attitudes toward persons with disabilities based on those considered appropriate to others. This was minimized by using an online survey in Qualtrics, where no identifiable information about the participants was collected. However, because the study sample was not chosen through random selection, no inferences could be made about the conditions under which the participants completed the survey. These assumptions and limitations could potentially skew the data, creating unreliable results.

**Implications for Policy and Practices and Conclusion**

People with disabilities are prevalent worldwide. There is a long history of legislation and legal rulings to address discrimination and exclusion faced by this group (Krahn et al., 2015;
Nelson, 2002). Contrary to the beliefs and expectations of the nondisabled, people with disabilities lead full and varied lives.

The implications for policy and practices are as follows:

- A core component of nursing is communicating effectively and sensitively with all patients. This study's results showed that graduate nursing students held more positive attitudes towards people with disabilities than the other nurse groups with more work experience. Training interventions should target nursing students and professionals to promote health equity among patients with disabilities.

- An essential aspect of achieving cultural sensitivity is how nurses and other healthcare professionals perceive the individuals under their care (Kouta et al., 2016). According to Kouta et al. (2016), cultural competence education promotes and enhances health professionals’ cultural knowledge and positive attitudes. Clinical sensitivity training should be provided before nursing students begin their clinicals. The training should be made available throughout the nursing career to promote cultural awareness and sensitivity at all stages in the nursing profession to ensure and maintain patient-centered care (Kwame & Petrucka, 2021).

- The means of SADP scores for never witnessing misdiagnosis of people with disabilities was highest for graduate nursing students. Younger and less experienced nurses may lack knowledge about diagnostic overshadowing, making them more susceptible. Sahin and Akyol (2010) declared that nursing students have less contact with patients with disabilities than more experienced nurses who have had more contact and acquired more prior knowledge (p. 2276). Educational interventions should prioritize increasing contact
with people with disabilities beyond formal care relationships to improve attitudes toward them and their healthcare services (Ten Klooster et al., 2009).

- Younger nurses lack the training, experience, and skills to care for patients with disabilities, putting them at increased risk for diagnostic overshadowing and misdiagnosis. Disability competency training should be incorporated into all aspects of the nursing and healthcare profession, as well as postgraduate residencies and continuing education programs (Rader, 2022).

**Conclusion:** Student nurses and practicing nurses appeared to have similar levels of attitudes toward people with disabilities. Those nurses who experience misdiagnosis have a higher perception of disabilities than those who do not. The results have suggested that retired nurses yielded less of the outcome in attitudes and misdiagnosis than other groups, but more research and data are needed to substantiate this finding.

**Recommendations for Future Research**

The purpose of this study was to examine factors that may impact attitudinal barriers among nursing professionals and graduate nursing students when diagnosing physical symptoms of patients with disabilities. The results have shown that age affects attitude. The participants aged 20-34, primarily comprised of graduate nursing students, responded more positively to the SADP than the other participants. Raven (2017) stated that “diagnostic overshadowing is an important yet under-recognized patient safety issue” (para. 11). Further research is needed to increase awareness about the factors influencing the occurrences of diagnostic overshadowing.

- Further exploration of demographic descriptive data could provide valuable insights. As no personal questions were asked about the participants’ disability condition, it is unclear
whether their disabled or nondisabled status influenced their more positive responses on the SADP.

- Gender, race, or ethnicity could be factors that potentially influence the perception of disability. Research could be done to understand why certain genders, races, or ethnicities have more positive attitudes toward disability than others.

- For future research, it would be beneficial to comprehend the participants’ perceptions regarding disabilities. Some disabilities may be discriminated against more than others. Layne (2017) found that those with visible disabilities fared worse, with 44 percent reporting discrimination. Conducting a qualitative study would allow researchers to investigate what measures can be taken to improve the attitudes of healthcare populations that exhibit a more negative outlook toward persons with disabilities. By understanding the situation comprehensively, the occurrences of diagnostic overshadowing can be minimized.

- As the study participants were from different age groups and employment statuses, representing various stages of life, it may be beneficial for future research to explore attitudes toward disability in the context of time and social changes over time.

- Furthermore, researchers should consider developing their own instrument to measure attitudes in specific areas of interest. Customizing an instrument tailored to the research needs could provide valuable insights and in-depth information on areas past scales had not explored.

- Descriptive statistics showed that individuals who underwent disability awareness training had more positive attitudes than those without the appropriate training. Krahn et al. (2015) suggested the need for better integration of disability awareness training
throughout and beyond nursing and medical school curricula. According to the results, the educational model in nursing should be modified to promote patient-centered training for students and professional nurses. The training would encourage an in-depth understanding of the needs and medical treatment of members of the disabled community and reduce disparities in the quality of health care.

- A better understanding of the factors that influence healthcare professionals’ perceptions of disabilities would enable the development of effective disability awareness training programs to improve attitudes and medical services for people with disabilities.

**Summary**

Nursing professionals care for and impact the livelihood of all individuals, including those with disabilities. Despite federal laws, negative attitudes toward people with disabilities persist (Colvin et al., 2020; Havercamp et al., 2012). Research question 1 examined whether there was a difference in attitudes toward people with disabilities among the three nurse groups. The group mean scores showed that the graduate nursing students scored the highest on the SADP, indicating more positive attitudes than the retired nurses who scored the lowest. Au and Man (2006) found that experienced nurse professionals held the least favorable attitudes toward people with disabilities, while student nurses held more positive attitudes. Age appears to be a factor influencing nurses’ attitudes towards people with disabilities, as well as occurrences of diagnostic overshadowing and misdiagnosis perhaps due to factors such as desensitization or time.

Becoming desensitized can happen in any profession and at any point in a person's career. Visintini et al. (2023) recognized that "progressive desensitization of nurses can impact the quality of care and clinical outcomes of patients" (p. 1349). When desensitization occurs, there is
a potential for misdiagnosing a patient's condition by failing to identify the severity of their symptoms. Perceptions about disability develop socially over time. Attitudes toward people with disabilities can be influenced by cultural and societal changes (Ruiz et al., 2020; Smeltzer et al. (2017). Therefore, healthcare professionals must maintain a global perspective on people with disabilities by providing care without discrimination and removing barriers that hinder full inclusion.

The concepts of cultural capital and habitus can help in understanding how individuals behave and perform. According to Bourdieu’s theory, an individual’s actions are influenced by their learned traits, such as skills, habits, and social dispositions (Huang, 2019). Kwame and Petrucka (2021) suggested that improving the understanding of healthcare workers and organizations on caring for people with disabilities could help improve attitudes and reduce disparities in care. The results of this study have shown that disability awareness training can positively impact nurses’ attitudes and behavior toward disability, leading to better communication and care between nurses and their patients. This study’s findings may be used to encourage nursing professionals and other healthcare workers to adopt positive attitudes and potentially improve medical services for individuals with disabilities.
References


https://www.ada.gov/cguide.htm#anchor65610


https://adata.org/faq/what-definition-disability-under-ada


https://www.smartsurvey.co.uk/blog/how-to-reduce-social-desirability-bias#:~:text=What%20is%20Social%20Desirability%20Bias,is%20of%20a%20sensitive%20nature.

file:///C:/Users/music/Downloads/ContentServer.pdf


of health professionals toward individuals with disabilities: An evidence-based practice project. https://sophia.stkate.edu/cgi/viewcontent.cgi?article=1014&context=ot_grad


https://www.researchgate.net/publication/228408382_Attitudes_of_health_professionals_toward_persons_with_disabilities_in_Bhutan

https://doi.org/10.1016/j.socscimed.2013.06.014


https://doi.org/10.1007/s00038-012-0416-3


https://knightpoliticalreporting.syr.edu/?civilhistoryessays=a-civil-rights-history-americans-with-
disabilities. Into the late 20th centuries, and live on the streets.


Kouta, C., Vasiliou, M., & Raftopoulos, V. (2016, October 17). Improving the cultural competence level of community nurses through an intervention. *Journal of Family*
https://www.researchgate.net/publication/255178433_Health_Disparities_of_Adults_with_Intellectual_Disabilities_What_Do_We_Know_What_Do_We_Do


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Ability%20to%20reach&text=Non%20random%20A%20snowball%20sample,when%20compared%20to%20other%20methods.


http://www.internationaljournalofcaringsciences.org/docs/53_galanis_original_13_1.pdf

QuestionPro. (2021a). Non-probability sampling: Definition, types, examples, and advantages [blog]. https://www.questionpro.com/blog/non-probability-sampling/

QuestionPro. (2021b). Representative sample: Definition, importance, & how to obtain a representative sample with examples. https://www.questionpro.com/blog/representative-sample/


https://edisciplinas.usp.br/pluginfile.php/4938336/mod_resource/content/1/04.pdf


https://doi.org/10.11120/hsce.2013.00026


www.dissertationrecipes.com


https://doi.org/10.1590/0034-7167-2016-0505


https://www.worldbank.org/en/topic/disability#:~:text=Results-,One%20billion%20people%2C%20or%2015%25%20of%20the%20world's%20population%2C%20million%20people%2C%20experience%20significant%20disabilities

https://www.who.int/news-room/fact-sheets/detail/disability-and-health


Appendix A: Institutional Review Board Approval Letter

Institutional Review Board
Division of Research and Innovation
Office of Research Compliance
University of Memphis
315 Admin Bldg
Memphis, TN 38152-3370

February 20, 2023

PI Name: Louvisia Conley
Co-Investigators:
Advisor and/or Co-PI: Chrisann Schiro-Geist
Submission Type: Initial
Title: NURSING PROFESSIONALS’ ATTITUDES THAT MAY IMPACT DIAGNOSIS OUTCOME AMONG PATIENTS WITH DISABILITIES
IRB ID: #PRO-FY2023-270
Exempt Approval: February 19, 2023

The University of Memphis Institutional Review Board, FWA00006815, has reviewed your submission in accordance with all applicable statuses and regulations as well as ethical principles.

Approval of this project is given with the following obligations:

1. When the project is finished a completion submission is required
2. Any changes to the approved protocol requires board approval prior to implementation
3. When necessary submit an incident/adverse events for board review
4. Human subjects training is required every 2 years and is to be kept current at citiprogram.org.

For any additional questions or concerns please contact us at irb@memphis.edu or 901.678.2705

Thank you,
James P. Whelan, Ph.D.
Institutional Review Board Chair
The University of Memphis.
Appendix B: Recruitment Flyer

The University of Memphis
College of Education

Volunteers Needed for Research Study on Attitudes Towards Persons with Disabilities

Are you a nursing professional? You may be eligible for a research study to potentially improve medical treatment and services for persons with disabilities.

You May Qualify If You
- Are a practicing or retired nurse
- Are a nursing student
- Are at least 20 years old

Potential Benefits
Participation in this study may improve medical services for persons with disabilities.

FOR MORE INFORMATION: Please contact Lou Conley at louconley3@gmail.com or go directly to the study.

SCAN QR CODE TO ACCESS THE RESEARCH INVITATION LETTER
Appendix C: Invitation Letter

Dear Potential Participant,

My name is Louvisia Conley. I am a doctoral student at The University of Memphis. I am researching factors that may influence nurses’ attitudes when diagnosing patients with disabilities. The name of this research study is ‘Nursing Professionals' Attitudes That May Impact Diagnostic Outcomes Among Patients with Disabilities’.

I am seeking your participation in this research study. You are invited to participate because you are or will be a nursing professional. Participation is voluntary.

If you decide to participate, you will be asked to:

- Complete a 2-part questionnaire that includes a 24-item survey and 11 demographic questions
- Consider recruiting other participants from among your acquaintances.
  - Participants will not be required to recruit others or incur any penalty for not doing so.
  - Participants will not receive any compensation for recruiting or providing referrals, or be offered any incentives.
  - Participants interested in recruiting other study subjects will provide potential recruits with the link to the study invitation letter, which includes the researcher contact information and further instructions.

It should take about 15-20 minutes of your time to complete the 24-item survey and 11 demographic questions. Any information you provide will be kept confidential. Click below to access additional information about the study. If you want to learn more about the study directly from the researcher, contact Louvisia Conley at laconley@memphis.edu.

Thank you for considering this request. Please click “next” to access the informed consent letter.

Regards,
Lou Conley
Appendix D: Informed Consent

INFORMED CONSENT STATEMENT

You are being asked to participate in a research study. Louvisia Conley of the University of Memphis, Department of Education is in charge of the study. Her faculty chair is Dr. Chrisann Schiro-Geist.

The purpose of this research is to investigate factors that may impact attitudinal barriers among nursing professionals when diagnosing the physical symptoms of patients with disabilities. You are being invited to participate because you are a practicing or retired nurse or graduate nursing student and are at least 20 years old. You will be one of approximately 150 subjects to participate in the research.

Should you agree to participate, you will be asked to:

- Complete a questionnaire [24-item survey and 11 demographic questions].
  - You may choose to skip or not to answer any survey question.
- Participate in recruiting other eligible participants from among your acquaintances.
  - You will not be required to recruit or refer others or incur any penalty for not doing so.
  - You will not be asked or required to disclose others’ contact information.
  - You will not receive any compensation for recruiting or providing referrals, or be offered any incentives.
- It should take approximately 15-20 minutes of your time in a single session to complete the survey and demographic questions.
Participating in this study is completely voluntary. If you decide to participate now, you may change your mind and stop at any point.

As a participant in this research study, there may not be any direct benefits for you; however, the results of this study can be used to foster positive attitudes among nursing professionals and potentially improve medical treatment and services for persons with disabilities.

There are no foreseeable risks involved in participating in this study other than those encountered in day-to-day life.

You will not be paid for taking part in this study.

If you have questions about the research, you can contact the investigator, Louvisia Conley at lacolley@memphis.edu or you can contact her faculty chair Dr. Chrisann Schiro-Geist at cschrgst@memphis.edu. If you have questions about your rights as a research subject, please contact the University of Memphis Institutional Review Board at 901.678.2705.

You may print a copy of this consent document for your records.

**ELECTRONIC CONSENT**

By clicking the "I consent" button below, you acknowledge that your participation in the study is voluntary, you meet the criteria, and you are aware that you may choose to terminate your participation in the study at any time and for any reason. Clicking the "I consent" button will take you to the survey and demographic questions. You are free to skip any questions that you choose.

If you decide not to take part in the research study, please decline participation by clicking on "I do not consent".

Please note that this survey will be best displayed on a laptop or desktop computer. Some features may be less compatible for use on a mobile device.

- [ ] **I Consent**, Begin the study
- [ ] **I Do Not Consent**, I do not wish to participate

*Note: Informed consent information was available to prospective participants in Qualtrics.*
Appendix E: Scale of Attitudes Toward Disabled Persons (SADP)

Thank you for participating in this study. The purpose is to examine factors that may impact attitudinal barriers among nursing professionals when diagnosing the physical symptoms of patients with disabilities. If you need more information, contact Louvisia Conley at laconley@memphis.edu

Part I. Read each statement and click on the number from -3 to +3 to indicate how much you agree or disagree.

-3  Strongly Disagree  +1  Somewhat Agree
-2  Disagree  +2  Agree
-1  Somewhat Disagree  +3  Strongly Agree

<table>
<thead>
<tr>
<th>STATEMENT</th>
<th>Double-click on your response choice and then highlight it. Example: -3 -2 -1 +1 +2 +3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The disabled should not be provided a free public education.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>2. Disabled people are not more accident prone than other people.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>3. A disabled person is not capable of making moral decisions.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>4. The disabled should be prevented from having children.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>5. The disabled should not be allowed to live where and how they choose.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>6. Adequate housing for the disabled is neither too expensive nor too difficult to build.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>7. Rehabilitation programs for the disabled is too expensive to operate.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>8. The disabled in many ways are like children.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>9. The disabled need only the proper environment and opportunity to develop and express criminal tendencies.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>10. Disabled adults should be involuntarily committed to an institution following arrest.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>11. Most disabled people are willing to work.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>12. Disabled individuals are able to adjust to life outside an institutional setting.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>13. The disabled should not be prohibited from obtaining a driver’s license.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>14. Disabled people should live with others of similar disability.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>15. Zoning ordinances should not discriminate against the disabled by prohibiting group homes in residential districts.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>16. The opportunity for gainful employment should be provided to disabled people.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>17. Most disabled children in regular classrooms have an adverse effect on other children.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>18. Simple repetitive work is appropriate for the disabled.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
<tr>
<td>19. The disabled show a deviant personality profile.</td>
<td>-3 -2 -1 +1 +2 +3</td>
</tr>
</tbody>
</table>
20. Equal employment opportunities should be available for disabled individuals. | -3 | -2 | -1 | +1 | +2 | +3  
21. Laws to prevent employers from discriminating against the disabled should be passed. | -3 | -2 | -1 | +1 | +2 | +3  
22. The disabled engage in deviant and bizarre sexual behavior. | -3 | -2 | -1 | +1 | +2 | +3  
23. Disabled workers should receive at least minimum wage established for their jobs. | -3 | -2 | -1 | +1 | +2 | +3  
24. Disabled individuals should be expected to fit in our competitive society. | -3 | -2 | -1 | +1 | +2 | +3

Appendix F: Demographic Questions

Part II. For each question, click on the box of the answer that best apply to you. All questions are optional.

1. Your nursing employment status?
   - Nursing student
   - Current practicing nurse
   - Retired nurse

2. How many years have you been in the nursing profession?
   - 1-5 years
   - 6-10 years
   - 11-19 years
   - 20 or more years

3. Highest level of nursing credential/position you attained?
   - Graduate Nursing Student
   - Registered Nurse
   - Nurse Practitioner
   - Nurse Manager and/or Faculty
   - Other_______________________

4. In what setting do/did you primarily work?
   - Hospital / Medical Clinic
   - Residential / Home Care
   - Physician’s office
   - Education / Research based setting
   - Other_______________________

5. Have you had direct interactions with patients with disabilities when performing your nursing duties?
   - Yes, I have had direct interactions.
   - No, I have not had direct interactions.
6. Have you completed nursing assessments and/or developed nursing diagnoses of physical symptoms for people with disabilities?

☐ Yes, I have done this.
☐ No, I have not done this.

7. Have you participated in any type of disability awareness training?

☐ Yes, I have had disability awareness training.
☐ No, I have not had disability awareness training.

8. Are you familiar with the term *diagnostic overshadowing*?

☐ Yes, I am familiar with the term.
☐ No, I am not familiar with the term.

9. Have you witnessed misdiagnosis or inadequate treatment of a person with a disability *(physical, developmental, behavioral or emotional, or sensory impaired disorders)*?

☐ Yes, I have witnessed this.
☐ No, I have not witnessed this.

10. Gender to which you identify?

☐ Female
☐ Male
☐ Prefer not to answer

11. Please select your age group.

☐ 20 – 34
☐ 35 – 49
☐ 50 – 64
☐ 65 and over

*Note:* Participants accessed the demographic questions through Qualtrics.
Appendix G: Participant Demographics

Table G1

Demographic Statistics of Participants

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Category</th>
<th>101 Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n (%)</td>
</tr>
<tr>
<td>Employment status</td>
<td>Graduate nursing student</td>
<td>31 (30.7)</td>
</tr>
<tr>
<td></td>
<td>Practicing nurse</td>
<td>47 (46.5)</td>
</tr>
<tr>
<td></td>
<td>Retired nurse</td>
<td>21 (20.8)</td>
</tr>
<tr>
<td>Years in the profession</td>
<td>1 – 5</td>
<td>22 (21.8)</td>
</tr>
<tr>
<td></td>
<td>6 – 10</td>
<td>19 (18.8)</td>
</tr>
<tr>
<td></td>
<td>11 – 19</td>
<td>15 (14.9)</td>
</tr>
<tr>
<td></td>
<td>20+</td>
<td>43 (42.6)</td>
</tr>
<tr>
<td>Highest credential/Position attained</td>
<td>Graduate nursing student</td>
<td>23 (22.8)</td>
</tr>
<tr>
<td></td>
<td>Registered nurse</td>
<td>29 (28.7)</td>
</tr>
<tr>
<td></td>
<td>Nurse practitioner</td>
<td>15 (14.9)</td>
</tr>
<tr>
<td></td>
<td>Manager or faculty</td>
<td>15 (14.9)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>19 (18.8)</td>
</tr>
<tr>
<td>Setting primarily work(ed)</td>
<td>Hospital/medical clinic</td>
<td>58 (57.4)</td>
</tr>
<tr>
<td></td>
<td>Residential</td>
<td>17 (16.8)</td>
</tr>
<tr>
<td></td>
<td>Physician’s office</td>
<td>7 (6.9)</td>
</tr>
<tr>
<td></td>
<td>Education/research based</td>
<td>18 (17.8)</td>
</tr>
<tr>
<td></td>
<td>Other</td>
<td>1 (1.0)</td>
</tr>
<tr>
<td>Direct interaction with PWD</td>
<td>YES</td>
<td>99 (98.0)</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>2 (2.0)</td>
</tr>
<tr>
<td>Completed assessments or developed diagnoses for PWD</td>
<td>YES</td>
<td>92 (91.1)</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>9 (8.9)</td>
</tr>
<tr>
<td>Disability awareness training</td>
<td>YES</td>
<td>67 (66.3)</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>32 (31.7)</td>
</tr>
<tr>
<td>Familiar with term: Diagnostic overshadowing</td>
<td>YES</td>
<td>68 (67.3)</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>32 (31.7)</td>
</tr>
<tr>
<td>Witnessed misdiagnosis or inadequate treatment</td>
<td>YES</td>
<td>55 (54.5)</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>46 (45.5)</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>17 (16.8)</td>
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<tr>
<td></td>
<td>Female</td>
<td>76 (75.2)</td>
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<tr>
<td></td>
<td>Non-binary/Third gender</td>
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<tr>
<td></td>
<td>Prefer not to say</td>
<td>5 (5.0)</td>
</tr>
<tr>
<td>Age group</td>
<td>20 – 34</td>
<td>33 (32.7)</td>
</tr>
<tr>
<td></td>
<td>35 – 49</td>
<td>24 (23.8)</td>
</tr>
<tr>
<td></td>
<td>50 – 64</td>
<td>27 (26.7)</td>
</tr>
<tr>
<td></td>
<td>65+</td>
<td>17 (16.8)</td>
</tr>
</tbody>
</table>

Note. PWD = People with Disabilities