

IMPLICIT ATTITUDES OF NURSING FACULTY TOWARD  
INDIVIDUALS WITH DISABILITIES

By

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To the faculty of Washington State University:

The members of the Committee appointed to examine the dissertation of  
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INDIVIDUALS WITH DISABILITIES

Abstract

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Students with visible disabilities have been known to be denied admission to nursing education programs on the basis of the disability and treated poorly once admitted. While little is known about the number of individuals affected by these discriminatory behaviors, the American Nurses Association provides clear statements against discrimination in the profession of nursing and in nursing education. Building on the extant knowledge that attitudes affect behavior, many researchers have explored the explicitly stated attitudes of nurse educators toward individuals with disabilities. However, explicit attitudes are subject to social desirability and may not be the best measure of true attitudes. Implicit attitudes, which are unconscious or unspoken, are a better measure of attitude and were measured through the use of the Disability Attitudes Implicit Association Test (DA-IAT) through Project Implicit. This study used a mixed- methods, cross-sectional research design to explore nurse educators' implicit attitudes toward individuals with visible disabilities. A total of 132 nurse educators who teach primarily in baccalaureate programs completed the DA-IAT, a demographic survey, and an open-ended survey. The mean DA-IAT score for the sample was 0.76(SD 0.46) which indicates that this sample of nurse educators holds

strong preference for able-bodied individuals. The demographic questions revealed that one variable, *more than monthly contact with individuals with disabilities*, was a statistically significant finding of difference of implicit attitudes toward disabled individuals,  $t(128) = -2.184, p=.029$ . The open-ended questions were completed by 118 participants and evaluated through content analysis. Four main areas of focus were identified: *the admissions process, admission criteria, the DA-IAT test, and responses to DA-IAT test results*. Participants' narrative comments, along with participants' mean DA-IAT score, represent a unique resource and a step toward a more candid and clear view of issues faced by disabled applicants, students, and faculty in nursing education. This more challenging and more truthful picture of the nursing education is a necessary foundation for the discussions of policies and other work that is required to create a genuinely inclusive environment.

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## **Dedication**

This study is dedicated to any individual who wishes to pursue a career in nursing but has not taken the first step due to fear or previous experiences of discrimination.

## CHAPTER ONE

### INTRODUCTION

#### Statement of the Problem

Students with visible disabilities have historically been denied admission to schools of nursing and have been discriminated against in nursing education programs solely on the basis of a disability (Maheady & Fleming, 2005; Maheady, 2003; Danielle, 2008). No published statistics are available about the number of nurses or students with visible disabilities. The American Community Survey estimated that of the 188 million people 16-64 years of age working in the United States, an estimated 13.8 million, or 7.3%, have a disability (U.S. Census Bureau, 2005). Although the number of nurses or nursing students with disabilities is unknown, it would follow that the potential applicant pool of students with disabilities who want to be nurses should approximate the percentage of the general population with disabilities. However, the number of students who have been granted admission to nursing programs and have completed these programs appears disproportionately small. The lack of statistics about nurses and students with disabilities is possibly due to the lack of awareness among researchers that this issue exists; therefore, no one has collected the information. Additionally, the choice of these individuals to not disclose a disability may be due to fear of discrimination, due to the nature of the disability or the stigma associated with disabilities. The lack of student nurses with visible disabilities indicates discrimination against the disabled, adds to a lack of diversity in nursing and nursing education and ultimately leads to reduced opportunities for disabled individuals to work as nurses.

This dissertation explores the issue of visible disabilities in the nursing field from several theoretical, moral, ethical, and legal perspectives. A visible disability is defined as any handicap that is obvious to the onlooker. For example, an individual with a visible disability might be someone who uses a wheelchair for mobility, is missing a limb, uses sign language to communicate, or uses a service dog (World Institute on Disability, 2009). Several barriers to the admission of disabled persons to nursing programs are discussed. Critical Disability Theory (Pothier & Devlin, 2006; Tremain, 2005) provides a comprehensive framework for the study of the issues pertinent to individuals with disabilities. Critical Disability Theory calls for a barrier-free society for individuals with disabilities, which is not currently the case in Western society of 2010. Both the medical model of disability, which is a less favored framework in which to view disability, and the social model of disability, which is the more contemporary view of disability (Rioux & Valentine, 2006), will be discussed along with current viewpoints about the usefulness of these models. Concepts of normalization, integration, and inclusion will be discussed in terms of how they relate to higher education and nursing education (Allen, 2005).

The Americans with Disabilities Act (ADA) of 1990 prohibits discrimination against people with disabilities in employment, transportation, public accommodation, communications, and governmental activities (ADA, 1990). Section 504 of the Rehabilitation Act of 1973 specifies that qualified persons with disabilities cannot be discriminated against if, with reasonable accommodation, they can perform the essential job functions (Rehabilitation Act of

1973, 1973). The ADA defines a person with a disability “as a physical or mental impairment that limits one or more major life activity; or has a record of such an impairment; or is regarded as having such an impairment” (ADA, 1990, p. 7). In addition, the ADA states:

No qualified individual with a disability shall, by reason of the disability, be excluded from participating in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity (ADA, 1990, p. 7).

Schools that ask about the presence of a disability on an admissions application are in violation of the ADA. The legal basis of the ADA provided a structure from which to examine legal compliance of nursing programs in the issues pertinent to individuals with disabilities.

The ethical and moral perspectives of the admission and treatment of disabled individuals in nursing education will be explored in part through a suggested ethical project of inclusion in education in which all players benefit (Allan, 2006). In addition, the American Nurses Association Code of Ethics (ANA, 2001) will be explored as it provides a strong statement stating that all professional nurse relationships should value the worth of others. The ANA also provides a position statement banning discrimination in the profession of nursing, based on many characteristics, including disability (ANA, 2003). The nursing profession has very strong mandates to value all individuals, yet as the literature will reveal, this edict has not consistently been applied in the availability of nursing education to individuals with disabilities.

The empirical literature will be explored from two points of view: legal compliance with

the ADA and the moral and ethical imperative in nursing regarding the treatment of individuals with disabilities. Literature has documented the history of students with disabilities in higher education and nursing education in terms of legal issues (Helms & Weiler, 1993; Helms, Jorgensen & Anderson, 2006) and legal cases involving the admission and accommodation issues (*Southeastern Community College v. Davis*, 1979; *Darian v. University of Massachusetts, Boston*, 1997). Some researchers have documented that students with disabilities have been admitted to nursing education programs and have documented the types of disabilities that affected the students (Pardeck, 2003; Swenson, Foster & Champagne, 1991; Magilvy & Mitchell, 1995; Persuad & Leedom, 2002; and Watson, 1995). Issues of legal compliance with the ADA will be explored.

A number of barriers to increasing the number of nurses with disabilities have been documented in the literature. Among these barriers are issues of recruitment and admission of individuals with disabilities into nursing education. Some minority groups have been vigorously recruited into nursing education (Klisch, 2000; Stewart, 2005), but the marginalized group of disabled individuals has not. The medical profession has been charged with admitting more vulnerable individuals by the president of the American Association of Medical Colleges, including individuals with disabilities (Delisa & Thomas, 2005), but no such mandate has arisen in nursing. A few authors have documented the admission of disabled individuals into their respective nursing programs (Persuad & Leedom, 2002; Magilvy & Mitchell, 1995), but these reports are limited to descriptive surveys. Admission and recruitment issues will be explored in

terms of legal compliance and the ethical and moral mandates set forth by the ANA.

Accommodation is another barrier to the successful completion of nursing programs by individuals with disabilities. A few nurse researchers have documented practices around accommodation in nursing education (Watson, 1995; Maheady, 1999). These issues will be described from a legal compliance and ethical imperative point of view.

Another of these barriers is that the use of technical standards, or a list of an individual's abilities, was reported to be discouraged in the medical field by VanMatre, Nampiaparampil, Curry and Kirschner (2004), as was the belief that all medical school graduates should be *undifferentiated graduates*. An undifferentiated graduate is an individual who is competent to perform all skills necessary of any physician. VanMatre and colleagues additionally reported the use of *physician extenders* to be acceptable in medicine. A physician extender is an individual who is able to complete a hands-on skill, such as assessing breath sounds, and report the findings to the physician; then the physician must use critical thinking to make a decision about patient care. In nursing, two different sets of standards are available as competencies for professional nursing, one from a national nursing organization and another from a regional nursing organization (AACN, 2001; Southern Regional Educational Board, 2007). One example of such standards is sufficient mobility to be able to complete physical assessments, maneuver in tight spaces, and perform CPR. The use of such standards in nursing education has not been embraced unanimously by nurse educators across the country. Davidson (1995) reported that only a minority of nursing schools use such a list of standards in the admission of students with

disabilities. The literature reported here adds to the reader's understanding of the history in nursing education. It informs where the profession has been in regard to admission criteria, suggests direction for the future, and documents barriers for individuals with disabilities who wish to gain admission to a program of nursing education.

A significant barrier for individuals with disabilities is how they are treated by faculty, nurses at the clinical institutions, patients, and fellow students. Two reports are available which document student experiences in nursing education (Maheady, 2003; Danielle, 2008). This literature will be explored through the viewpoints of legal compliance with the ADA and the ethical and moral imperative in the nursing profession to value every individual.

Nurse educators who sit on admission committees may or may not be aware of the presence of a disability during the application review process. If a school requires that all applicants be personally interviewed by faculty members, a visible disability would likely become known. If a school requires the applicants to provide only written responses to questions, the disability may or may not be divulged by the student. Therefore, it is possible that nurse educators may know nothing of the presence of a disability until the first day of coursework. The implicit attitudes about disabilities held by nursing faculty may have an effect on the admission of disabled students as well as on the experience of students, either positive or negative, while in the nursing program.

Another barrier to the admission of disabled persons to nursing programs is the attitudes of nurse educators. While some admission decisions may be explained in terms of grade point

average and experience, the attitudes of nurse educators toward the disabled have a significant influence on the educators when making decisions about the admission or denial of admission to students with visible disabilities. Because attitudes predict behavior and are an indicator of values (Greenwald, 1990), the measurement of attitudes will be an initial step toward nurse educator awareness of attitudes and their effect on the consideration of admission of individuals with disabilities into nursing education programs and ultimately the progression and success of disabled students within nursing education. Nursing faculty are considered gatekeepers of the nursing profession and generally make admission decisions regarding the students who apply to nursing programs (Swenson, Foster, & Champagne, 1991). Explicit attitudes are stated attitudes that can be measured through the use of a survey tool. Explicit attitudes, however, are subject to social desirability, or the tendency to make oneself look good in the eyes of others (Greenwald, McGhee, & Schwartz, 1998). Therefore, explicit attitude measures may not measure actual attitudes. Implicit attitudes differ in that they may exist outside of conscious awareness (Greenwald & Banaji, 1995) and therefore are a truer measure of attitudes. Some nurse researchers have measured the explicitly held attitudes of nurse educators toward individuals with visible disabilities (Sowers & Porter, 2002; Christensen, 1998; Ney, 2004; and Trawick, 1990). While explicitly held attitudes are clearly important for understanding the admissions environment, it is also probable that those making admissions decisions are affected by preconceptions of which they may not be aware.

### **Statement of the Purpose**

Students have been denied admission to schools of nursing (Maheady & Fleming, 2005)



and have been targets of discrimination (Maheady, 2003; Danielle, 2008) based solely on the presence of a visible disability. Nursing faculty members typically review the applications for admission into nursing programs and make the decisions about which applicants to admit. While a small number of studies have evaluated the factors that influence nurse educators when they consider the admission of disabled students, this study will give needed attention to the unelaborated implicit attitudes of nurse educators toward individuals with visible disabilities. Several studies explore other issues pertinent to students with disabilities, such as the responsibilities of institutions set forth in the Americans with Disabilities Act (Persuad & Leedom, 2002; Watson, 1995) or the underlying assumptions about the physical capabilities within the role of nurses (Swenson, Foster & Champagne, 1991); nonetheless, careful consideration of implicit attitudes of nurse educators is a necessary and overlooked first step to truly understanding this issue. Failure to consider the implicit attitudes of nurse educators will result in an incomplete picture of the admissions environment. Awareness of implicitly held attitudes toward disabled individuals is critical, just as it is toward other groups that are targets for discrimination, such as in the case of racial bias. In order to promote the integrity of the nursing profession, nurse educators must be aware of their implicit attitudes that are in play during the review of applications for admission and of the treatment of individuals with disabilities who are admitted to the program. Implicit attitudes of nursing faculty toward individuals with disabilities will be measured through the use of the Implicit Association Test (Greenwald & Banaji, 1998; Project Implicit, 2008). The Implicit Association Test (IAT) is a set of web based tests which measure association between linked concepts and have been taken by

more than 2.5 million people worldwide. The premise of the test is that an individual can respond more quickly to concepts that are highly associated than to those concepts which are not.

Participants are shown images and terms and are asked to categorize them into disabled or non-disabled images and good or bad terms. The response times when comparing congruent and incongruent images and terms are compared and an IAT effect score is calculated. The test will give each participant an indication of the amount of preference he or she holds toward able-bodied or disabled individuals. Implicit attitude tests are critical for assessing nurse educator's attitudes since other attitude measures may be less than reliable. A fundamental step towards understanding why and how disabled students are underrepresented in the profession is the measurement of implicit attitudes toward the disabled. A specific test available through Project Implicit measures implicit attitudes toward individuals with disabilities and is called the Disability Attitude Implicit Association Test (DA-IAT). The purpose of this study is to measure the implicit attitudes of nurse educators toward individuals with visible disabilities by using the DA-IAT.

### **Specific Aims and Research Question**

This research will examine the implicit attitudes toward disabled individuals that influence nurse educators as they consider applicants for admission into programs of nursing education and deal with students in their programs. Very little has been published about nurse educators and the factors that influence their treatment of students with visible disabilities. The research question for this study is:

*What are the implicit attitudes of nursing faculty that influence the admission and subsequent treatment of students with visible disabilities?*

The specific aims of this study are to:

- 1) Measure the implicit attitudes of nurse educators toward individuals with disabilities using the Disability Association Implicit Attitude Test,
- 2) explore whether Implicit Attitude Test scores can be predicted by demographic variables such as exposure to individuals with disabilities and clinical nursing specialty,
- 3) recommend interventions to facilitate the admission of otherwise qualified disabled persons into nursing programs and improve the treatment of disabled individuals once admitted, and
- 4) recommend direction for future research.

### **Significance and Rationale**

The empirical findings of this study have the potential to influence admission practices in higher education in nursing and other health care disciplines. The findings may advance the understanding of how implicit attitudes of nursing faculty influence the admission and treatment of students with visible disabilities. This shift in understanding could result in an increase in the number of students with visible disabilities who are admitted into nursing education programs. Such a shift could have the following effects: 1) An increase in the diversity of student nurse populations, 2) closer biodemographic approximation of the nurse population with individuals in

the general society, 3) enhanced quality of patient care through an appreciation of what it is like to live with a disability, 4) decreased employment discrimination toward the disabled, 5) decreased likelihood of lawsuits in higher education based on discrimination toward disabled individuals, and 6) movement of the nursing profession toward a position of leadership among professions by providing a welcoming atmosphere to all individuals, honoring the gifts each individual brings, and thus creating a richer profession as a result.

## CHAPTER TWO

### REVIEW OF LITERATURE

#### Introduction

Individuals with disabilities struggle with gaining admission into nursing education programs as well as with the treatment they receive once admitted. The issues of students with disabilities will be explored through Critical Disability Theory, the medical and social models of disability, and the concept of normalization. The literature reveals two primary areas of focus: the need for nurse educators to maintain legal compliance with the mandates in the Americans with Disabilities Act (ADA,1990) and moral and ethical imperatives for inclusion of disabled individuals into nursing education and thus into the nursing profession.

The empirical literature reviewed includes what is known about the number of people affected by these issues. Moral and ethical perspectives that have emerged from the nursing profession will be explored through the use of documents from the American Nurses Association (ANA, 2001; ANA, 2003) and studies about nurse educators' knowledge about the ADA. Literature that documents barriers to increased representation of disabled individuals in nursing education and nursing will be described in the following areas: recruitment of disabled individuals, admission, technical standards or essential functions of nursing, accommodation issues, and issues involved with the retention and progression of individuals with disabilities within the profession. Additionally, faculty perceptions regarding disabled students and the learning environment in nursing education will be explored.

Lastly, the values held by nurse educators will be explored. Because attitudes predict behavior and are indicative of values, the attitudes held by nurse educators toward disabled individuals will be explored. Explicitly held, or stated, attitudes are well documented in the literature but are subject to repression based on social desirability. Implicitly held, or unconscious, attitudes are another indicator of values and in fact, may be a better predictor of behavior. The implicit attitudes held by nurse educators toward disabled individuals have not been documented in the literature and therefore they are the focus of this study. Implicit attitudes will be measured through the use of the Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998).

### **Literature Search**

The following databases were searched to identify literature about the admission of students with physical disabilities: Pub Med, CINAHL, Lexis Nexis Academic, Medline Plus, ERIC, and ICPSR. The following search terms were used in many combinations: nursing student, disabilities, nursing school admission, discrimination, Critical Disability Theory, legal cases ADA, faculty attitudes, Americans with Disabilities Act, attitudes toward disabled individuals, implicit attitudes, implicit association test, and disability attitude implicit association test. These terms were used in the search for appropriate literature as the framework for the study became apparent.

### **Theoretical Underpinnings**

**Definitions of Nursing.** The definition of nursing in current use guides the profession by

establishing what is and is not expected of nurses. The American Nurses Association (ANA, 2003) has identified the following six essential features of professional nursing that contribute to contemporary definitions of nursing :

1. Provision of a caring relationship that facilitates health and healing,
2. attention to the range of human experiences and responses to health and illness within the physical and social environments,
3. integration of objective data with knowledge gained from an appreciation of the patient or group's subjective experience,
4. application of scientific knowledge to the process of diagnosis and treatment through the use of judgment and critical thinking,
5. advancement of professional nursing knowledge through scholarly inquiry, and
6. influence on social and public policy to promote social justice (p.5).

Drawing from the six essential features of professional nursing, the ANA established the following definition of nursing: "Nursing is the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities, and populations" (ANA, 2003, p 6).

**Definitions of Disability.** In general, definitions of disability fall into one of two categories: those that categorize individuals as *abnormal* as a result of a disability and those that do not. The ADA defines a disabled individual as one who "1) has a physical or mental

impairment that substantially limits one or more major life activities; or 2) has a record or history of such an impairment; or 3) is perceived or regarded as having such an impairment” (ADA, 1990, p. 7). The ADA recognized major life activities to include working, caring for oneself, hearing, seeing, walking, learning, and breathing (ADA, 1990; Pardeck, 1998). The American Heritage Online Dictionary of the English Language (2009) defined disability as “a disadvantage or deficiency, especially a physical or mental impairment that interferes with or prevents normal achievement in a particular area, or something that hinders or incapacitates.” The Merriam-Webster Online dictionary (2008) defines disability as “inability to pursue an occupation because of a physical or mental impairment.” The United Nations (U.N., 1993) provided separate definitions for impairment and disability. Impairment is defined as “any abnormality of psychological or anatomical structure or function” and disability as “any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being” (p. 32). The above definitions focus solely on the difference of the individual that is considered abnormal and that sets the individual apart.

The World Institute on Disability (2009) defined disability in terms of handicap and offered this definition: A handicap is:

a function of the relationship between disabled persons and their environment. It occurs when they encounter cultural, physical, or social barriers which prevent their access to the various systems of society that are available to other citizens. Thus handicap is the loss or limitation of opportunities to take part in the life of the community on an equal level with others. Individuals with disabilities would not be considered disabled if social



barriers were not in place to keep them from functioning at what is considered a normal level. Therefore, disability is a societal problem that all people must work to accommodate (para 20).

The two viewpoints on disability are very different: one focuses on what the individual is lacking and suggests individuals have personal barriers to overcome, while the other focuses on what society lacks in providing for needs of all its citizens. The second viewpoint is embraced by the disability community and is the more contemporary viewpoint. Issues pertinent to disability today are similar to issues of racial and gender difference in the history of the United States. For example, today it would be ridiculous to consider the experience of being a woman as an “impairment that substantially limits one or more major life activities” (ADA, 1990, p. 7). Most in the United States would be outraged if existing laws to guarantee equal educational experiences for African-American children stated that these children have a skin color that *adversely impacts their educational performance*. Racial and gender difference are not commonly viewed as something to overcome, yet disabilities are still seen this way. The definition of disability provided by the World Institute on Disability (2009), provides the most comprehensive and contemporary view of disability available today.

**Critical Disability Theory.** Interactions between disabled individuals and nursing faculty take place in a society in which differences often form the basis of exclusion, and disabled individuals make up a group which routinely experiences exclusion. Some insight into the dynamics of exclusion may be gleaned from the work of Goffman (1963). According to Goffman’s groundbreaking study of stigma, the encounter between the “normal” and the

“different” leads to a series of suppositions and projections which make the encounter complex:

When the stranger is present before us, evidence can arise of his possessing an attribute that makes him different from others in the category of persons available for him to be, and of a less desirable kind—in the extreme, a person who is quite thoroughly bad, or dangerous, or weak. He is thus reduced in our minds from a whole and usual person to a tainted, discounted one. Such an attribute is a stigma, especially when its discrediting effect is very extensive; sometimes it is also called a failing, a shortcoming, a handicap. It constitutes a special discrepancy between virtual and actual social identity. (Goffman, 1963, p. 2-3)

Goffman asserts that this projection of a “virtual social identity,” which replaces a person’s “actual social identity” and forms the basis for exclusion, takes place throughout society. Devlin and Pothier (2006) describe exclusionary practices as unequal citizenship or “dis-citizenship”. To some, citizenship may indicate the right to vote and to hold a passport from a particular country. For others, citizenship may indicate the ability to fully participate in all aspects of society. Full participation in society might include equal access to education, equal access to job opportunities, and the ability to function as a productive member of society. The authors suggest a change in how citizenship is viewed and is necessary to make full participation possible for all. That change would involve the incorporation of disabled individuals into society, policies that address the needs of disabled individuals, and a unique legal view that would provide actual inclusiveness for disabled individuals rather than mere abstract rights. One assumption of

Critical Disability Theory is that it is inevitable that our society will be structured around able-bodied norms. The goal of Critical Disability theory, therefore, is to challenge this assumption so that disabled individuals can more fully participate in society. The nursing profession, along with other health professions, faces specific challenges in that health professions are part of the system that works with and classifies individuals with disabilities. The consideration of a student with a disability for admission to a nursing program is a different prospect than the consideration of the same student to say a law, history, or English program. Therefore, Critical Disability Theory will be used to frame issues pertinent to students with disabilities and nursing education.

A belief central to Critical Disability Theory is that disability is an issue of politics and power-over, on the part of able-bodied individuals, and of powerlessness, on the part of disabled individuals (Devlin & Pothier, 2006). This power-over is clearly evident in higher education. For example, a university student who has a hearing disability may request accommodation from the office for disabled students on campus according to the mandates of the ADA. The professor then receives a letter that specifies that the student needs copies of the lecture notes or Powerpoint slides before each class session. The professor may refuse to comply with the accommodation. The student with the disability is then left in the uncomfortable position of either saying nothing or reporting the professor and demanding the appropriate accommodation. In either situation, the disabled student still needs to take the course and be graded by this professor. Clearly, the power lies with the professor.

Critical Disability theorists have indentified another key piece of ideology surrounding the disabled. Those identified as disabled are viewed by the non-disabled as having fallen into

misfortune and that, through this misfortune, they are no longer viewed as “normal” (McColl, James, Boyce, & Shortt, 2006). Individuals who are “normal” have privileges in our society that “abnormal” individuals (disabled) do not. These privileges are so pervasive in Western society that they seem inevitable. For example, the paper currency used in the United States is all the same size. An individual with little or no visual acuity would not be able to independently buy groceries and be certain that he is receiving proper change. Another example is buildings that have no elevator. An individual who utilizes a wheelchair for mobility would be unable to visit a friend who lives in an apartment building without an elevator. The structure of our society favors the able-bodied individual. The goal of Critical Disability Theory is to challenge these long-held beliefs and practices so that disabled individuals can participate fully in society.

Individuals with disabilities are particularly vulnerable to techniques of normalization in the environment of higher education, and this drive toward normalization has resulted in the exclusion of a large number of otherwise qualified disabled applicants (Hibbs & Pothier, 2006). The medical model has been used to describe the environment in higher education for students with disabilities. This model focuses on the individual with the disability and the treatment of that individual that can restore the individual to a more *normal* state. This viewpoint keeps the medical community closely connected with individuals with disabilities as an attempt is made to rehabilitate or help them fit as closely as possible to the concept of normal. University students are expected to conform as much as possible to what is *normal* or usual or to at least have the goal of moving toward what is *normal*. This counterproductive drive to be *normal* reinforces the medical model of disability and takes students focus off school work.

***Medical Model of Disability.*** The health professions have characterized those with disabilities within a medical model for years (Stalker & Jones, 1998). In this model, a disability is considered a chronic illness, disabled individuals take on a *sick role*, and focus is placed on the inability of the individual to function as others do. Human variation is seen as deviation from the norm, as a pathologic condition, and as an individual burden and personal tragedy (Hibbs & Pothier, 2006; Oliver, 1990). This personal tragedy view assumes that the disability itself will trigger a grief reaction similar to that of bereavement in both the individual with the disability and others in society. This belief leads to the view that the responsibility to fix the problem is predominately on the individual. The focus within the medical model is on individual incapacity and the key role of health professionals in this model is one of verification. From this viewpoint, the appropriate professional response is to focus on improving the individual's functioning and physical capabilities. In addition, the limitations of the disabled individual are seen as the cause of the difficulties.

Nirje (1980) suggests that disabled individuals should be able to enjoy “patterns of life and conditions of everyday living which are as close as possible to the regular circumstances and ways of life of society.” (p. 137) The author termed this view as *normalization*. The problem with this viewpoint is that it reinforces the medical model through the choice of the word *normalization*, thereby labeling disabled individuals as abnormal. Therefore, the responsibility lies with the individual to become as normal as possible.

Implicit assumptions of the medical model include that the disabled individuals see themselves as disabled or abnormal and that they want to fix the abnormality. A nurse born with

one arm described her experiences during her nursing education (Danielle, 2008). She described the belief she held in her formative years that she was a normal person who accomplished day to day tasks in a different way than others. Once admitted to nursing school, she experienced attitudes, barriers, and discrimination due to her disability for the first time in her life. She was questioned how she thought she could be a nurse with her obvious defect. This woman clearly did not see her disability within the medical model as she entered nursing education, yet the nursing faculty did.

Wolfensberger (1972) relies on deviancy theory as a way to explain how individuals who work in caring professions, such as nursing, continue to segregate and dehumanize individuals. It is through stigmatization that individuals are set aside and treated differently, even in health professions where encounters with physical ailments are expected. Society tends to respond to perceived deviancy by segregating, destroying, reversing, or preventing it. Reversing or preventing disability, in particular, relies on the medical model of disability. The disabled individual is seen as something other than normal, and an attempt is made to correct what is seen as a problem. An attempt to reverse or prevent disability relies on the belief that a disabled individual is abnormal and needs fixing. This desire to prevent disability is abhorred by many individuals within the disability community (French, 1994) because, in their view, to speak of the prevention of disability is to devalue disabled individuals. Prevention of disability also may lead to discussions of abortion, selective abortion, and eugenics as ways to limit the number of individuals with disabilities. In addition, various cultures place different meanings upon disability. For example, Gwaltney (1970) describes the viewpoints of Mexicans who live in

remote villages with high incidence of blindness among its inhabitants. The villagers view blindness as a gift from God, and the blind villagers were treated with special respect. This example underscores the fact that one cannot assume to understand how people view their disability and place meaning on the experience of having a disability.

***Social Model of Disability.*** The social model of disability varies greatly from the medical model in terms of focus and solution. Hibbs and Pothier (2006) define the social model of disability as “the identity through which people with a wide range of cognitive, sensory, physical, and emotional conditions are bound by common political and social experiences.” (p. 204). In this viewpoint, disability does not lie within the individual but rather in the social environment and social practices that restrict participation of individuals with impairments. The focus is on emancipation from restrictive social practices and the demedicalization of disability. The limitations that individuals experience stem from the failure of society to provide what is needed rather than from innate difficulties stemming from the disabilities themselves.

In summary, Critical Disability Theory, the Medical Model and Social Model of Disability inform the current study by their emphasis on disabilities in contemporary society. They show how individuals with disabilities are currently treated, have been treated in the past, and provided for. They also suggest how circumstances for individuals with disabilities might be improved.

## **Legal Compliance**

Knowledge of legal issues related to equal opportunities for and treatment of individuals

with disabilities is of critical importance to educators. The Americans with Disabilities Act (ADA, 1990) prohibits discrimination against individuals with disabilities. Individual educators may or may not be familiar with the ADA in terms of the prevention of legal action against a school due to non-compliance. Because of the financial risks involved with potential litigation, legal issues are a crucial piece of, and perhaps a strong motivator for, a discussion of the educational environment for individuals with disabilities.

**ADA and Accommodation.** The most current legislation that protects the rights of individuals with disabilities is the Americans with Disabilities Act (ADA, 1990). The act, which was passed by the United States House of Representatives on July 26, 1990, establishes rights for disabled individuals in certain settings. The purpose of the ADA is to protect individuals with disabilities in the areas of employment, public and private colleges and universities, activities of state and local government, telecommunication services, and other miscellaneous issues. The ADA is divided into 5 titles, with each of the above sections signifying a title.

The ADA defines disability in a three- pronged manner. An individual must meet only one of the three parts of the definition to be considered an individual with a disability. The three part definition of disability in the ADA is that the individual:

1. Has a physical or mental impairment that substantially limits one or more major life activities; or
2. has a record or history of such an impairment; or
3. is perceived or regarded as having such an impairment (ADA, 1990, p. 7)



Reasonable accommodation, as established by the ADA (1990), is a requirement to make education, employment, and other services accessible to those with disabilities. Guidelines for accommodation are available, but the expectations are not clear due to a lack of a clear understanding of the words *reasonable* and *undue*. The term *reasonable accommodation* may include:

Making existing facilities used by employees readily accessible to and usable by individuals with disabilities; and job restructuring, part-time or modified work schedules, reassignment to a vacant position, acquisition or modification of equipment or devices, appropriate adjustment or modifications of examinations, training materials or policies, the provision of qualified readers or interpreters, and other similar accommodations for individuals with disabilities (ADA,1990, p. 9-10).

The term *undue hardship* means an action requiring significant difficulty or expense, when considered in light of the factors set forth below:

1. The nature and cost of the accommodation needed under this chapter;
2. the overall financial resources of the facility or facilities involved in the provision of the reasonable accommodation; the number of persons employed at such facility; the effect on expenses and resources, or the impact otherwise of such accommodation upon

the operation of the facility;

3. the overall financial resources of the covered entity; the overall size of the business of a covered entity with respect to the number of its employees; the number, type, and location of its facilities; and
4. the type of operation or operations of the covered entity, including the composition, structure, and functions of the workforce of such entity; the geographic separateness, administrative, or fiscal relationship of the facility or facilities in question to the covered entity. (ADA, 1990, p. 10-11)

Once an individual has been determined to have a qualified disability under the ADA definition, accommodation may be needed to allow the individual to perform essential functions of the job. Reasonable accommodation is not well defined; however, the Equal Employment Opportunity Commission (EEOC, 2000) provides examples of reasonable accommodation which include:

1. Modifications or adjustments to the work environment, or to the manner or circumstances under which the position held or desired is customarily performed, that enable a qualified individual with a disability to perform the essential functions of that position; or
2. Modifications or adjustments that enable a covered entity employee with a disability to enjoy equal benefits and privileges of employment as are enjoyed by its other similarly

situated employees without disabilities (para 4).

The reasonableness of the accommodation is determined by the individual employee and the individual employer. The ADA does not allow an employer to weigh the value of the employee against the cost of the accommodation. Undue hardship to the employer is considered to be accommodation which requires excess difficulty or expense to the employer. Again, what is considered to be excessively difficult or expensive is not well defined and is consequently open to interpretation.

Newsham (2008) describes the notion of ‘reasonable accommodation’ as applying solely to an employment setting, not to an educational setting. Rather, the term ‘academic adjustment’ is appropriate for academia. The author reports that the purpose of academic adjustment is “to minimize or eliminate the effects of impairment of a particular activity and to provide opportunity and access to programs, activities, and services for students with disabilities” (pp. 112). Examples of academic adjustments would include allowing lectures to be taped, providing examinations in large print, making available note takers for class lectures. All these adjustments are aimed at altering the academic environment so that the student’s work is reflected rather than the disability.

**Legal Compliance with the ADA.** The Americans with Disabilities Act of 1990 (ADA, 1990) is the federal law that mandates rights for disabled individuals. The purpose of the ADA is to provide a clear, national mandate to eliminate discrimination against disabled individuals; to

provide clear, consistent, and enforceable standards addressing discrimination against disabled persons; to ensure the Federal Government enforces the established standards, and to address the daily issues faced by disabled individuals (McCleary-Jones, 2005; Westrick, 2007). This national mandate applies to nursing education programs nationwide.

One of the early legal cases involving the admission of students with disabilities into nursing education programs predates the ADA. In *Southeastern Community College v. Davis* (1979), the plaintiff was denied admission to the nursing program on the basis of hearing loss. The school had the plaintiff's hearing evaluated by an audiologist and determined that she was unsafe to practice as a nurse due to hearing loss. The plaintiff claimed the college violated Section 504 of the Rehabilitation Act of 1973. The district court agreed with the decision of the college. The plaintiff then appealed to the Court of Appeals of the Fourth District, which mandated that the college review the plaintiff's application without consideration of the hearing disability to determine if the plaintiff was otherwise qualified for the program. The court mandated that the college make appropriate accommodations for the student. The college then appealed the decision to the Supreme Court. The court findings stated:

There was no violation of § 504 when petitioner concluded that respondent did not qualify for admission to its program. Nothing in the language or history of Section 504 limits the freedom of an educational institution to require reasonable physical qualifications for admission to a clinical training program. Nor has there been any

showing in this case that any action short of a substantial change in petitioner's program would render unreasonable the qualifications it imposed. (Southeastern Community College v. Davis, 1979, p. 47).

The court also found that there was no way to accommodate the requests of the plaintiff without significantly changing the teaching methods used in the college. Ultimately the court upheld the decision not to admit the plaintiff to the program. Today, this student might or might not be admitted into a nursing education program. The creation of the ADA in 1990 provides some guidance for faculty when evaluating student applications. However, whether or not the majority of nursing faculty are familiar with the ADA is unknown.

In summary, it is critical that nursing faculty be aware of the legal issues surrounding the potential admission or denial of a disabled individual's application for admittance. The desire to avoid costly lawsuits, along with the issue of justice (the upholding the legal rights of students), should strongly motivate nurse educators to familiarize themselves with the law as they evaluate applications for admission into a nursing education program. This legal environment may well affect explicitly held attitudes toward disabled nursing school applicants and spotlight the discrepancy between these attitudes and the actual treatment of disabled applicants and students. Such a reality makes a careful study of implicit attitudes more urgently necessary and useful.

### **Moral and Ethical Imperative for Inclusion**

Many faculty members may wonder *what is the right thing to do?* The answer to this ethical or moral question adds a critical element to a broader understanding of disability. Several

concepts provide a framework for the discussion of a moral and ethical imperative for inclusion of disabled individuals including an attitude of valuing all people, a suggested ethical project of inclusion, and an understanding of the current environment in higher education for accommodations.

**Valuing All.** When setting out to deal with issues of inclusion and exclusion from an ethical point of view, one is quickly led away from a narrow focus on disability to a discussion of the core values that underpin the nursing profession and our society as a whole. Ultimately, several questions arise. Is the nursing profession to remain a primarily white female profession of able-bodied individuals? Do those in the profession want to continue to exclude various groups of individuals because they are different? Is inclusion of all something that the nursing profession values? Does nursing want to value each individual with the gifts and talents that he or she brings, regardless of gender, ethnicity, or disability? What happens when an able-bodied nurse becomes disabled due to an injury of accident- will he or she still be allowed to work as a nurse? These questions are explored in an ethical project suggested by Allan (2006) that includes a critique of the current system through which students with disabilities request accommodation.

**Allan's Ethical Project.** Allan (2006) described a point of view unique in education in which the right thing to do is framed in terms of an ethical project of inclusion. The author suggests that in this ethical project all involved members, including mainstream students, disabled students, teachers, and researchers, have responsibilities. Allan provides a significant distinction between integration and inclusion. She defines integration as only referring to the addition of students with special educational needs into classrooms with mainstream students.

Allan defines inclusion as:

The premise that an individual has a right to belong to society and its institutions, which therefore implies that others have obligations to ensure that this happens. In particular, inclusion necessitates the removal of barriers that may prevent individuals from belonging. These barriers may deny individuals access to buildings or materials or cultural resources, or may convey messages to individuals that they do not really belong. Removing these barriers implies major structural and attitudinal changes and a fundamental shift away from the deficit-oriented thinking that has for so long driven educational practices (p. 282).

The view of inclusion presented here concurs with Devlin and Pothier's (2005) description of the current general treatment of disabilities as dis-citizenship. Both Allen and Devlin and Pothier similarly describe the rights of all individuals to belong to society and list all the institutions associated with belonging. The focus on a goal of removing barriers to inclusion is in alignment with the views of Allan, Devlin and Pothier, *The Social Model of Disability and Critical Disability Theory*.

One wonders what the differences might be between current practices in education and what Allan (2006) suggests with her understanding of inclusion. Allan argues that teachers could indicate the type of support needed by the individual student, with both the teacher and the student giving input on the consequences of providing the support or doing without the support. Through negotiation with the student about how to best provide support, the teacher will likely

avoid reinforcing the student's sense of being different and will hopefully minimize barriers to interactions with peers. In addition, this plan would give some power to the student to have a voice in the process, which is lacking in the current academic environment. The ethical project makes the desires and needs of individuals with disabilities a priority over the presumed needs that professionals have assigned to them.

Inclusion, according to Allan (2006), involves having recognition from all stakeholders that they are part of the system, that there is something in the system that needs to be changed, and that they can contribute to change if they consider themselves and their position in the system critically. This concept is a vital piece for educators who work with individuals with disabilities.

In Allan's view, mainstream students make up another set of stakeholders. Allan (1999) reports that mainstream students see inclusion as good for both the individuals with disabilities and for them. The mainstream students reflected they observed their disabled colleagues learning and increasing their social skills by participating in class. The mainstream students reported they benefit from inclusion in the following ways: they felt they were contributing to social change by being members of an inclusive course and they increased their respect for their disabled peers.

The imperative for inclusion and the honoring of individuals reaches beyond the subjects of the study to researchers, since researchers play an important role in the manner in which they relate to individuals with disabilities (Allan, 2006). A non-disabled researcher could determine the goals of the research without input from individuals with disabilities and consequently



produce scholarship that may do no more than to further the career of the researcher. In such a study the researcher would continue to have control and power over individuals with disabilities. The ideal way for researchers to gain inclusion for individuals with disabilities is to talk to them as research subjects and determine their needs and goals. A non-disabled researcher could easily misunderstand the issues of disabled individuals and unintentionally perpetuate the process of maintaining control and power over these individuals without such an open dialog.

In summary, the ethical project described by Allan (2006) invites all players to critique their role in the education of individuals with disabilities and to transcend previous practices. Inclusion as an ethical project means that disabled students can be helped to manage the disabling situations and barriers they encounter. All of the changes suggested by Allen could give all players involved larger, more active, more affirmative, and richer lives. In addition, this ethical project would provide an environment in which all individuals have barrier-free access to education, which aligns with the Social Model of Disability and the changes to society called for in Critical Disability Theory.

**Accommodation and Ethics.** The Americans with Disabilities Act (1990) provides a structure and process for students with disabilities to be able to receive the help necessary to be able to function in a college or university setting. Typically the process is as follows. First the student must provide documentation of the existence of a disability to the student office for disabilities on campus. Next, this office must determine the nature of the disability and the type of accommodation that would be helpful to the student. The same office is charged with deciding whether the recommended accommodation is reasonable for the university to provide. The

student and faculty are notified of the recommended accommodation and then the student hopes the faculty will provide the recommended accommodation.

The purpose of the process described above is so that universities can meet their legal obligation to avoid discrimination against students with disabilities. Some school administrations may hold the assumption that providing accommodation will level the playing field so that all students have an equal chance to be successful. Furthermore, some may view compliance with the ADA as the limit of obligations on the part of the institution.

Many problems exist with the current process for students with disabilities seeking access to assistance in higher education (Hibbs & Pothier, 2006). The first problem is that the student must initiate the process and provide documentation that a disability exists. This leads to an assumption that all students are non-disabled and therefore not entitled to accommodation unless a disability can be proven. At first glance, students have no requirement to self-identify as having a disability in a university. However, self-identification ultimately becomes a requirement if the student wants to be treated fairly. Significant disadvantages exist in self-identifying a disability: the student openly takes on the role of disability (they are set apart from the norm and become a source of inconvenience); the student may become a target for blatant discrimination; the student may be actively discouraged from applying to certain academic programs; and, if self-identification is done in the admissions process, the student may be denied admission altogether. Additionally, students who self-identify as having a disability must seek out documentation of the disability from a medical professional (Hibbs & Potheir, 2006). The assumption underlying this requirement is that medical professionals are experts in academic accommodations. A more

accurate expert on the accommodation needed may well be the student who has lived with the disability.

A second problem with the process of a student requesting accommodation is the reliance on the medical model of disability (Hibbs & Pothier, 2006). The focus in this system is on the individual who is not *normal*. The individual must seek out accommodation and prove the existence of a disability rather than be welcomed into a process that focuses on what is lacking in terms of societal support for students with disabilities. Additionally, accommodations made are generally attempts to restore normalcy to the individual with the disability. The use of the medical model to frame disability is pervasive in higher education, but perhaps counterproductive.

An additional problem with the accommodation process is the power structure within which the student with the disability is placed. For example, a deaf student may seek accommodation in the form of requesting that a faculty member face the class when speaking, as the student reads lips well. The student is at the mercy of the faculty member to provide the accommodation. Should the faculty member forget to face the class or decide not to follow the recommended accommodation, the student is left without power. The student could choose to report the faculty member to the office for students with disabilities. However, the student is dependent on the faculty member to evaluate academic performance and provide a grade for the course, something he must consider before reporting the teacher. Therefore, an unequal balance of power exists.

The current process by which students seek accommodation for coursework can be daunting. The student who requests accommodation falls into dis-citizenship as described by Devlin and Potheir (2006) and is not able to access independently some of the opportunities available in the general society to others. The disability itself could be a barrier to the student being successful at requesting accommodation. Allan's (2006) suggestion of an ethical project would help balance power between student and faculty, give students with disabilities a voice in needed accommodations, meet the legal compliance mandates of the ADA, and improve the overall learning environment for students with disabilities. Overall, this ethical project framework might help to prevent dis-citizenship and ensure that the nursing profession is caring for individuals according to its own stated values.

## **Empirical Background**

### **Data in Health Sciences and Nursing**

A significant lack of information exists about the issues of individuals with disabilities in health care educational programs, including nursing. These issues will be examined through exploration of the existing literature and application of the concepts of legal compliance and moral and ethical treatment.

Very little is known about the number of individuals with disabilities in health profession educational programs. Also unknown is the number of individuals who apply for and are denied admission into these programs. The number of students with disabilities currently in health profession education programs is unknown. The scant information available is presented here.

The 2005 American Community Survey estimated that, of the 188 million people 16-64 years of age working in the United States, an estimated 13.8 million, or 7.3%, have a disability (U.S. Census Bureau, 2005). The disabilities fall into several categories: including visible, learning, mental health, or chronic illness. Disabled individuals are more likely to be hired into part-time, low status jobs (Louvet, 2007) and are three times more likely to be unemployed than individuals without disabilities (Triomphe, 1995). Disabled individuals are seen as less desirable employees and face discrimination in hiring (Gething, 1992; Loo, 2001; and Ravaud, Madiot, & Ville, 1992). All of these conditions may be operative in the initial step for individuals who wish to work in health professions: application to and acceptance into a medical degree program.

Historically, few applicants with visible disabilities have been admitted into health professions educational programs and consequently individuals with disabilities are underrepresented in these programs in comparison to the general population (Chubon, 1989; Kowalski & Rizo, 1996). Moore-West and Heath (1982) reported the prevalence of students with physical disabilities enrolled in medical school between 1976 and 1980 to be 0.23% or a total of 72 students. The majority of these students (56%) were academically successful. A more recent study (Wu, Tsang, & Wainapel, 1996) reported a slightly lower percentage (0.19%) of medical students with physical disabilities between 1987 and 1990.

The number of student nurses and nurses in practice with visible disabilities is unknown. Some states in the United States have mandatory programs to monitor the number of nurses with disabilities that are similar to programs that monitor individuals with drug addiction (Maheady, 2004), but this is not a universal practice. These systems are not conclusive either as nurses may

not disclose a disability due to the fear that they will lose their job or license.

In summary, very little is known about the number of nurses, nursing students, and individuals with disabilities who wish to become nurses in the United States. Few reporting and tracking systems currently exist. Those in operation are flawed in that they rely on self-reporting. Individuals who do have a disability are likely to practice self-protection by not disclosing a disability due to fear of discrimination.

### **Moral and Ethical Perspective of Nurse Educators about Inclusion**

Moral and ethical imperatives regarding inclusion provide a fundamental framework for the understanding and critique of the educational environment in contemporary nursing programs. The educational environment is explored through the American Nurses Association (ANA) Code of Ethics (2001) and empirical literature regarding nurse educators' knowledge about legal compliance to the law established by the ADA. Knowledge about the mandates in the ADA would provide evidence of some level of belief by nurse educators that the issues of disabled students and legal obligations of nursing programs are significant. A good working knowledge of these issues would highlight the value of the inclusion of disabled individuals into nursing education. In addition, in order to ethically make decision about which students to admit into nursing education programs, nursing faculty must be familiar with the ADA.

The Code of Ethics for Nurses (ANA, 2001) provides a strong statement of support for inclusion of individuals with disabilities in nursing education programs. The first statement in the Code of Ethics is "The nurse, in all professional relationships, practices with compassion and

respect for the inherent dignity, worth, and uniqueness of every individual, unrestricted by considerations of social or economic status, personal attributes, or the nature of health problems” (ANA, 2001, p.7). This statement does not limit the scope of the professional nursing relationship to nurse-patient relationships, but describes “all professional relationships”. The Code of Ethics requires that all nurses, in any professional setting, value all humans and treat them with dignity. The accompanying interpretive statement declares “The nurse respects the worth, dignity, and rights of all human beings irrespective of the nature of the health problem. The worth of the person is not affected by disease, disability, functional status, or proximity to death “(ANA, 2001, p.7). Clearly nursing’s primary professional organization mandates that all humans should be valued regardless of personal circumstances. The same opportunities should be given to each individual regardless of the presence of a disability.

Another document from the ANA is a position statement on discrimination and racism (ANA, 1998). This document specifically mandates that nurses should not discriminate on the basis of disability in nursing education or nursing practice. The statement reads:

Discrimination and racism continue to be a part of the fabric and tradition of American society and have adversely affected minority populations, the health care system in general, and the profession of nursing. Discrimination may be based on differences due to age, ability, gender, race, ethnicity, religion, sexual orientation, or any other characteristic by which people differ. The American Nurses Association (ANA) is committed to working toward the eradication of discrimination and racism in the profession of nursing, in the education of nurses, in the practice of nursing, as well as in the organizations in

which nurses work. The ANA is further committed to working toward egalitarianism and the promotion of justice in access and delivery of health care to all people (para 13).

No published literature documents what nurses or nurse educators believe about the inclusion of individuals with disabilities in nursing education or of what nurses believe about either of the statements presented by the ANA. This represents a significant gap in the literature.

Sowers and Smith's (2004) study reports nursing faculty's knowledge about individuals with disabilities in nursing education. The authors surveyed faculty about their awareness of issues related to students with disabilities and the extent to which they felt they could benefit from an educational program focused on this area. The range of responses to choose from was 1-6, with a 1 indicating low knowledge/benefit and a 6 indicating high knowledge/benefit. The knowledge/benefit questions include the legal obligations of nursing programs and faculty to provide for disabled students, and methods of teaching and providing accommodation for disabled students in both the classroom and clinical settings. The 88 respondents had a mean score of 3.42 for knowledge about legal obligations, 2.65 for knowledge about teaching in the classroom, and 2.53 for knowledge about teaching and strategies for providing accommodation in the clinical setting. The respondents clearly felt they would benefit from more education with an overall mean rating of 4.84 for all the questions. This study, while small, clearly reveals that nurse educators do not have a good understanding of the educational environment in terms of the issues of students with disabilities. This lack of knowledge does not bode well for the nursing profession as a whole in terms of compliance with the ADA nor with larger questions of ethics and justice.



Clearly, nurses have a mandate from their main professional organization to treat others in any professional nursing relationship with dignity and respect. Professional nursing relationships clearly include the relationships between nursing faculty and potential and actual nursing students. In general, nursing faculty do not have a good understanding of the legal obligations of educational institutions to assist disabled students, nor do they have a good understanding of how to provide accommodations for nursing students in and out of the classroom. Because nursing faculty work directly with students who have disabilities and make program admission decisions, nurse faculty need to have a good understanding of the ADA. In order to value each individual, nursing faculty must embrace the ethical guidelines provided by the ANA (2001), learn what is needed to be able to assist disabled individuals in the classroom and clinical setting, be knowledgeable about the ADA, and consider students in the same light as they consider patients. Faculty must treat individuals with disabilities as worthy of assistance and not as sources of inconvenience be they patients, applicants, or students. Only then will nursing education begin to meet the needs of individuals with disabilities.

### **Barriers to Increased Representation**

Individuals with disabilities have faced barriers in higher education in terms of recruitment, admission, accommodation, retention, and progression. The empirical literature documents challenges faced by individuals when seeking nursing education. The published literature is explored and critiqued here in terms of issues of power, moral and ethical choices, and legal compliance with the ADA (1990).

**Recruitment.** While the medical profession has been charged by the president of the American Medical Association with increasing the diversity of medical school graduates in terms of race, gender and disability (Delisa & Thomas, 2005), no similar initiative has arisen in the nursing profession. Rather, there has been an emphasis on a goal of having the population of practitioners mirror the population they serve. Bohne (2004) recommends a paradigm shift in nursing education from that of tolerating differences among individuals to valuing differences among individuals. Bohne suggests that nurse educators should recruit disabled individuals into nursing.

Sowers and Smith (2002) agree with Bohne's suggestion to move beyond toleration of individuals who are different to valuing individuals who are different. A number of authors embrace the idea of working on issues of recruitment and retention of ethnically diverse students in nursing education (Anders, Edmonds, Monreal, & Galvan, 2007; Klisch, 2000; Stewart, 2005; Wilson, Andrews, & Leners, 2006). In addition, Williams (2004) suggests strategies to recruit and retain minority nursing faculty members. The authors suggest that nursing education has begun to value racial differences in nursing as a means to understand different cultures better, but the same is not true of disability. Marks (2007) also suggests that disabled students should also be recruited into nursing education and that this act will assist educational programs in helping students learn culturally competent nursing care for disabled individuals. The disability community continues to be excluded from education, career opportunities, and society in general.

**Admission.** The admission of students with disabilities is one of the most critical pieces

to understand the educational environment of nursing programs. What is known about admission practices of health care professions, including nursing, will be explored. The experiences of students and faculty in all health professions' educational processes will be instructive, as they all include similar tasks such as hands-on skills and clinical rotations in institutions outside of the university setting.

In 1997 the president of the American Association of Medical Colleges charged the medical profession to "take active steps to ensure that our healthcare practitioner community mirrors society's gender, racial, and ethnic mix" (DeLisa & Thomas, 2005, p. 5). Recently, the same president included disabled applicants in his charge to increase diversity among the nation's physician providers. However, no similar mandate has arisen within nursing education.

Pardeck (2003) reports results of a survey of social work programs in 12 universities regarding their admission policies concerning students with disabilities. The author interviewed representatives from 12 social work programs. Six of twelve programs reported not posting information about the program or disabled individual rights in an accessible format. All respondents reported that applicants for admission are selected according to a set of criteria based on functions viewed as essential in social work. Only two of twelve programs reported the use of testing during the admissions process that did not discriminate against individuals with sensory or speaking impairments. Ten of twelve respondents reported that medical exams were not part of the admissions process unless exams were required of all applicants. The author clearly identified programs and practices that discriminated against students with disabilities. As in the case of medical school faculty members, the attitudes of social work faculty toward the

disabled have not been surveyed.

Ashcroft et al. (2008) reported on extensive discussions by nursing faculty members about the issues of students with disabilities and included the issues of admission. The authors concluded that the goal is to offer admission to the best academically qualified students that the faculty members expect could meet the program requirements. This ability to meet program requirements could be accomplished either with or without accommodation. The problem with this philosophy is that these faculty members are making assumptions about who might and might not be successful in a nursing education program based on a disability and assumptions about the capabilities of individuals based on what they may know about disabilities. Admission decisions made based on the assumptions made about the abilities of others is not based on evidence and could be discriminatory.

Persuad and Leedom (2002) utilize a descriptive survey of 52 nursing education programs in California to determine the impact of the ADA on student admission and retention practices. Schools reported the presence of students in the program with cerebral palsy (n=1), a missing arm (n=1), a prosthetic leg (n=1), a hearing loss (n=19), decreased vision (n=4), and back injuries (n=5). Accommodation to assist the needs of these students, such as adaptive equipment and adapted psychomotor skills, were described. Nineteen percent of the schools (n=10) reported having applicants for whom appropriate accommodation could not be provided. Respondents commented that limitations were set by clinical institutions (which forbade that employees or students work in wheelchairs or on crutches or would not accommodate an individual who could not lift or bend at all due to a back injury). These clinical institutions also

are obligated to follow the ADA and by not providing accommodation are in violation of the law.

Magilvy and Mitchell (1995) report the results of a descriptive survey of nursing school faculty in the United States regarding their experiences with students with disabilities. Two hundred faculty members were invited to participate and responses from 68 schools were collected. Of the respondents, 25 have experience with students with hearing disability, 13 have experience with students with mobility issues, and 7 have experience with students with visual impairment. The authors report some students' use of adaptive equipment to assist them in their classes. In addition, the authors also report a qualitative analysis of the experiences of faculty with disabled students. One important discovery found by the authors is that there was creative problem solving used by faculty to assist students with their learning. For example, a student who used canes for ambulation and balance was initially barred from an observational experience in the operating room because the canes might carry germs. The faculty arranged for the canes to be disinfected and the student was allowed to observe the surgery. Another student had an arm amputation and struggled to complete certain skills. The faculty arranged for the student to use a battery operated arm and helped the student learn to use the arm. Consequently the student was ultimately successful in the program. Creative problem solving can be and is used in many circumstances to assist students to fully participate in their learning programs.

Swenson, Foster, and Champagne (1991) surveyed nursing school faculty about their response to students with physical, mental, and substance impairments. Approximately 6% of the existing 1098 nursing schools in the United States were surveyed. The respondents reported that

nursing faculty are most often responsible for creating the admission criteria for their schools of nursing and that schools usually turn to the state board of nursing and federal guidelines for creating these admission criteria. The authors reported that 68% of schools relied on a preadmission physical exam for students with physical disabilities to identify whether individual students met the admission criteria. In contrast, 13% of programs relied on the physical exam for identification of mental health issues and only 7% of schools reported the use of the physical exam to identify substance abuse issues. 33% of schools reported that if a physical disability were identified, they would often deny admission to that student. Clearly, then, the authors' report showed discriminatory behaviors toward disabled individuals.

Watson (1995) surveyed 247 nursing programs about the admission of students with disabilities and the issues pertinent to these students. Forty-five percent of schools reported they had admitted students with disabilities. The types of disabilities, ranked from high to low frequency, are learning, mobility, hearing, and visual impairments. Fifty-three percent of schools reported that an attempt is made to identify disabled individuals during the admissions process. Twenty-one percent of respondents request voluntary disclosure of a disability on the application form; however, this process of identifying disabled individuals is illegal. The author concludes that since the enactment of the ADA in 1990, schools of nursing have increasingly been faced with issues pertaining to students with visible disabilities and that schools should be prepared to properly deal with these issues.

Helms, Jorgenson and Anderson (2006) describe legal guidelines within the ADA that should be applied when considering an applicant to a nursing program with a visible disability.

First, schools should not ask applicants if they have a disability. To ask about the presence of a disability in the admissions process and subsequently denying access to a student with a disability could set up a program for a lawsuit on the basis of discrimination. Second, once the student is admitted, the student can provide documentation of a disability and request accommodation. Faculty members should work with the office for student disabilities to provide the requested accommodations. Helms and Weiler (1993) insist that schools of nursing do not need to lower or change academic standards for disabled students. In addition, the authors suggest that nursing program admission committees come up against 3 issues when considering the admission of disabled individuals: 1) issues of definition (which include whether the student identified a disability and whether appropriate accommodation is available for the disability), 2) issues of competence (deciding whether the applicant is otherwise qualified to be a nurse), and 3) issues of accommodation (what adaptations in the program might be needed to accommodate the student).

Maheady and Fleming (2005) describe the experience of a student born without a left hand in application for admission to nursing school. During the application process, the student was given a skills test in which she was asked to give injections, to mix IV fluids, and to don sterile gloves. She was denied admission due to her inability to complete every task in the test and was told she would “endanger a patient’s life” as a nurse (p. 27). Since she was the only applicant required to take the skills test, the author concluded the student experienced discrimination through the process. Ultimately, this student was granted admission to a different nursing education program and currently is a licensed nurse.

In summary, nursing education is a complex work environment that both challenges and provides benefit to nurse educators through experiences with non-traditional students. The medical profession provides an example of a call for inclusivity from their professional school association leadership. Some nursing schools fulfill their legal obligation and report the admission of students with disabilities in the literature. On the other hand, medical exams should not be part of the admission process and constitute a discriminatory and illegal action. The experience of the student born with one hand who was required to complete a skills test documents exclusionary and illegal treatment by nursing schools since other students did not have this same requirement. Some schools therefore are not in legal compliance with the mandates of the ADA and clearly are not respecting and valuing the worth of each individual. Some nurse educators provide a good ethical basis in the admission and appropriate treatment of disabled students that is consistent with the ethical guidelines established by the ANA Code of Ethics (2001). In addition, some nurse educators document creative problem solving with disabled students. These educators solve problems in the name of inclusivity and thus treat disabled individuals with respect and maintain good ethical treatment. However, the literature reveals that nurse educators are inconsistent in legal compliance and in the ethical treatment of individuals with disabilities.

**Technical standards or essential functions in medicine or nursing.** The ability to complete hands-on skills, either with or without accommodation, is frequently used as a standard when considering an applicant for admission to medical school or has been used in the consideration of applicants to nursing education programs. The terms technical standards,



essential functions, and core performance standards are used interchangeably in the literature. These practices and terms will be explored and critiqued with regard to legal compliance with the ADA, ethical standards, and the definition of nursing as established by the ANA.

The medical profession has an established set of standards for medical education. These standards state that a candidate for a medical degree must have abilities in the following areas: 1) Observation--performed in a reasonably independent manner, 2) communication skills, 3) motor skills-- performed in a reasonably independent manner, 4) intellectual-- conceptual, integrative, and qualitative abilities, and 5) behavioral and social attributes (Association of American Medical Colleges, 1979). VanMatre, Nampiarampil, Curry and Kirschner (2004) surveyed medical students, faculty, and attending physicians about technical standards. The authors asked participants about “undifferentiated graduates” (used to describe individuals who have acquired general knowledge and skills in all fields of medicine and are able to complete all skills and enter any specialty of medicine). An overwhelming 69% of respondents reported they did not believe that all medical school graduates need to be undifferentiated graduates. One respondent noted “It is absurd to think that any physician today has a complete set of skills such that he or she can practice medicine independently of many other individuals with other skills” (p.58). In addition, the authors found that the medical profession embraces the use of “physician extenders” as a means of accommodating disabled students or physicians. A “physician extender”, according to VanMatre and colleagues, is an individual trained to complete physical assessments of patients and reports his or her findings to the physician who cannot see, hear, or have touch sensation.

The physician then is required to use critical thinking to diagnose the problem. There is no reference in the literature to anything other than undifferentiated graduates in nursing, and consequently no reference to extenders in the nursing profession.

The literature shows no unanimity among nurse educators with regard to the utility or necessity of defined competencies in nursing admissions or nursing education. The National Council of State Boards of Nursing (NCSBN) has defined a list of competencies for the practice of professional nursing (AACN, 2001). The defined competencies are the following: 1) the ability to see, hear, touch, smell, and distinguish colors, 2) verbal and writing ability with clarity, efficiency, and accuracy, 3) manual dexterity and fine and gross motor skills, 4) ability to learn think critically, assess, reach judgments, and 5) emotional stability and ability to accept accountability and responsibility. The Southern Council for Collegiate Education for Nursing (SCCEN) Southern Regional Educational Board 2007 Task Force established a set of guidelines for essential functions for nurses that was thought to assist schools of nursing with compliance with the ADA. The SCCEN defined nursing as a practice profession and identified standards in the areas of critical thinking, interpersonal communication, motor skills, mobility, hearing, visual, and tactile skills. Both lists have a focus on the hands-on skills associated with professional nursing. Neither the list of competencies established by the NCSBN nor the essential functions from the SCCEN have been adopted for universal use among nursing schools in the United States.

Davidson (1994) surveyed nursing programs to identify the extent to which the SCCEN standards are used in the admissions process. Only 14% of 164 schools reported asking

applicants about the SCCEN standards and a mere 16.7% identified that their school has an accepted list of essential functions. The author recommended that all schools of nursing adopt a list of essential functions in order to clearly define the eligibility requirements for admission in the nursing program. Katz, Woods, Cameron and Milam (2004) describe the adoption and implementation of a list of essential qualifications for undergraduate nursing students in nursing programs. The authors conclude that essential qualifications are of value to the school of nursing in defining the abilities, skills, attributes, and knowledge necessary for success in an academic program. In addition, the presence of such established qualifications assists the faculty and administrators when making decisions about academic issues. The essential qualifications described here are consistent with the competencies described by the SCCEN and the NCSBN.

The National Organization of Nurses with Disabilities (NOND) acknowledges that some schools of nursing use lists of competencies when considering the admission of a student with a disability (NOND, 2009). However, NOND has a strong statement about the use of such standards in an educational setting: “Essential functions is a term used in employment, not education. The essential functions of a nurse are not the same, nor should they be, as the technical standards for a nursing student” (para 6). The use of such criteria in admission decision making for applicants to nursing school could be considered discriminatory.

Arndt (2004) provides a provocative alternative view of disabled individuals and the essence of nursing in relation to essential functions of nursing. In a description of working with a wheelchair bound student, Arndt describes her transformational journey from questioning whether the student could function as a nurse to witnessing that the student is well qualified for

nursing, and recommends that educators consider replacing hands-on skills, which generally make up the lists of essential functions of nursing, with the essential characteristics and abilities necessary for any nursing role. The author recommends that the list should include attributes of cognitive ability, integrity, caring, and interpersonal skills, rather than specific physical skills and abilities.

Only a minority of nursing schools have adopted technical standards or lists of essential functions. Some of the drive in codifying such standards is motivated by the desire to avoid legal difficulties or to clarify decisions regarding academic standards and performance. However, not all registered nurse job descriptions include the requirement that a nurse be able to perform every hands-on skill nurses could be asked to perform on the job. One might ask: why then are these lists of essential functions of nurses used to exclude disabled individuals from simply entering nursing education? Nurse educators will find their thinking is challenged by a very different view of essential functions of nursing, one in which characteristics such as integrity, caring, and cognitive ability are central. This alternative view of essential functions might well lead nursing education toward a concept, already accepted in the medical profession, of differentiated graduates and extenders. Higher quality care for patients, as well as inclusivity for nurses, may well be the result.

In the end, one might also ask: how the nursing profession wish to represent itself? As a profession that excludes those judged to be “unable” or “incapable”? Or as a profession that treats its members the same as it treats its clients-- with care, compassion, and respect for individual differences? What is the ethically right thing to do? Clearly, the literature examined

above documents the existence of exclusionary practices by those with power in nursing education. The lists of essential functions or technical standards of nursing do not correspond to the definition of nursing established by the ANA (2003). The essential features of nursing that were identified by the ANA and are the basis of the ANA's definition of nursing do not include any hands-on skills. Rather they focus on cognitive ability and the ability to relate to other human beings. Lists of technical standards, while not illegal, are discriminatory against individuals with disabilities. The use of such lists adds to the existing imbalance of power in favor of nursing faculty over disabled individuals, and does not further the valuing of individual differences and gifts.

**Accommodation.** Once admitted into nursing education programs, individuals with disabilities can face significant challenges in their education. One issue faced by students is requesting and receiving appropriate accommodation for a disability. The experiences of some students and faculty with accommodation are described below.

The University of Victoria documented student experiences with faculty and accommodations (1994). One student reported:

There is always, initially, an uneasy feeling when I approach a prof [sic] with the issue of my needs. It depends on the professor's attitude whether this feeling goes away or increases. I feel on the defensive and get angry inside. I don't want to have to defend the fact that I have special needs. It is hard to be dependent on other people's kindness and understanding (p. 23).

The vulnerability and powerlessness expressed by this student are consistent with Goffman's description of encounters between those described as "normal" and those described as "different." We are reminded that these difficulties are not necessarily due to an exceptionally uncooperative instructor, but rather are features of interactions between "normal" (professors) and "different" (disabled students).

Maheady (1999) reports the results of a qualitative study of the experiences of student nurses with disabilities. The author describes three types of accommodation reported by the student participants. The first was self-initiated accommodation, such as self-management of hypoglycemia or, in the case of a student with hearing loss, visually focusing on the patient to uncover clues to changes in vital signs or physical status. The next type of reported accommodation was technological accommodation. Students reported the use of a variety of accommodation devices such as adapted telephones, hearing aids, beepers that vibrate, and special stethoscopes. Some of these devices were provided by the student and some were provided by the school. The third accommodation was institutional accommodations. Wheelchair bound students, for instance, were provided with a close-in parking spot, a clicker for opening automatic doors, and typical classroom accommodations.

Watson (1995) surveyed 247 baccalaureate nursing schools to determine their practices surrounding students with disabilities. Sixty-six percent of schools responded there was an office for student disability on campus. Examples of reported accommodations included tutoring, books on tape, taped lectures, special patient assignments, augmented stethoscopes, and lifting

assistance. Three of the eighty-five schools that admitted students with known disabilities reported that students filed complaints against the program based on denial of disability accommodation. The reason for one complaint was unknown. Another complaint was from a student with hearing loss who requested and was denied an interpreter for both the classroom and clinical settings. The student graduated while the complaint was under review. The third complaint involved a student with a back injury who requested extra time on a clinical performance examination. The complaint was withdrawn after the school offered the student extra testing time.

In *Darian v. University of Massachusetts, Boston* (1997) the plaintiff, who was a nursing student, was deemed to have a disability because of complications from a difficult pregnancy. The student was enrolled in a classroom and clinical course, which were the final requirements needed to complete her degree. The university allowed her the following accommodations: to see only one patient per clinical day, to take patient files home, to make up missed clinical time, to not have to climb stairs, and to observe, seated, the scheduling of home health care visits. In addition, the plaintiff was offered an incomplete grade in the course and the opportunity to graduate on time. The Plaintiff refused the offer and missed clinical days. In addition, she did not take the final exam, did not participate in a group project, and subsequently received an “F” in the course. The court determined that pregnancy complications met the requirement for disability and then needed to determine whether the university provided sufficient accommodation for the

disability. The court found that any further accommodation would have lowered the academic standard and therefore determined that the university did meet the required accommodation.

In summary, nursing education presents unique challenges in the area of accommodation of students with disabilities. Nursing faculty need to work within the legal guidelines established by the ADA to make accommodations in both the clinical and classroom settings. Some student and faculty experiences fall within the legal compliance of the ADA and some do not. Clearly faculty members are the individuals who hold the majority of the power in these situations. Further, students who were not provided accommodation likely struggled to succeed in their education whether or not they pursued legal help. The ethical obligation, as called for in the ANA Code of Ethics, is to respect the dignity of all and to assist those who are vulnerable, including students with disabilities. Clearly this practice does not consistently happen when students are denied requested accommodations that could help them be successful. Providing accommodations without lowering academic standards is necessary to ensure that nurse educators give equal access to learning opportunities to all students and enrich diversity within the nursing profession.

**Retention and progression.** The treatment of students once admitted into a nursing education program and their retention and progression present other issues documented in the literature which will be explored below. Maheady (1999) documents the experiences of 10 individuals with visible disabilities from admission to a nursing program through graduation. One student with hearing loss described how she applied to a program, disclosed the disability,



and consequently was denied admission because the director “didn’t think I could make it though the program” (p. 168). The student reapplied at a later date, did not disclose the disability, was admitted, and did graduate. The student reported:

Throughout the program, I only had problems with the director and with one instructor.

The director was not verbally negative about my hearing, but her attitude was decidedly negative toward me as a person. I always felt she was waiting for me to slip up (p.168).

The explicit acceptance of the student contrasted with the discouraging way she was treated once enrolled. Another student stated, “Our biggest barriers are not physical, they’re mental...not every nurse needs to give shots...use all ten fingers...or walk into a room” (p.165). A participant who uses a wheelchair explained, “People in the medical field have a hard time with somebody with a disability. They don’t know if you’re as smart or as hardworking...People have said to me “You can’t be a nurse, you’re in a wheelchair”(p.167). Maheedy concludes that nursing students with disabilities have to cope with pessimistic and negative attitudes from society, institutions, faculty, staff, peers, patients, and employers.

One internet clip documents the experience of a woman born without a hand and part of her arm (Danielle, 2008). The woman was admitted to a nursing education program and in the first week of the program the faculty told her they were “shocked and totally appalled that I had not disclosed my disability thus far” (min 2:01). She was approached by the Dean of the program and berated in front of faculty and other students. The Dean questioned how she expected to be an RN with one hand. The Dean never observed the student’s work in classroom and clinical

experiences. The student was required to supply notes from her primary care provider that stated she was physically able to continue in the program. In addition, she was told she was put on “extra watch” to make sure her performance was adequate.

The researcher may be tempted, especially given the scarcity of data, to label these behaviors as merely the shortcomings of individual nurse educators rather than a pervasive problem. Sociologists remind us that these behaviors are part of a set of possibilities in interactions between “normal” and “different,” or stigmatized, individuals throughout society. Goffman (1963) makes this point succinctly: “first appearances are likely to enable us to anticipate [a stranger’s] category and attributes, his ‘social identity’—we lean on these anticipations that we have, transforming them into normative expectations, into righteously presented demands.” (p. 2). Given what we know from sociologists about human tendencies to categorize others on sight, it is not surprising that the experiences of many students with disabilities in nursing education programs have clearly been discriminatory. Students with disabilities have been required to complete tasks, such as completing skills tests, which other students need not perform, in order to remain in nursing programs. Disabled students have been the recipients of verbal abuse. Students have been judged differently due to their disability. Students have not been supported by faculty members in a manner that would encourage them to be successful. Again, the mandate in the ANA Code of Ethics (2001) to respect individual differences and dignity regardless of disability has not been widely followed. Is nursing a profession that wants to treat patients well but not treat those within the profession well?

**Perceived Environment in Nursing Education.** Only a small amount of literature has

documented the experiences of nursing faculty who have worked with students with disabilities in nursing education programs. The existing literature presents interactions that are positive. Bueche (1983) describes the experience of working with a student with significant hearing loss in both the classroom and clinical settings. Several strategies were used by professors to assist this particular student in the classroom, including enunciating carefully, talking at a moderate pace, and increasing the use of audiovisual aids in the classroom. Strategies used in the clinical setting were the use of a mutually agreed upon system of communication between the faculty and the student, the facilitation of client and staff acceptance of the student, and the use of technology to assist the student. Rhodes, Davis, and Odom (1999) also describe their experiences working with a profoundly deaf student. The first hurdle for the student was to educate the faculty members about the needs of the student. The primary accommodation for the student was the presence of an American Sign Language interpreter in the clinical and classroom settings. The interpreter learned health assessment along with the student and completed the auditory assessment portion for each patient and described what was heard to the student. The interpreter did not analyze the sounds but simply described what was heard. The interpreter assisted the student in making telephone calls and listened to taped shift report, but was not needed at the patient's bedside as the student was very experienced in lip reading. The authors reported the education of this student was one of the most rewarding educational experiences in which they had ever participated, in part because they learned a great deal about the characteristics of a good nurse.

Reports of nurse educators' experiences with disabled students are limited to only hearing

impaired nursing students. While significant accommodations were necessary for these students, the result of admission and appropriate accommodation appears to have been the development of highly capable nurses and rewarding experiences for the nurse educators involved. As this study enters the area of attitudes of nurse educators toward the disabled, it is clear that nurse educators will benefit from hearing about these positive accommodation interaction experiences by their colleagues when assisting disabled nursing students. The cases that have been documented are well aligned with Allan's suggested ethical project of inclusion of students with disabilities. These faculty members describe positive educational experiences for both themselves and the students involved. The results of these studies clearly support Allan's contention that inclusion can benefit all involved.

### **Intervention Requires Knowing What We Value**

Before entering any discussion about potential changes to the educational system in which individuals with disabilities attempt to enter and progress, we must first understand thoroughly the values held by nurse educators. The attitudes we hold are predictors of our behavior, as well as a measure of what we value (Greenwald, 1995; Zanna & Fazio, 1982; Fazio, 1990; Pruett, 2004). Explicit attitudes in the general public, higher education, and specifically health profession educational programs will be explored. The necessity of an exploration of implicit attitudes held by gatekeepers to the nursing profession is clear.

Research to date on attitudes toward disabled individuals has shown that disabled individuals are viewed as less competent than or inferior to non-disabled individuals (Hunt &

Hunt, 2000; Yuker, 1988). This belief is echoed in the definition of disability provided by dictionary.com (2009) of “a physical or mental handicap that prevents a person from living a normal, full life, or from holding a gainful job” (para 1). This belief is also echoed in the ADA definition of disability “An individual that 1) has a physical or mental impairment that substantially limits one or more major life activities; or 2) has a record or history of such an impairment; or 3) is perceived or regarded as having such an impairment” (ADA, 1990, p. 7). An inferior individual may be someone who cannot do a particular activity, such as ride a bicycle or walk. Inferiority may also be generalized to the individual as a whole. Devlin and Pothier (2006) describe that the basis for this belief may be that Western society is not organized and structured in a manner to provide access to disabled individuals, but rather holds a structure in which the able-bodied are privileged. As a consequence, a disabled person is viewed as not normal and the responsibility for change lies with the disabled individual rather than with society.

Individuals with disabilities have historically been isolated and treated differently than ‘normal’ individuals. Disabled individuals have been seen in Western society as unstable, dependent, and isolated (Furnham & Thompson, 1994). The availability of services to disabled individuals may be affected by individual attitudes (Rees, Spreen, & Harnadek, 1991). Gething (1992) reports that the presence of a wheelchair in an interview setting led to a general devaluing of the disabled individual by the health professionals who viewed the interview. Negative attitudes lead to the avoidance and exclusion of disabled individuals (Berry & Meyer, 1995). These studies document that commonly held negative attitudes lead to the avoidance and

exclusion of disabled individuals. This avoidance and exclusion has been identified in the education setting, as well as in employment. Nurse educators will recognize that exclusion from nursing education results in exclusion from the profession. There is an urgent need to survey and to identify the attitudes that nurse educators hold toward disabled persons in order to avoid further exclusion of disabled individuals from nursing education and from the nursing profession. Additionally, the assessment of attitudes of nurse educators will establish whether or not they generally follow the ethical guidelines established by the ANA Code of Ethics for the proper treatment of others.

**Explicit attitudes.** Explicit attitudes are beliefs that we hold which we are comfortable expressing openly. The majority of literature documenting individual's attitudes solely discusses explicitly stated attitudes. There are some problems related to the expression of explicit attitudes. These expressed attitudes are subject to influence by social desirability, or the wish to look good in the eyes of others (Greenwald, 1995), and therefore explicit attitudes may not necessarily be an accurate measure people's true attitudes. In addition, explicit attitudes can be falsified (Karpinski & Hilton, 2001). Therefore, the usefulness of explicit attitude measures is limited. Some literature has documented explicit attitudes toward individuals, however, and the exploration of attitudes is now described.

**General public.** Siperstein, Romano, Mohler, and Parker (2006) explored attitudes of consumers toward companies that hire disabled individuals and participate in other socially responsible ways. Seventy-five percent of 147 respondents reported having had exposure to disabled individuals in a work environment. Ninety-one percent of these individuals reported

good or very good job performance by the disabled individual and 98 percent of individuals reported being satisfied or very satisfied with the services they received. The authors consequently conclude that consumers hold positive attitudes about disabled employees and toward the companies that employ disabled individuals.

The measurement of attitudes of professional trainees who work with disabled individuals are reported by Beckwith and Matthews (1995). The researchers used the Scale of Attitude Toward Disabled Persons (SADP) to measure attitudes of 157 students in an intellectual disability course in two different time periods. The higher the total score on the SADP, the more positive the attitude. The possible range for response on the SADP is 24-168 with 100 being a neutral attitude. The authors reported means of 129 and 129.7 for the SADP. The responses demonstrated overwhelmingly positive attitudes toward disabled individuals.

Louvet (2007) explored how job applicants, both with and without physical disabilities, were evaluated in terms of their suitability for various types of work. A sample of 152 graduate students were surveyed about their judgment of the capabilities of disabled individuals in jobs typically associated with males or females. The participants reported that individuals with disabilities are less suited for stereotypically “male” work than for stereotypically “female” work. Also, applicants with disabilities received significantly more negative evaluations than applicants without disabilities for jobs that require a high level of interpersonal contact. Additionally, the participants reported that individuals with disabilities are less qualified for all types of work than non-disabled individuals. The authors concluded that individuals with visible disabilities, such as wheelchair users, are seen to be less desirable for jobs with high levels of

public contact because of the discomfort and avoidance of disabled individuals pervasive in society.

The attitudes of both public and private sector representatives toward disability rights and the ADA are explored by Hernandez, Balcazar, and Keys (2004) through the use of the Disability Rights Attitude Scale. The instrument is a 6-point Likert scale with 1 indicating a strong negative attitude and 6 indicating a strong positive attitude. The possible range of scores is 27-162 with a score of 89 indicating a neutral attitude and a score higher than 89 indicating a more positive attitude. The 133 participants had a mean score of 125.2 which demonstrated generally positive attitudes toward both the ADA and disability rights. The private sector representatives' attitudes proved somewhat less positive, with a mean score of 122.9, and the attitudes expressed by the public sector representatives were somewhat higher, with a mean score of 135.3.

Overall, the general public seems to hold positive attitudes toward disabled individuals. Slight differences were measured between the private and public sector. Studies outlining explicit attitudes in the general public provide some insight about the attitudes in the community toward disabled individuals. Nursing faculty are part of the general public and may hold similar attitudes. However, these explicit attitudes are the stated attitudes of individuals and may be affected by social desirability.

***Higher Education.*** The attitudes toward disabled individuals held by educators in a college or university are significant to the university experience of students with disabilities.



Leyser, Vogel, and Wyland (1998) explored the attitudes, knowledge, and practices of students with disabilities in a large research university. While the researchers report overall positive attitudes toward disabled students, Nelson, Dodd, and Smith (1990) report that faculty were hesitant to provide some types of accommodation (facilitation of oral rather than written assignments, or provision of copies of lecture notes, to give two examples), due to concerns regarding the lowering of academic standards.

Hill (1996) surveyed disabled students about the willingness of faculty to provide the recommended accommodations. Two hundred sixty-four disabled students from 14 universities in Canada returned the survey. Over 60% of students reported faculty were “very willing” or “often willing” to allow a student to tape record a lecture, allow extra time for completion of an exam, accept and encourage students, and speak directly to students rather than to interpreters. However, fewer than 50% of students reported faculty members were rarely or not at all willing to arrange for a classmate to take notes, to provide the student with copies of lecture notes, or to ensure class ended on time to allow for students to travel to the next class. Clearly, the stated positive attitudes of faculty and student perceptions of faculty failing to provide accommodation are at odds.

Beilke and Yssel (2001) reported a qualitative study of 10 disabled college students and their experiences with accommodation and the classroom environment. Overall, the participants felt faculty provided accommodations as required. One glaring exception to this was the experience of one student who is quadriplegic and needs to recline in his wheelchair on occasion. This need was explained to the professor on the first day of class. The student asked for a

recommendation as to where he should sit and received no response. The student then opted to sit next to a table in the front of the room. The professor then walked back and forth behind the student as he lectured. The student commented, “He glances up at my chair whenever I recline or sit up. I don’t know if he’s uncomfortable with those of us in wheelchairs. He doesn’t like distractions”(p.369). The classroom environment was described as unpleasant by most participants and students were singled out because of their disability. One wheelchair bound student described the first day of class in a physical education course. The faculty told her he did not think she could “get the grade out of this class that you want, because of the way I grade”(p.370). The hostile classroom environment experienced by these students stands in stark contrast with the series of explicit positive attitudes held by faculty members toward disabled students as reported in this study.

Paul (1999) reports a qualitative study of six university students about their experiences being a student in a wheelchair. All participants reported both pleasant and unpleasant experiences with faculty. The students reported some faculty members were sensitive to their needs and some faculty seemed uncaring. All the students believed that interactions with faculty who held positive attitudes about disabled students enhanced their student life experience, as well as their satisfaction with the university. The author concluded that faculty who hold positive attitudes about students in wheelchairs were more able to accommodate the needs of students and that students’ interaction with positive faculty made their academic success more likely.

In summary, these studies reveal a mixture of explicitly held positive attitudes on the part of postsecondary faculty and uneven results in terms of accommodations and learning

environment. Some faculty members share the general population-wide discomfort when in the presence of disabled individuals while others are able to communicate a positive attitude and thus enhance the educational experience of disabled students. The number of insensitive or discriminatory practices reported appears to be at odds with the literature to date on explicitly held attitudes among faculty members. Explicitly stated attitudes clearly cannot account for the variety of experiences reported. The student descriptions of faculty behavior in the classroom highlight some de-valuing of individuals with disabilities. Additionally, the gap in providing accommodations to students with documented disabilities is not in accordance with the ADA and places the student in a situation without power to act.

*Health professions.* Gitlow (2001) evaluated the attitudes of 166 occupational health faculty members toward students with physical disabilities in occupational health educational programs. The author suggests that attitudes are learned and constructed through social, political, and institutional means. The participants were given The Revised Attitude Towards Inclusive Education Scale, which measures teacher attitudes toward including students in the classroom. It utilizes the following four dimensions of disability and needs: social, behavioral, academic, and physical. The 12 items were scored on a likert-type 1-6 scale with low scores indicating more positive attitudes than high scores. Means for each individual question were calculated as were the means of each of the four dimensions of disability. Faculty were most positive about students with academic needs, with an overall mean of 2.01 followed by students with physical needs, with an overall mean of 2.04. Third was students with social needs, with a mean of 2.12, and finally, the least positive mean was for students with behavioral needs, with a mean of 3.70.

Questions within the behavioral subscale included questions about students who are physically and verbally aggressive. Within the physical subscale, faculty reported they are the most comfortable with students who read Braille and the least comfortable with students who cannot move. Overall, faculty reported positive explicit attitudes toward disabled individuals.

Meacham et al. (2004) describes the steps taken by social work faculty at one university to ease the obstacles faced by students with disabilities in higher education. These faculty members employed a document developed by the Massachusetts Developmental Disabilities Council (MDDC, 1993). The council describe three barriers that must be addressed and removed in order for a community to become disability-sensitive. The first of these barriers is:

Community attitude, defined as assumptions that are made about an individual's quality of life or misconceptions about a person's ability to function as a member of a work, family, or community group. Public attitudes are seen as determining whether individuals with disabilities are going to be valued and included in a community or, conversely, devalued and excluded from it. (MDDC, 1993, p. 81)

This definition of attitudinal barriers may be helpful in an examination of attitudes among nursing school faculty. Meecham's suggestion to remove barriers from society for disabled individuals is in alignment with the Social Model of Disability and Critical Disability Theory.

Sowers and Smith (2003) report results from the Health Sciences Faculty Education Project. An educational program was presented to medical, nursing, dental, and allied health faculty about students with disabilities in each program. The goal of the program was to enhance

the education of students with disabilities. Prior to and following the program, 247 participants completed 6-point Likert-type surveys that measured the perceptions of faculty in the following areas: the cost of accommodation, time needed by staff to work with disabled individuals, impact of disabled students on academic standards, impact of disabled students on clinical standards, impact of disabled students on patient care, attitudes about students with specific disabilities, likelihood to succeed in the program, and perceptions of other students concerning accommodation for disabilities. The participants consistently reported an increase in positive attitudes that were significant at the  $p < .01$  level following the educational program with a few exceptions. Medical and dental faculty demonstrated non-significant change in attitude about the ability of wheelchair users (medicine) and blind, deaf, and mental health disabled (dentistry) students following the educational program. Nursing faculty increased the measured positive attitudes in all areas at a significant ( $p < .01$ ) level for all questions with two exceptions. One question about the cost of accommodation and one question about the perceptions of other students in the program did not show progress. The positive attitudes measured here were explicit attitudes.

In summary, these surveys of health professional faculty reveal consistently held positive attitudes toward the disabled. In addition, an intentional program of focus on attitudes toward the disabled has resulted in an increase in positive attitudes in one university program setting. An attempt should be made to encourage all in the nursing field to consider the actual inclusion of individuals with disabilities in society through the removal of barriers.

*Nursing.* A few studies have examined the attitudes of nurse educators toward disabled individuals. Those studies will be examined here in an attempt to document the measured attitudes of nurse educators toward individuals with disabilities.

Christensen (1998) measured the attitudes of nursing faculty in Minnesota toward disabled individuals in an attempt to identify barriers that might hinder the admission of disabled students to programs of nursing education. Eighty-four respondents completed the Interaction with Disabled Persons Scale (IDPS), the Contact with Disabled Persons Scale (CDPS), and the Nurse Educator's Information Survey (NEIS). The IDPS measures people's attitudes toward the disabled on a negative to positive continuum, with a negative number indicating more positive attitude. The results revealed the nurse educators held more positive attitudes than the normative sample of 64 people. The CDPS measures the amount of contact an individual has had with disabled individuals. The data from the CPDS were correlated with the data from the IDPS. Spearman's rank correlation coefficient for this relationship was -0.23 with a 2-tailed significance of .044. This result demonstrates there is a weak relationship between contact with disabled individuals and attitude, with the lower amount of contact with disabled individuals being related to more negative attitude. The NEIS presented nurse educators with a brief vignette to assess the respondent's decision-making process in relation to an applicant with a physical disability. Almost 60% of respondents would prefer to determine the nature of the disability and base the admission decision on whether appropriate accommodation can be provided. Twenty-eight percent reported they would admit the applicant with further problem solving as necessary. Eight percent would provide a list of essential skills required to complete the program and only

one percent would require a physical assessment prior to making a decision.

Sowers and Smith (2004) surveyed 88 nursing faculty about their perceptions of students with various types of disabilities and their success in the nursing education program, as well as their success in the nursing profession. The participants reported the highest probability for success in both the educational program and in the nursing profession to be for students with Attention Deficit Disorder/Attention Deficit Hyperactivity Disorder, followed by students in wheelchairs, then students with hearing loss. Nursing faculty perceived the lowest possibility of success in the educational program and the nursing profession to be for students with low vision or complete blindness, with greatest prospects for success perceived for students with limited use of their hands and then students with learning disabilities. Perceptions and attitudes are different, but attitudes influence perceptions and are an integral part of how nursing faculty view students with disabilities.

An educational program aimed at assisting nursing faculty to expand their understanding of the issues specific to the education of students with physical disabilities is described by Sowers and Smith (2004). A total of 112 nursing faculty responded to surveys about their attitudes about students with varying types of disabilities and their success in their educational programs both prior to and following the educational program. Prior to the educational program, faculty rated students with vision loss as the least likely to succeed in the educational programs, followed by students with mental health issues and students who use wheelchairs. These findings are consistent with Sowers and Smith's findings from a separate study (2004). Following the educational intervention, the faculty member's attitudes were consistently more positive. The

authors measured explicit attitudes of nursing faculty.

The attitudes of current nursing students, recent graduates, nursing faculty, registered nurses, and disabled individuals were measured using the Attitude Toward Disabled Persons (ATDP) questionnaire (Brillhart, Jay, & Wyers, 1990). The possible scores for the ATDP range from -90 to 90 with a score above zero indicating a positive attitude. Not surprisingly, disabled individuals revealed the most positive attitudes toward disabled individuals, with a mean score of 86. Nursing faculty showed the least positive attitude toward disabled individuals, with a mean of 38, followed by new graduates at 41. Working registered nurses had a mean of 47 and beginning nursing students had a mean of 46. Nursing faculty demonstrated the lowest mean score, but a score that is nonetheless considered a positive attitude.

Maheady (1999) reported a qualitative study of 10 disabled nursing students and their experiences with their education. The students reported the greatest barriers to be attitudinal barriers from fellow students, nurses in the clinical setting, and nursing faculty rather than from their disabilities. When faculty were asked about barriers, they stated physical barriers were the greatest obstacle for disabled students. One student with a hearing impairment felt she was set up by the faculty member to fail through separating the student from a staff nurse who was supportive of the disabled student. Another student with hearing impairment stated:

I had my first clinical with a male faculty member, and he was totally intolerant, and the pressure was extreme...I think his perception was that I wouldn't be able to do this, right from the beginning...he never even heard me say I don't hear you (p.167).



The negative attitudes experienced by the disabled students resulted in added stress and blows to their self-esteem and confidence. Clearly, as demonstrated here, there is a discrepancy between what faculty members explicitly state are their attitudes toward students with disabilities and their behaviors toward those individuals.

Trawick (1990) measured the attitudes of 34 Bachelor of Science in Nursing (BSN) faculty and BSN students through the use of the Issues in Disability Scale (IDS). Scores on the IDS range from a possible 55 to a possible 385 with a higher score indicating a more positive attitude toward disabled individuals. A score of 155 is a neutral score and 156 or higher indicates a positive score. The IDS was pilot tested with a group of psychology students who were previously identified as holding positive attitudes toward disabled individuals. The mean score for psychology students was 293.05. Nursing faculty were more positive than the students surveyed in the pilot study, with a mean score of 231.97 for faculty and 225.15 for the BSN students. The author concluded that nursing faculty were identified as holding positive attitudes toward disabled individuals.

Ney (2004) surveyed nursing faculty about attitudes toward disabled persons through part B of Bolton's Survey of the Impact of the ADA on Nursing Education Programs in Alabama. The scores ranged from 19 to 95, with a score of 43 or less indicating a positive attitude, a score of 44 to 70 indicating an uncertain attitude, and a score of 71 or higher indicating a negative attitude. The mean score for faculty who teach in an Associate degree program was 36.61 and the mean for Bachelor degree program faculty was 34.11. There was a significant difference between the two groups with the computed t-test (two-tailed  $t$ -test=2.76,  $df$ =296,  $p$ =.006). All

faculty surveyed reported positive attitudes toward nursing students with disabilities.

These studies of attitudes among nursing faculty toward the disabled reveal a complex situation. On one hand, consistently held positive attitudes toward the disabled are reported by faculty and, on the other, a qualitative study indicates an environment of negativity and discouragement created by faculty. Students with disabilities view negative attitudes as their greatest barrier while faculty view physical barriers to be the greatest challenge for disabled individuals.

Clearly, nursing faculty hold overwhelmingly positive explicit attitudes toward disabled individuals. The behavior of nursing faculty and administrators, including denial of admission to disabled candidates and negative and discriminatory treatment of students once admitted to nursing education programs, stands in stark contrast to the positive attitudes expressed. This dissonance between explicit attitudes and behavior announces a need for further study.

Sociologists, from Goffman and his study of stigmatization to proponents of theories of deviancy and normalization, have provided theoretical foundations for the exploration of the complexities of interactions between those deemed “normal” and those characterized as “abnormal” or “deviant”. In the light of this theoretical work, the urgent need for the examination of implicit attitudes among nurse educators is clear. This more candid and more complete assessment is essential. It provides a key piece of the groundwork in achieving the goals of having the nursing profession mirror the population served, of preventing discrimination, and of honoring the edicts of the profession by defining nursing in the broadest, deepest, and richest manner.

**Implicit Attitudes.** Implicit attitudes are “introspectively unidentified (or inaccurately identified) traces of past experience that mediate favorable or unfavorable feelings, thought, or action toward social objects” (Greenwald & Banaji, 1995, p.5). Implicit attitudes are attitudes we do not know we hold but which nonetheless affect our behavior. No published literature has documented implicit attitudes held by nursing faculty toward individuals with disabilities. Because the attitudes we hold guide our behavior, knowledge of implicitly held attitudes toward disabled individuals will be essential to any attempt to provide insight into admission decisions nurse educators make about applicants with disabilities.

***Implicit Association Test.*** The measurement of unconscious mental processes, or implicit cognition, varies from self-report measurement tools because they can identify associations that do not require introspection (Banaji, 2001; Greenwald & Banaji, 1995). The Implicit Association Test (IAT) assumes that an individual should be able to respond more easily in the same behaviorally-mediated way (pressing a computer key) to concepts that have strong association than to concepts with weaker association. The IAT asks participants to identify stimulus items and categorize them into one of four categories. The strength of the association between the concepts is measured by the speed with which the respondent categorizes the various items into the different categories. For example, because the concepts “good” and “trust” are likely to be strongly associated than “good” and “hate”, respondents are likely able to more quickly identify and categorize “good” and “trust” together than “good” and “hate”. IAT tests are used to measure many forms of attitudes and stereotypes, including those involving race, age, skin tone, disability, religion, weight, sexuality, and gender differences in math and sciences.

Eye-hand coordination and handedness were noted to not be factors that affect results of IAT tests (Greenwald, Nosek & Banaji, 2003). Because the location of the computer key changes sides of the keyboard in the middle of the test, handedness is not a factor that could change test outcomes. For example, a right handed individual might more quickly push the right computer key to identify “good” terms. If this were all that the test asked of participants, handedness might be a factor in outcomes. However, the computer key used to identify “good” and “bad” changes, therefore, handedness is not of concern. Eye-hand coordination is also not as issue as if someone has slower reflexes, one should be consistently slower in response times.

The IAT has been used in a variety of settings to measure implicit attitudes and many authors have documented implicit associations between concepts (Sabin, Rivara, & Greenwald, 2008; Lam, Chiu, & Lau, 2007; Green, et. al., 2006). Lam, Chiu, and Lau used the IAT to measure implicit preference for individuals living in mainland China or Hong Kong. The participants demonstrated a more positive implicit attitude for individuals from Hong Kong over individuals from mainland China with a mean response latency for congruent trials ( $m=854.83ms$ ,  $SD=162.78ms$ ) and incongruent trials ( $m=1113.84ms$ ,  $SD=258.78$ ),  $F_{1,64}=67.64$ ,  $p<.001$ . The authors reported no relationship between explicit measures of preference for Hong Kong residents and the IAT result ( $r=0.14$ , non-significant). Sabin, Rivara, Frederick, and Greenwald reported the use of the IAT to measure implicit attitudes and stereotypes about race and the quality of medical care. The researchers documented a small implicit preference for European Americans over African Americans with an IAT score of 0.18 and moderate implicit association between the concepts of compliant patient and European Americans compared with

African Americans (IAT score=0.25). Green et.al. (2006) documented implicit race bias among physicians and a difference between explicitly stated attitudes and implicitly measured attitudes (IAT score=0.36,  $p<0.05$ ). Some correlation was found between explicit and implicit attitudes ( $r=.28$ ,  $p=.001$ ).

The Implicit Association Test groupings include a specific test for the study of attitudes regarding disability: the Disability Attitude Implicit Association Test (DA-IAT). The DA-IAT is based on the same principles as other IAT tests. The attitudes held toward individuals with disabilities may be more easily discovered through an indirect manner, such as the DA-IAT due to the hesitance of people to be forthcoming with their true beliefs in regards to sensitive issues like disabilities (Thomas, Vaughn, & Doyle 2007). The DA-IAT will be the main data collection tool for this study. All IAT tests are administered through a group of researchers working through Project Implicit, which is an international research team devoted to increasing knowledge about implicitly held attitudes and biases.

The implicitly held attitudes of nurse educators toward individuals with disabilities are of critical importance for understanding and working to prevent exclusion and mistreatment of students in nursing programs. This understanding will be a crucial first step toward an open and honest dialogue about the issues and challenges faced by disabled individuals. Combined with the concept of inclusion as an ethical project (Allan, 2006) toward an environment in which all students, educators, nurses, and all with whom they work will benefit, an understanding of these issues will be one step in the direction of providing a truly barrier-free society in which disabled individuals can function as equal citizens.

In summary, the issues faced by individuals with disabilities and nurse educators around the admission to and progression through a nursing education program are complex. This complexity stems from interpersonal dynamics described by sociologists as well as difficulties unique to nursing and the health care professions. The literature reviewed documents what is known about the educational environment in terms of recruitment, admission, technical standards, accommodation, retention, progression, and perceived environment in nursing education. Definitions of nursing and of disability, along with legal guidelines, are readily available to the researcher. There are far fewer statistics and studies available regarding the number of disabled students seeking admission to nursing school, the number who are denied admission, the number who graduate, and the number of individuals with disabilities working as nurses. There are a small number of qualitative studies in which students with disabilities describe their experiences in admission and progression in nursing programs, as well as a limited number of surveys of nurse educator explicit attitudes toward individuals with disabilities. The literature reveals a stark contrast between the positive explicit attitudes held by nurse educators and the behavior of nurse educators as reported by students.

This contrast between explicitly held attitudes and behavior can be approached from several theoretical perspectives. Sociological theories of stigmatization, deviancy, and normalization assist the researcher in viewing the nursing school environment within education and within society as a whole. Critical Disability Theory provides further insight into the dehumanizing effects of exclusion and discrimination. The nursing profession, through a published Code of Ethics and position statements on discrimination, provides an explicit

mandate and standards for behavior among all nurses. The lack of a published study of the implicit attitudes of nurse educators toward individuals with disabilities is a significant gap in the literature. Such a study will provide a more candid and complete picture of the nursing school environment and a basis for cross-disciplinary and deeper understanding of the issues faced by nurse educators and by disabled students.

## CHAPTER THREE

### RESEARCH DESIGN AND METHODOLOGY

#### Study Design

This study employed a mixed methods, cross-sectional research design. The quantitative data includes the Disability Attitude Implicit Association Test (DA-IAT) and a demographic survey. The qualitative data includes an open-ended survey. The first specific aim, *to measure the implicit attitudes of nurse educators toward individuals with disabilities*, was accomplished through the use of the DA-IAT. The IAT score, which is how the DA-IAT results are calculated and interpreted by Project Implicit, is the variable associated with this aim. The second aim, *to explore whether IAT scores can be predicted by demographic variables such as exposure to individuals with disabilities and clinical nursing specialty*, was examined through the use of the demographic survey. Variables within the demographic survey are the presence of a visible disability in the participant, exposure to individuals with disabilities, and primary clinical nursing specialty. The third aim, *to recommend interventions to facilitate the admission of disabled persons into nursing programs and to improve the treatment of disabled individuals once admitted*, was answered by through the use of open-ended survey data. The open-ended survey gave participants the opportunity to provide a cognitive and emotional response to having taken the DA-IAT, describe written and unwritten criteria for the admission of disabled individuals into their nursing program, and provide any additional comments about students with visible disabilities in nursing education. The fourth aim of this study, *to recommend direction for future*



*research*, was achieved by utilizing data from the open-ended survey and DA-IAT scores.

## **Sample**

Inclusion criteria for this study are that the participant must be a nursing faculty member, teach primarily in an undergraduate baccalaureate program, read and write in English, provide implied consent, and complete all three study instruments. Conversely, the exclusion criteria include any individual who is not nursing faculty; teaches primarily in a graduate, RN to BSN, associate degree, or diploma nursing program; does not read and write in English; or does not complete all three study instruments.

A stratified convenience sampling methodology was used to obtain 175 nurse educators who teach in baccalaureate programs. Oversampling was used as 781 nurse educators were invited to participate and data collection continued until a minimum of 125 participants had completed all 3 study instruments. Two groups of participants were invited to participate in the study. Half of the invited participants were targeted as likely having experience working with student nurses with disabilities. The remaining invited participants were nurse educators with no known increased likelihood of experience with students with disabilities. Significant attrition was not expected as participants completed the DA-IAT, demographics information, and open-ended questions on one occasion. Only participants with full data sets were entered into the study and any participant missing just 1 of the 3 questionnaires was deleted from the sample. The link to the DA-IAT website was made available after this researcher finalized the contract with Project Implicit.

The study participants targeted as likely having experience with students with disabilities were identified through the Exceptional Nurse website (exceptionalnurse.com, 2009). The Exceptional Nurse website provides a list of schools of nursing in the United States that currently have in attendance or have recently graduated students with disabilities and in which individuals with disabilities have reported positive experiences in those schools. These schools are then more likely to have faculty with experience with students with disabilities than are schools of nursing in general. Because this study hypothesizes a positive connection between exposure to disabled people and acceptance of such people, the faculty at these schools made up approximately half of the faculty invited to participate in the study.

The American Association of Colleges of Nursing (AACN, 2009) website was used to access individual schools of nursing and identify faculty to invite to participate in this study. The AACN website contains information on universities and colleges that have baccalaureate and graduate nursing education programs and provides links directly to each school website. Each individual school website was examined by this researcher to ensure the school has a baccalaureate program. Once this had been determined, individual faculty email addresses were accessed through each individual school website. This researcher made the assumption that individual school websites keep faculty email addresses updated. Six hundred forty schools are listed on the AACN website. Therefore access to participant email addresses is straightforward.

Three hundred eighty-seven faculty from 17 schools identified as being supportive of students with disabilities were invited to participate. These 17 schools represent 16 states. Stratification for this study occurred by this researcher inviting the remaining three hundred

ninety-four participants from the 34 states not listed on the Exceptional Nurse website, with a minimum of 1 school selected per state. Eleven or twelve faculty from each state were invited to participate. In states that have more than one baccalaureate program, a random sampling occurred from all of the programs in the state to select one program. If one program does not have 11 eligible faculty members, then another program was randomly selected and participants were solicited to complete the sample of 11 educators per state. Of the invited participant list of 781 educators from 50 baccalaureate programs of nursing, an estimated 20 percent were expected to complete the tests, resulting in a final minimum sample of approximately 125 nurse educators from a minimum of 13 programs.

Once potential participants were identified, an email invitation to participate in the study was sent by this researcher to all selected faculty (see Appendix A). The email contains contact information for this researcher for participants who have questions or concerns. The link to the three instruments for the study remained active until closed by this researcher. The link was active for 6 weeks. A few participants had questions about the study and did email this researcher to have those questions answered. Presumably the participants then had ample time to then complete the study instruments. In addition, the email contains a reminder of inclusion criteria for the study. The email provided the link directly to statements of rights as a participant and informed consent, the DA-IAT, the demographic survey, and the open-ended survey. The link took participants from one item to another in the order listed here: participants rights, implied consent, DA-IAT, demographic survey, open-ended survey. The estimated time for completion of the DA-IAT and survey tools is 10-15 minutes (ProjectImplicit.net, 2009).

When a potential participant chose to participate, he or she needed only to click on the link within the email or announcement to access the instruments. Initially information from Project Implicit regarding computer specification necessary to complete the DA-IAT was seen, followed by information of protection of human rights. A statement of informed consent was followed with a statement that to proceed further is considered the participant providing implied consent for the study (see Appendix B). Then the DA-IAT was seen on the screen, followed by the demographic survey and the open-ended question survey. This researcher did not enroll participants. Rather, participants selected whether or not they wished to continue. All information and instruments are available in 1 link.

### **Data Collection**

All participants were contacted by email and invited to participate. Participants were informed of the purpose of the study; were provided with information about informed consent; and were notified that at any time they may discontinue the test, demographic survey, or open-ended questions. Participants had access to links to the DA-IAT, the demographic survey, and the open-ended questions. All of the tests were completed online through the web link provided by Project Implicit to this researcher. All data is confidential. All data is kept only by this researcher and Project Implicit. The researchers through Project Implicit retain the data and shared the results with this researcher. This information is provided in the informed consent. The test link remained active for 6 weeks in order to provide ample time for participants to complete the test or until a minimum of 125 participants had completed all 3 tools. A reminder email was sent to all selected faculty three weeks after the initial email to maximize the response

rate. After a minimum of 125 respondents participated and completed the entire DA-IAT link, the link to the test was closed by Project Implicit and the data was analyzed. Upon completion of the scoring of the DA-IAT, Project Implicit forwarded an SPSS data file to this researcher with a calculated IAT score for every participant, as well as data from the demographic survey. The open-ended questions were sent in plain text format. Statistical analyses other than the IAT score were completed by this researcher with the use of SPSS. This data file is stored in a locked and secure location and remains confidential. No personal identification is linked to any data.

## **Instruments**

The three tools used for data collection are the DA-IAT, a demographic survey, and a series of open-ended questions. A complete description of the IAT is available below. The demographic survey (see Appendix C) consists of questions to the respondent about the presence of a personal disability, experience with individuals with disabilities, whether with a nurse, family member, student, or patient, and area of specialization in nursing. The open-ended questions (see Appendix D) include a report of the cognitive and emotional responses experienced while taking the DA-IAT, the presence of formal or informal criteria for the evaluation of applicants to each nursing program, and a broad question about other concerns regarding individuals with disabilities in nursing education.

**IAT.** The Implicit Association Test is a computer based tool created by researchers from Project Implicit and is supported and managed through the University of Virginia. The Project Implicit staff works with researchers to design and carry out research using the IAT (Project

Implicit, 2009). A number of IAT tests exist. All IAT tests are structured the same way. The initial information below provides details about how the IAT tests are structured. Then more specific information is provided about the DA-IAT, which is the IAT test that will be used for this study.

**Description.** All IAT tests have the same seven step procedure for data collection (Lane, Banaji, Nosek & Greenwald, 2007). The example provided here is not the test that was given to participants, but is provided to increase the readers understanding of the IAT. The procedure is outlined below:

*Step 1: Learning the Concept Dimension.* First the respondents are asked to sort items into the appropriate category, for example flower and insect. The respondents are shown flower on one side of the screen and insect on the other. Respondents are asked to identify rose, daisy, ant, or roach, for example, as either flower or insect and asked to press the corresponding computer key. For example, flower should elicit the respondent to press the “a” key.

*Step 2: Learning the Attribute Dimension.* Next respondents are asked to use the same computer keys to identify good and bad terms such as “love”, “beautiful”, “hate”, or “evil”. For example, respondents should press the “a” key in response to the word “beautiful”.

*Step 3: Concept-Attribute Pairing.* The previous two tasks are combined and respondents are asked to use the same computer keys to identify flowers and “good” terms with the same computer key and insects and “bad” terms with the other computer key. Twenty items appear on the computer screen to be categorized.

Step 4: *Concept-Attribute Pairing*. Step 3 is repeated with an additional set of items to sort. Forty items are displayed to be sorted.

Step 5: *Learning to Switch the Spatial Location of the Concepts*. Respondents are asked to classify terms again but this time the computer keys are reversed. For example, respondents should respond by pressing the “a” key when shown the term roach.

Step 6: *Concept-Attribute Pairing*. In this step, respondents are asked to identify “good” and “insect” with the same computer key and to identify “bad” and “flower” together. Twenty items appear to be sorted.

Step 7: *Concept-Attribute Pairing*. Step 6 is repeated with an additional set of items to sort. Forty items are displayed to be sorted.

In most cases, attitudes toward flowers would be expected to be more positive than attitudes toward insects, a more rapid response when pairing “good” and “flower” is expected in comparison with the response time when “bad” and “insect” are paired.

The difference in response time, measured in milliseconds, between the first pairings; “good” and “flower” together and “bad” and “insect” together as opposed to the second pairings; “bad” and “flower” together and “good” and “insect” together, demonstrates the relative strength of the association between the paired concepts. If the response time with the first pairings is faster than the response time with the second pairings, the conclusion is that there is an implicit preference for flowers over insects. The congruent response times, which are concepts most people more easily associate, are grouped together and a mean is calculated. The

same process follows for the incongruent response times. The two means are subtracted from each other and divided by the standard deviation of all the response times. This mathematical technique provides a D score. Any D score greater than 0 indicates preference for able-bodied individuals. A D score of .15 to .34 indicates slight bias, .35 to .65 indicates moderate bias, and .66 or greater indicates strong bias (Greenwald, Nosek, & Banaji, 2006). Following the completion of the IAT, each individual respondent is provided an assessment of his or her own implicit attitude of the subject. The assessment is graded as strong, moderate, or slight bias for flowers, strong, moderate, or slight bias for insects, or no preference for one over the other. For example, one's assessment could state that he or she has a moderate preference for flowers.

***Disability Attitude-Implicit Association Test.*** The Disability Attitude- Implicit Association Test (DA-IAT) specifically measures respondent's implicit attitudes toward disabled individuals. This is the test that was given to study participants. The symbols and images that respondents are asked to sort include a guide dog, crutches and a wheelchair for the disabled images and a skier, children walking at a crosswalk, and a jogger for the able-bodied images. The steps for the data collection procedure are the same as described above with the exception that disabled and able-bodied images replace flowers and insects. Each respondent receives an assessment of his or her implicit attitude toward disabled individuals. For example, one could receive assessment indicating that he or she has a moderate preference toward able-bodied individuals. Two hundred twenty words or symbols are shown on the computer screen and need to be categorized. The total estimated time to complete the 3 instruments is 10-15 minutes (ProjectImplicit.org). The DA-IAT is scored through the same procedure described above with D



scores indicating slight, moderate, or strong preference for either able-bodied or disabled individuals. The DA-IAT was the first instrument administered so that participants have the opportunity to reflect about the experience of having taken the DA-IAT in the open-ended questions.

Nosek et al. (2007) documented results from the DA-IAT from participants who took the test through the public website between 2003 and 2006. A total of 38,544 participants took the DA-IAT. The mean score was  $D=0.45$ ,  $SD= 0.43$ . Further, of the 3000 individuals who completed the DA-IAT and reported they had a disability, they too showed an implicit preference for able-bodied individuals.

***Reliability.*** The IAT series has been tested and used on many occasions and has demonstrated good psychometric properties. The internal consistency of the IAT was established through comparison of the data from steps 3, 4, 6 and 7 (Nosek, Greenwald, & Banaji, 2005) and the results ranged from  $r=.53$  to  $r=.63$ . Additionally, Cunningham, Preacher and Banaji (2001) documented an overall Cronbach's alpha of .78. Typically a researcher looks for a minimum alpha of .70 or higher in order to use a test (Cronbach, 1951). The reliability of the DA-IAT was documented (Pruett, 2004; and Pruett & Chan, 2006) through a test-retest correlation of  $r=.78$  over a two week period of time.

***Validity.***

*IAT.* The validity of the IAT and the DA-IAT have been established by various authors. Nosek and Smyth (2003) document that explicit and implicit attitudes are related but distinct

constructs through correlations of IAT scores and self-report measures of explicit attitudes. The authors report  $r=.03$  and  $r=.04$  (ns) with  $n=287$  and conclude that implicit and explicit attitudes are related but distinct constructs. Evidence for convergent and discriminant validity was established by Bansa, Seise, and Zerbes (2001) in a study using the IAT to measure attitudes toward homosexuality. Additionally, the authors found that respondents were able to give false positive responses on explicit measures of attitudes regarding homosexuality, but not able to give false positive responses for the IAT.

The ability of IAT to predict discriminatory behaviors has established superior predictive validity in comparison to self-report measures (Greenwald, Poehlman, Uhlmann & Banaji, 2007). The authors conclude that implicit bias, as measured by the IAT, predicts individual differences in behaviors and judgments. The use of training blocks and multiple tests in all IAT tests allows for differences in handedness and the random appearance of symbols and terms. In addition, the use of training block increases the validity and consistency of the test (Greenwald, McGhee, & Schwartz, 1998).

*DA-IAT.* Construct validity was established in a variety of ways by Pruett (2004) and Pruett and Chan (2006). The internal structure of the test was evaluated through an analysis of the frequency of errors in congruent and incongruent associations of the symbols and terms sorted in the DA-IAT. If the DA-IAT actually measures the ease of evaluative association, it would follow that congruent association would happen more quickly and with fewer errors than incongruent associations. Participants were able to make significantly more correct congruent associations ( $M=17.25$ ,  $SD=5.57$ ) than incongruent associations ( $M=14.71$ ,  $SD=5.83$ ,  $p<.001$ ).

Given the consistency of the responses, errors, and correct valid responses, the author concluded that the DA-IAT measures congruent and incongruent associations consistent with automatic evaluation of the symbols and terms participants were asked to categorize. Therefore, the author further concluded that the scores of the DA-IAT appear to represent implicit attitudes toward disabled individuals.

Pruett (2004) further established construct validity through correlation with the Attitudes Toward Disabled Persons (ATDP) scale, a survey that measures explicit attitudes toward disabled individuals. The overall DA-IAT ( $M=-1.417$ ,  $SD=3.18$ ,  $n=172$ ) and ATDP ( $M=131.80$ ,  $SD=19.64$ ,  $n=223$ ) reveal no significant direct correlation ( $n=172$ ,  $r=.06$ , *ns*). This is an expected finding because explicit attitudes and implicit attitudes are related, but distinct constructs. A separate study documented correlation between DA-IAT scores and various explicit attitude measures (White, Gordon, & Jackson, 2006). The correlations of the 12 tests ranged from  $r = -.107$  to  $r = .261$  with only 2 of the correlations being significant. Again this is expected as explicit and implicit attitude measures are related but distinct. Therefore, good discriminant validity was established which adds to construct validity.

Pruett (2004) attempted to document predictive validity through the use of hierarchical multiple regression. Demographic variables (age, gender, socioeconomic status, ethnicity) failed to explain a significant amount of the variance in the DA-IAT scores ( $R^2=.02$ ),  $F(4,147)=0.68$ , *ns*. The second block of variables of personal contact with individuals with disabilities also did not demonstrate great predictive ability ( $R^2=.02$ ),  $F(2, 145) =1.22$ , *ns*. The third block, which included student status, number of disability classes taken, and number of disability internships

completed also did not significantly improve the prediction of the DA-IAT scores ( $R^2=.02$ ),  $F(3,142) = 0.88$ , *ns*. The author concluded that none of the variables showed predictive ability of the DA-IAT scores. Therefore, one author has documented a lack of predictive ability with these variables and the DA-IAT.

Pruett (2004) conducted multiple regression to evaluate whether the psychosocial variables of contact with persons with disabilities, fear of death, internal and external motivation to respond without prejudice, and social desirability predict DA-IAT scores. Social desirability, measured through the Marlowe-Crowne Social Desirability Scale, failed to explain the variance in the DA-IAT scores ( $R^2=.001$ ),  $F(1,170) = 0.12$ , *ns*. Therefore, the author concluded the scores are not subject to social desirability. The remaining four variables did contribute to variance of the DA-IAT scores ( $R^2=.06$ ),  $F(4,166) = 2.44$ ,  $p < .05$ . The Contact with Disabled Persons Scale was the best predictor of DA-IAT scores. Therefore, Pruettt documented construct validity through predictive validity and that the DA-IAT is not subject to social desirability.

***Demographic Tool.*** The demographic tool (see Appendix C) was created by this researcher and consists of 11 questions with response options of either yes/no or select the appropriate answer. The 11 questions are treated as discrete items for descriptive purposes. There is no total score for the questionnaire. Participants will be provided with the demographic survey immediately following the completion of the DA-IAT through the same web link. Content validity was established by review of the survey by 4 experts in disabilities and nursing education. When forming the demographic tool questions were modified or deleted based on the literature in disabilities and nursing education and the background knowledge of the experts.

Modifications include providing categories of nursing specialty and frequency of exposure to individuals with disabilities. The content experts have published literature in the areas of nursing education, disabilities, and social justice issues such as racial bias.

***Open-Ended Questions.*** The open-ended questions (see Appendix D) were created by this researcher and consist of five questions. Participants were asked to write narrative answers to the questions following the completion of both the DA-IAT and the demographic survey. Content validity was established by reviewing the questions posed by 4 experts in disabilities and nursing education. Questions were modified based on the literature in disabilities and nursing education and the background knowledge of the experts.

## **Data Analysis**

The initial data analysis is a description of the demographic characteristics of the participants using SPSS Graduate Pack, Version 16.0 for Windows. Aim 1: *Measure the implicit attitudes of nurse educators toward individuals with disabilities.* Following data collection, Project Implicit forwarded the IAT scores for all participants to the investigator. Inquisit (2005, millisecond.com) software is used by Project Implicit to run the test, measure response time, and calculate the IAT scores. The IAT effect, or D score, is calculated from latency data in steps 3, 4, 6, and 7 (Greenwald, Nosek & Banaji, 2003) of the DA-IAT. Steps 1, 2, and 5 are training steps and not included in data analysis. The time (latency) respondents took to select the proper computer key following the appearance of the item to be sorted on the computer screen is measured by the computer software. The IAT score involves calculating the difference in mean

response latency between the two sorting conditions and dividing by the standard deviation of all latencies for both sorting tasks. Any IAT score over 0 is considered to indicate bias against individuals with disabilities. The following guide was used to interpret D scores for this study: a D score of .15 to .34 indicates mild bias, a score of .35 to .64 suggests moderate bias, and a score of .65 or higher indicates strong bias against individuals with disabilities. The IAT score is related to Cohen's d statistic in which .20 indicates a small effect, .50 indicates medium effect, and .80 indicates a large effect size. Greenwald, Nosek and Banaji (2003) changed the terms to reflect small, moderate, or strong bias. A mean IAT score for all participants and a D score for each individual participant was calculated by Project Implicit.

*Aim 2: Explore whether IAT scores can be predicted by demographic variables such as exposure to individuals with disabilities and clinical nursing specialty.* The variables from the demographic survey were evaluated for ability to predict IAT scores through the use of multiple regression. Additionally, a mean IAT score was calculated by this researcher for each of the independent demographic variables.

*Aim 3: Suggest interventions to facilitate the admission of disabled persons into nursing programs and to improve the treatment of disabled individuals once admitted.* The open-ended questions were analyzed through the use of content analysis. The responses were explored for core meanings through the identification of patterns or themes. The information gathered through the open-ended questions provided an opportunity for participants to share their thoughts about the use of the DA-IAT and students with disabilities in nursing education. This information provides direction for future research.

Aim 4: *Suggest direction for future research.* The open-ended questions will be analyzed through the use of content analysis. The information gathered here, in addition to the DA-IAT scores for all participants, provides direction for future research.

Content analysis was undertaken by way of an approach described by Krippendorff (1980). The first step was to read all the responses to each question three or more times to achieve a sense of the whole. The various textual units were identified and labels were assigned to each of the units. The labels then were organized into categories and subcategories. The purpose behind creating categories is to establish a means to describe the phenomenon and increase our understanding of the phenomenon. Once these were established, definitions were applied. The data were then coded into these categories.

All narrative data was unitized during analysis. A unit of data is defined as a verb, verb-phrase, noun, sentence, paragraph, or whole written response to a question that conveys a complete idea (Lewis, Haberman, & Wallhagen, 1987). Constant comparison was used to derive a set of codes that are mutually exclusive for each question. Constant comparison also helped organize the codes into categories based on the relationships between different codes. The categories were then used to organize the codes into themes. Exemplars were used to illustrate the categories and were used as a basis of a definition for each category.

The main categories provide insight into what nurse educators think and feel about the presence of individuals with visible disabilities in nursing education. Credibility was established through peer debriefing. Two individuals external to the study and familiar with issues of

discrimination, stigma, and disabilities in nursing education provided insight and feedback to this researcher on the data and challenge assumptions held by this researcher. A second coder reviewed the data and categories to establish reliability. This insight from the open-ended questions provides this researcher with needed information to plan for interventions and to suggest direction for future research.

### **Human Subjects Review**

The Washington State University Institutional Review Board determined this study to be exempt from review. Participants were provided with information about the study. As the proposed study was accessed through the internet, no formal consent was signed. However, a statement of implied consent was included in the invitation to participate via email. The completion of the DA-IAT, demographic survey, and open-ended questions constitutes implied consent and the completion of the test and surveys reflects voluntary consent to participate.

Participation in this study is voluntary and participants have the right to self-determination, ie: to decide whether to participate in the study or not without the risk of penalty. Potential risks to participants are minimal. The potential risks to participants include discomfort with the subject matter and possible distress stemming from the degree of bias found. Participants were warned in the initial recruitment email that this potential risk exists. Participants were notified that DA-IAT scores are confidential. Additionally, the individual results of each individual are confidential as the email addresses and completed data are not linked in any way.



## CHAPTER FOUR

### RESULTS

Positive explicit attitudes of nurse educators toward individuals with disabilities are well documented in the literature (Christensen, 1998; Sowers & Smith, 2004; Brillhart, Jay & Wyers, 1990; Trawick, 1990; and Ney, 2004). However, as previously described, they are subject to social desirability and thus not an accurate measure of attitudes. Implicit, or unconscious, attitudes are a better measure of attitudes and are good predictors of behavior. This study describes the implicit attitudes held by nurse educators toward individuals with disabilities. By illuminating the implicit attitudes of nurse educators, it may be possible to create a new paradigm that values nurses' work roles as more than physical skill ability and creates an environment in which more individuals with disabilities achieve their goal of becoming nurses.

#### **Sample Description**

A total of 781 nurse educators were invited to participate in this study and 175 completed some part of the study. A total of 35 participants were able to complete the DA-IAT but were unable to complete all three study tools. Therefore these participants were not enrolled in the study. Eight participants had too many errors for the DA-IAT to be useful (per IAT protocol) and thus no D score was calculated for those participants. A total of 132 participants completed all 3 study tools for a response rate of 22% and this was the final sample used for analysis. This rate of 132 participants exceeded my projection of being able to recruit 125 participants by 7 individuals. Data collection was completed in six weeks.

Through the DA-IAT test, participants were shown images and words and asked to push computer keys to indicate the association of images and words with either 'able-bodied' or 'disabled' and with either 'good' or 'bad'. The DA-IAT test measures differences in response times in milliseconds, and these minute differences in response time (for example, 200 more milliseconds required to associate an image of a disabled individual and a 'good' term) provide evidence of implicit preference or non-preference for able-bodied or disabled individuals. The results of the test are expressed in the form of a D score. The amount of time required to identify incongruent concepts (items most individuals would not readily associate) is subtracted from the amount of time required to associate congruent concepts (items most individuals would readily associate). This number is then divided by the standard deviation of all results to obtain the D score.

The Project Implicit researchers have provided a guide to interpretation of the D score based on the scores of more than 38,000 individuals who have completed the DA-IAT through the public site (Greenwald, Nosek, & Banaji, 2006). A D score of -0.66 or less indicates strong preference for disabled individuals, -0.36 to -0.65 indicates moderate preference for disabled individuals, -0.16 to -0.35 indicates slight preference for disabled individuals, -0.15 to 0.15 indicates no preference, 0.16 to 0.35 indicates slight preference for able-bodied individuals, 0.36 to 0.65 indicated moderate preference for able-bodied individuals, and 0.66 and higher indicates strong preference for able bodied individuals.

In Table 1, the 132 participants' DA-IAT scores are grouped according to the Project Implicit D score ratings guide, and the number and percentage of D scores which correspond to

each rating are displayed. Only six ratings of the seven possible are represented, as no participants were rated as having strong preference for disabled individuals.

Table 1

*D score ratings for study sample (N=132)*

D Score Rating	Strong Preference for Able-bodied (0.66 or >)	Moderate Preference for Able-bodied (0.36 to 0.65)	Slight Preference for Able-bodied (0.16 to 0.35)	No Preference (-0.15 to 0.15)	Slight Preference for Disabled (-0.16 to -0.35)	Moderate Preference for Disabled (-0.36 to -0.65)
Number of Participants	N=86	N=28	N=9	N=3	N=2	N=4
Percentage of total sample	65.1%	21.2%	6.8%	2.2%	1.5%	3.0%

In Table 2, participants are grouped according to clinical specialty and the number and percentage belonging to each clinical specialty is displayed. Findings of the National League for Nursing (NLN) about the clinical specialties of the population of nurse educators in the United States (Kovner, Fairchild, & Jacobson, 2006) are included for comparison and indicate that the sample of this study is representative of the population of nurse educators described by the national data.

Table 2

*Clinical specialty of study sample (N=132) and comparison with national data*

Specialty	Medical-Surgical, Intensive Care Unit, Oncology	Mental Health, Community Health	Maternal-Child	Rehabilitation, Neurology	Did not answer
Number of Participants	N=52	N=29	N=29	N=4	N=26
Percentage of total sample	37.1%	20.7%	20.7%	2.9%	18.6%
NLN 2006 Census Data of Clinical Specialty of Nurse Educators	39.1%	18.6%	17.5%	2.4%	13.4 % (other)

## Quantitative Findings

**Aim 1.** *Measure the implicit attitudes of nurse educators toward individuals with disabilities.*

The first aim was examined by using the DA-IAT test, which measures implicit attitudes, and by establishing internal consistency reliability of the DA-IAT for the sample. The 132 participants used in the analysis demonstrated a mean D score of 0.76 (SD 0.46), confirming the descriptive findings in table 1 that participants demonstrated preference for able-bodied

individuals. The D scores ranged from -0.63 to 1.64 out of a possible range of -2.0 to 2.0. The mean D score of 0.76 is within the range described by Project Implicit as corresponding to strong preference for able-bodied individuals. Thirty-five additional DA-IAT D scores (from participants who did not complete all three study tools) were examined. A post hoc analysis of these results revealed a mean D score of 0.71 (SD 0.52) which also corresponds to strong preference for able-bodied individuals. The difference between the two groups was not statistically significant,  $t(166) = 1.28, p = .24$ . Thus the total sample of  $N = 167$  nurse educators can be described as holding strong implicit preference for able-bodied individuals. Internal consistency reliability of the DA-IAT was established by a Cronbach's alpha of .798 for this study. Aim 1 was clearly answered by this study.

**Aim 2.** *Explore whether IAT scores can be predicted by demographic variables such as exposure to individuals with disabilities and clinical nursing specialty.*

Eleven demographic variables were examined by survey. The participants were asked describe themselves in terms of whether they have a disability, frequency of contact with individuals with disabilities, and clinical specialty. The demographic variables surveyed were: a) presence of a disability, b) more than monthly contact with individuals with disabilities, c) family members with disabilities, d) frequency of contact with family members with disabilities, e) contact with nurses with disabilities, f) frequency of contact with nurses with disabilities, g) contact with student nurses with disabilities, h) frequency of contact with student nurses with disabilities, i) contact with patients with disabilities, j) frequency of contact with patients with

disabilities, and k) clinical specialty.

For each demographic variable, the number of participants who identified themselves as belonging to each category is displayed in Table 3. Also displayed is the mean D score and standard deviation for each subgroup. Missing data for each subgroup is displayed (in cases of participants who self-reported their inclusion in a particular subgroup but had no D score). For example, demographic question (f) asks participants to describe the frequency of contact they have with nurses with disabilities. Five responses are possible, from none to daily contact. In this subgroup 56 nurse educators reported no contact with disabled nurses. There were also 16 participants who reported no contact with disabled nurses but for whom no D score was reported. The mean D score of this subgroup was 0.883 (SD 0.418). Finally, a p- value is displayed for each demographic variable. In the case of frequency of contact with nurses with disabilities, the p- value is 0.08. The p values were obtained through the use of either an independent t-test or Analysis of Variance (ANOVA), depending on the number of mean D scores to be compared.

With one exception (b, more than monthly contact with individuals with disabilities) no statistically significant p- values were derived from the demographic survey results. Therefore, regression analysis was not warranted. A larger sample would be required in order to support the prediction of IAT scores on the basis of demographic variables. However, the mean D scores reported within some demographic variable groups (b, c, f, g, and j) suggest that increased exposure to individuals with disabilities may lead to lower D scores which reflect less implicit preference for able-bodied individuals. Only one demographic variable, more than monthly contact with individuals with disabilities, was statistically significantly associated with implicit

attitudes towards disabled individuals,  $t(128) = -2.184$ ,  $p = .029$ . Overall, the aim of predicting DA-IAT scores on the basis of demographic variables was not met by this study.

Table 3

*D scores and p values for demographic data for sample (N=132)*

Demographic Question	N	Missing	D score mean	SD	P value
a) Visible disability Yes	N=9	3	.829	.331	.820*
a) Visible disability No	N=98	25	.773	.487	
b) More than monthly contact Yes	N=55	20	.685	.514	.029*
b) More than monthly contact No	N=46	13	.901	.410	
c) Family member with disability yes	N=36	12	.765	.435	.835*
c) Family member with disability No	N=65	21	.794	.505	
d) Frequency family contact Daily	N=16	0	.757	.482	.517**

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d) Frequency family contact Weekly	N=13	0	.743	.571	
d) Frequency family contact Monthly	N=12	1	.745	.464	
d) Frequency family contact Less than monthly	N=27	1	.640	.383	
d) Frequency family contact None	N=60	2	.836	.489	
e) Nurses with disability yes	N=40	6	.663	.532	.312*
e) Nurses with disability No	N=67	22	.846	.427	
f) Frequency Nurses contact Daily	N=4	2	.422	.272	.080**
f) Frequency nurses contact Weekly	N=14	2	.532	.525	
f) Frequency nurses contact Monthly	N=6	2	.734	.602	
f) Frequency nurses contact Less than monthly	N=27	5	.750	.505	

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f) Frequency nurses contact None	N=56	16	.883	.418	
g) Student nurses contact yes	N=27	10	.654	.460	.219*
g) Student nurses contact No	N=74	24	.831	.481	
h) Freq student nurses contact daily	N=4	2	.613	.349	.110**
h) Frequency student nurses contact Weekly	N=13	4	.570	.573	
h) Frequency student nurses contact Monthly	N=5	2	.642	.285	
h) Frequency student nurses contact Less than monthly	N=14	9	.647	.453	
h) Frequency student nurses contact None	N=65	14	.877	.469	
i) Patients with disability contact yes	N=89	18	.776	.485	.659*
i) Patients with disability contact No	N=12	12	.838	.456	

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j) Frequency patients contact daily	N=7	1	.755	.382	.963**
j) Frequency patients contact Weekly	N=35	9	.711	.552	
j) Frequency patients contact Monthly	N=21	3	.792	.381	
j) Frequency patients contact Less than monthly	N=31	7	.831	.521	
j) Frequency patients contact None	N=7	7	.942	.212	
k) Clinical Specialty					
k) Med-surg, onc, ICU	N=51	1	.770	.441	.553**
k) Psych/Comm Health	N=27	2	.707	.538	
k) OB/Peds	N=26	3	.869	.475	
k) Rehab/neuro	N=3	1	.747	.566	

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\* indicates p value from Independent T test, \*\* indicates p value from one-way ANOVA

### Qualitative Findings

**The Sample.** Participants were asked to reflect upon their DA-IAT rating results and to

provide information regarding the admissions policies and practices of their institutions in order to arrive at a clearer picture of the nursing school admissions environment. It is important to note that participants were informed of their DA-IAT rating result immediately upon completion of the DA-IAT and before being invited to respond to open-ended questions. None of the participants whose DA-IAT score reflected implicit preference for disabled individuals took part in the open-ended survey. This open-ended survey sample thus includes only participants whose DA-IAT scores reflected no preference or preference for able-bodied individuals.

Table 4 describes the portion of the sample that completed the open-ended questions. A total of 118 participants out of 132 (88.6%) completed the open-ended questions. A description of the D scores of these 118 participants is displayed in the Table 4. A total of 108 (92.3%) participants who completed the open-ended questions showed either moderate or strong preference for able-bodied individuals, which is a higher percentage of moderate or strong preference for able-bodied individuals than that of the total study sample (86.3%, N=132).

Table 4

*D scores of participants who completed the open-ended questions (N=118)*

D score rating	Moderate Preference for Disabled (-0.36 to -0.65)	Slight Preference for Disabled (-0.16 to -0.35)	No Preference (-0.15 to 0.15)	Slight Preference for Able-bodied (0.16 to 0.35)	Moderate Preference For Able-Bodied (0.36 to 0.65)	Strong Preference For Able-Bodied (0.66 and >)
Number	N=0	N=0	N=1	N=9	N=25	N=83
Percent of total open-ended sample	0%	0%	.07%	6.8%	21.3%	70.9%

While participants who demonstrated implicit preference for disabled individuals are not represented in the sample of open-ended question respondents, this group is representative of nurse educators in the United States in terms of clinical specialty (Kovner, Fairchild, & Jacobson, 2006). Table 5 shows the clinical specialty of the participants who completed the open-ended questions. The numbers here are consistent with the documented percentages of clinical specialties of the population of nurse educators in the United States which indicates that the open-ended question sample is representative of the population.

Table 5

*Clinical specialty of participants who completed the open-ended questions*

Clinical Specialty	Medical-Surgical, intensive care or oncology	Mental Health or Community Health	Maternal-Child Health	Rehabilitation or Neurology	Did not answer
Number	N=31	N=19	N=18	N=4	N=11
Percent of total sample	37.8%	23.2%	22.0%	4.9%	13.4%
NLN 2006 Census Data	39.1%	18.6%	17.5%	2.4%	13.4% (other)

**Aim 3.** *Recommend interventions to facilitate the admission of otherwise qualified disabled persons into nursing programs and improve the treatment of disabled individuals once admitted*

The open-ended questions were designed to supplement the DA-IAT and to shed light on the challenges and preconceptions which play a role in the nursing school admissions environment. The open-ended question data was examined via the content analysis method documented by Krippendorf (1980) (see chapter 3 for a full description of this methodology). The responses to the questions were forwarded by Project Implicit to the researcher in plain text format. The responses were read three times. Textual units were described and labeled. The labels then were used to develop categories and subcategories and definitions were developed. Reliability of the coding procedure was established by a second coder, who reviewed ten percent

of the data and found 94 % agreement. In order to establish validity, an expert in nursing education reviewed the definitions of the categories and found the categories to be consistent with content commonly discussed in nursing education literature. Results from the five questions were analyzed as a whole rather than question by question.

**The qualitative survey.** After completing the DA-IAT, participants were presented with the following questions:

1. What are your thoughts about the results you obtained by taking the Disability Attitudes Implicit Association Test?
2. What did you learn about yourself in taking the test and reviewing the results?
3. Does your program have any formal or published criteria for guiding how faculty are to consider the admission of students with visible disabilities? Yes\_\_\_\_\_ No\_\_\_\_\_ If yes, please describe these criteria.
4. Some faculty use their own unwritten values and beliefs to influence their evaluation of an applicant's qualifications for nursing school. What unwritten factors are you aware of that may have influenced the decision to admit or not admit an applicant with a visible disability to your program?
5. Is there anything else that you think is important for me to know to better understand

the factors that influence your program's decision to admit or not admit a visibly disabled applicant?

The content analysis of data from the open-ended questions revealed four content areas: *The admissions process, admission criteria, the DA-IAT test, and responses to DA-IAT test results*. These content areas and their subcategories are displayed in table 6. A description of each will follow.

Table 6

*Summary of content areas and subcategories of qualitative data (N=118)*

Content areas	Admissions Process	Admission Criteria	DA-IAT Test	Responses to DA-IAT Test results
Subcategories	Unfamiliarity with admission process	Faculty ignorance of admissions policies	Unfamiliarity with the DA-IAT	Participants who found the results to be interesting
	Legal compliance with the ADA	Fairness	Physical factors affecting testing	Participants who were upset by their results
	Unknown information	Faculty resources needed		Participants who challenged or attempted to discredit the results
		Academic criteria		
		Physical abilities		
		Faculty reconsidering what it takes to be a nurse		Participants who accepted the results
		Faculty assumptions regarding safe patient care		
		Ability to complete program outcomes		

**Category 1: The Admission Process.** The first area of content, the admissions process, is divided into three subcategories: *unfamiliarity with the admissions process*, *legal compliance with the Americans with Disabilities Act*, and *unknown information*. The first subcategory, *unfamiliarity with the admission process*, was defined as non-participation in current admissions



decision-making. One participant reported: “I do not sit on the committee that reviews applicants”. Additionally, some faculty replied they were not familiar with the process itself for the following reasons: they had never been involved in admissions decision-making, they were new to the school, or the admissions committee at their institution was not made up of nursing faculty. Additionally, a few faculty members reported that the admission of a student with a disability is an unfamiliar process because this has not yet happened at their school.

*Legal compliance with the Americans with Disabilities Act (ADA)* is defined as reliance upon the ADA for inclusivity in admission decisions and accommodation. Participants reported that their schools followed the ADA when looking for guidance about whether to admit a student with a disability. Some faculty commented on the guidelines for accommodation from the ADA. One faculty member replied:

I am not responsible for admitting students to the university, but we are a state university, so I can't imagine we can deny a student admission based on a disability, if reasonable accommodations can be made, such as hearing aids in stethoscopes, etc.

Other participants reported that they do not discriminate on the basis of a disability because the ADA is followed. One replied “We cannot discriminate. The ADA says so.” Another participant stated “I work for the state and we follow ADA policies and guidelines.” Still another participant reported that the school follows the ADA but some negativity surrounds the topic “Unwritten beliefs regarding the practicalities of the reasonable accommodations requirements of the Americans with Disabilities Act. Often hear the ‘we have to admit them, but they will not be successful’ in the program.”

The final subcategory, *unknown or lack of information*, is defined as several types of information educators do not have about students with disabilities and the admission process. The first reported by an educator is being unaware of any history of application by disabled students. One faculty member reported "I am unaware of any student with a disability applying to our college of nursing." Another participant reported a lack of awareness of any student being denied admission due to the presence of a disability. The last area identified by participants is the inability to identify students with disabilities from the information on the application. One participant indicated "When we review applications for admission there is nothing on the application that indicated the student has a disability or not." Another participant echoed a similar thought "We do not see students while making admissions decisions, thus those with disabilities have equal access to the program."

**Category 2: Admission Criteria.** The second area of focus identified, admission criteria, can be organized into seven subcategories: *faculty ignorance of admission policies, fairness, faculty resources needed, academic criteria, physical abilities, faculty reconsidering what it takes to be a nurse, faculty assumptions regarding safe patient care, and ability to complete program outcomes*. The first two, *faculty ignorance of admission policies*, which is defined as faculty being unfamiliar with their school's admission policies, and *fairness*, which is defined as free from preference in judgment, can be described very briefly. Many faculty members are unaware of either formal or unwritten criteria for the admission of students with disabilities, and many faculty members reported a concern about fairness, or the need to judge all applicants by the same set of standards.

*Faculty resources needed* is defined as the means of support needed by faculty when working with students with disabilities. Faculty members commented on struggling with both how to best help the individuals with the disability in the clinical setting and issues of extra time commitment and providing accommodation. Both of these concerns impact admission decisions regarding students with disabilities. One survey participant commented

There was widespread reluctance when a wheelchair bound student was admitted to our program, especially among clinical faculty (who, I think, just didn't know how they were going to manage in the clinical setting). Part of the issue is that every time we have a student with special needs, thinking about and dealing with accommodations gobbles up precious time. So...regardless of faculty perceptions about whether a student can be successful, there remains the time element.

*Academic criteria*, defined as grade point average, completion of prerequisite courses, and evaluation of critical thinking, was described by participants as a crucial piece of information to be considered in the review of applications. One faculty member commented "our criteria for admittance is based on GPA, extracurricular activities, and essays." Another participant stated "Applicants have traditionally been accepted if they met completion of the pre-req requirements successfully, a C or better and if they have a 2.75 in the science pre-reqs." Another faculty member replied "No formal criteria that I know of, only intellectual screening." Clearly nurse educators believe grade point average to be a fundamental piece in considering applicants. A few educators noted that critical thinking ability is important to consider when reviewing applicants to the nursing program. One participant stated "Critical thinking

skills...would be important qualifications.”

A few faculty members reported a focus on the *ability of a student to complete the course or program outcomes*, which is defined as the successful completion of a course of study. One faculty stated “I know that we do not discriminate unless there is significant rationale for predicting that the disability would preclude the student’s meeting program objectives. We have a very active and credible university program governing this issue.” Another faculty member stated “To the best of my knowledge the program admission is based on academic criteria and a person’s self assessment of their ability to meet program outcomes.”

An individual’s *physical ability*, defined as the ability to perform some physical act, was reported by many faculty members to be of critical importance in admission decisions. Many faculty members felt that the ability to complete nursing duties and physical tasks, such as the ability to independently perform cardiopulmonary resuscitation (CPR) and to independently carry out the list of Essential Functions (AACN, 2001), is a crucial piece to admission criteria. One participant felt “I would consider their ability to carry out a job that to begin with requires physical ability.” Another faculty stated “We can’t admit someone who does not have the physical ability to be a nurse.” Another participant was very specific about the physical abilities needed to be seriously considered as a qualified applicant to the nursing program and stated

In the student handbook and other published materials, we describe specific core performance standards for admission and progression that include physical requirements of the program such as the ability to move from room to room and administer CPR, as

well as the ability to hear auscultatory sounds, cries for help, and visual acuity to observe patient responses when assessing patients. Additionally abilities such as critical thinking, interpersonal skills, communication, fine and gross motor skills, and tactile abilities are included.

A second faculty member echoed this opinion

My belief is that one must be physically able to perform patient care activities e.g. they must be ambulatory and have the ability to move all extremities in a coordinated fashion. They must be able to work quickly given an emergent situation e.g. a code. They must be able to communicate, they must be able to speak and be understood, have adequate vision and hearing to perform physical assessments.

Another faculty member was also quite specific about the physical requirements “There is an attitude that a student cannot be admitted to the program if the student cannot meet the demands of an acute care med-surg floor. Therefore students with handicaps are discriminated against.”

*Faculty reconsidering what it takes to be a nurse*, defined as questioning the traditional beliefs about mandatory qualifications for admittance, was identified by a very few participants.

One such participant reported

I think some of our faculty are “old school” thinkers about what students “must” be able to do to be nurses. I don’t think I’m very “old school” any more after working with students with disabilities and have redefined what I think nurses “must” be able to “do” in order to be nurses based on my experience with highly motivated students with

different abilities.

The participants who questioned the traditional beliefs about what it takes to be a nurse revealed moderate and slight preference for able-bodied individuals. A number of participants commented that critical thinking is a more crucial skill than physical task completion for students who wish to gain admission to a nursing program.

A significant topic within admission criteria is *faculty assumptions regarding safe patient care* and is defined as a statement which is assumed to be true and from which conclusions can be drawn about the care a student with a disability would provide. Participants commented about assumptions faculty members make regarding the physical capabilities of students with disabilities as well as the ability of these individuals to gain employment as nurses after graduation. One participant stated “A formal criteria is having to do with the ability to function in the clinical areas.” Another participant replied “Admission criteria would include the ability to function safely as an RN and ability to get employment following graduation.” Another educator reported “The ability of the nurse to provide safe, high quality care to any patient would guide my willingness to admit a person with a disability.” Another participant provided a similar response “The assumption of the faculty about the physical abilities of the student always come into the conversation.” Regarding the issue of safety alone, one participant stated “I try to consider if the patient ultimately can be cared for safely, regardless of the nurse and his/her disabilities.” Another participant stated “As long as the individual can provide safe care that is the priority.”

**Category 3: Disability Attitude Implicit Association Test (DA-IAT).** Another area of focus that emerged relates to the Disability Attitude Implicit Association Test (DA-IAT). Two subcategories, *unfamiliarity with the DA-IAT*, and *physical factors affecting testing*, were identified. The subcategory of *unfamiliarity with the DA-IAT*, defined as not being acquainted with the DA-IAT, was reflected in participants' questions regarding test design and methodology. One participant reported "I am curious about how it tests what I am told it is testing." Another educator replied "I would like to understand the methods."

The second subcategory, *physical factors that affect testing*, is defined as phenomena that change test results. Two factors were identified; eye-hand coordination and handedness. Eye-hand coordination was a common comment that several participants reported as affecting their results and one participant reported "My eye hand coordination is not as good as it used to be!" Participants questioned whether right or left handedness might change the test results as was reported by one educator "If a person is right or left handed it might bias how they respond to the changes from left to right in the categories." One participant questioned "What is the influence of right handedness versus left handedness?"

**Category 4: Reaction to the Test Results.** Reaction to the test results can be divided into four subcategories: *participants who found the results to be interesting*, *participants who were upset by their results*, *participants who challenged or attempted to discredit the test results*, and *participants who accepted the test results*. Many participants reported they were very surprised by the test results and yet a few reported they found their results *interesting*, which is defined as thought-provoking. One educator commented

It is interesting to see that I have a preference for abled people. I feel that I have a strong sense of compassion for disabled people and my goal is to help them function at as high a level as possible and feel included in the group in which they find themselves whether it be a school, hospital, or community setting.

A number of responses describe *participants who were upset with their test results*, which is defined as concern, discomfort, worry, or distress at the test results. Participants commented “Disappointed in my lack of awareness”, “I am not comfortable with the results”, and “Surprised (shocked) with my responses. I expected the results to be different. My heart wasn’t reflected in the results.” One educator found the test to be annoying.

A number of educators *challenged, or attempted to discredit the test results*, which is defined as disputing the test results. One stated “What the test implied, I have a preference for able people- although I disagree.” Another responded “I strongly disagree with them. I have no preference. I am just not exposed to people with visible disabilities in my daily life.” Another educator replied “I don’t think I have the characteristics the test identified.” A number of participants questioned the reliability and validity of the DA-IAT. One participant commented “I doubt the validity.” Another educator reported “Wonder about its reliability and validity.” Finally, a few participants assumed they would have different results because they do have frequent contact with individuals with disabilities. This shock is revealed in one educator’s response

My ability to select answers was negatively impacted by time pressure- your time-



pressured survey has nothing to do with my personal preference and I fail to see how your survey can predict my attitude. I see no relationship between my beliefs or attitudes and the time-pressured test. I have a severely disabled daughter and would argue vigorously that I have a preference toward disabled folks.

A few participants who provided comments were *accepting of the test results*, which is defined as acknowledging the results obtained. One educator reported “The results were not surprising, most people identify with people who are like them and have more positive associations to them.” Another participant stated “I am so ingrained in able bodied culture. I am also Caucasian and likely think the same way toward minority groups.” One faculty member commented more generally “I’m not surprised I have inherent biases; we all do.” A few educators reported that they had bias they were unaware they carried.

With regard to aim 3, *recommend interventions to facilitate the admission of otherwise qualified disabled persons into nursing programs and improve the treatment of disabled individuals once admitted*, it is clear that any attempt to intervene in the nursing school admissions environment will require familiarity with a series of preconceptions regarding the importance of physical ability in the practice of nursing. These preconceptions are embodied in lists of essential nursing functions and in assumptions regarding a generalist ideal of nursing school graduates. This study shows that these ideals are clearly held implicitly and explicitly by nurse educators across the clinical specialty spectrum. Participants reported that critical thinking is the other fundamental ability required of nursing school applicants. One possible area of intervention, then, may well be a renewed emphasis on the evaluation of critical thinking ability

of nursing school applicants- possibly entirely apart from considerations of physical ability.

*Aim 4. Recommend direction for future research.* The shock expressed by DA-IAT participants clearly points to a lack of awareness of implicit attitudes toward individuals with disabilities in nursing education, and the mean D score of the nurse educators who participated in this study reveals a level of implicit preference for the able-bodied which far exceeds the level of preference demonstrated by the D scores of the general public. The DA-IAT may prove to be an effective tool for the opening of candid conversation and honest examination of nursing school admissions policies and practices. These areas of exploration may include critical evaluations of the importance of physical abilities in nursing education and nursing practice. The experiences of disabled individuals who have completed nursing education will provide critical insights for nurse educators and admissions policy makers.

The open-ended questions revealed that nurse educators are often unfamiliar with the admissions policies in which they work. An inventory of admissions policies and practices across the United States, along with a comprehensive survey of knowledge of admissions policies, will help to complete the picture of the admissions environment. Preconceptions regarding safe patient care point to a need for further study of the experiences of nurses with disabilities in the workplace. Finally, nurse educators who are shocked by their results of the DA-IAT may be persuaded to take part in workshops in which accessibility in nursing education is the explicit focus. Nurse educators may also look for examples across disciplines as they seek to more effectively evaluate the critical thinking ability of applicants. With regard to aim 4, *suggest directions for future research*, the responses to the open-ended questions provide a basis for

further critical examination of the nursing education environment and of policies and practices which tend to lead to the exclusion of disabled students.

## CHAPTER FIVE

### DISCUSSION

This chapter will provide a discussion and summary of the results, the implications for nursing education that stem from the results, and the direction for future research identified through this study. Additionally the limitations of the study will be discussed.

#### Discussion of Results

##### Quantitative Data.

*Aim 1. Measure the implicit attitudes of nurse educators toward individuals with disabilities.*

The mean D score of 0.76 for the participants enrolled in the study and the mean D score of 0.71 for participants not enrolled in the study reveal a strong amount of preference for able-bodied individuals. As previously described, the Project Implicit public site has documented a mean D score = 0.45 (SD=0.43) from over 38,000 individuals who completed the DA-IAT between 2003 and 2006 (Greenwald, Nosek, & Banaji, 2006). Clearly this sample of nurse educators demonstrated a much higher D score, which indicates they hold a greater amount of preference for able-bodied individuals.

Perhaps this significant difference in D scores stems from long held beliefs in the importance in the ability to complete hands-on tasks in the practice of nursing. This focus on physical ability may have been necessary in past years. However, physical tasks, such as the

insertion of a foley catheter, can be completed by other health care workers. Many physical tasks are not only the responsibility of the registered nurse. Quite possibly nurse educators have not been able to shift focus away from emphasizing physical abilities because of the historical role in nurses job responsibilities.

In reality, the profession of nursing is made up of much more than physical tasks. Mental abilities are a critical component of a successful nurse. The ability to think critically about a patient situation, recognize that a medication is not an appropriate dose, and evaluate the home situation of a patient in terms of safety and potential hazards may be more important for many nursing jobs than the ability to complete a hands-on task.

A second possible explanation for this great difference in D scores between nurse educators and the general population is the focus that nurses have on health and wholeness. Nurse educators may be more dualistic in their thinking than the general population; either an individual is healthy or sick, able-bodied or disabled. Through this black-and-white way of thinking, it is possible that educators more easily categorize individuals and their situations as being positive or negative. Therefore it is not surprising that, as disability is perceived as illness or brokenness, nurse educators gravitate toward individuals perceived as healthy and whole.

Regardless of the reason for the difference in D scores between the general population and nurse educators, this study reveals a significant amount of bias held by nurse educators toward individuals with disabilities and this study is the first to document these implicitly held attitudes. Nurse educators must be aware of the attitudes they hold in order for cultural change to

begin and to insure that individuals with disabilities have the opportunity to gain admission to nursing programs, be treated with respect and dignity, graduate with degrees in nursing, and practice as professional nurses.

*Aim 2. Explore whether IAT scores can be predicted by demographic variables such as exposure to individuals with disabilities and clinical nursing specialty.*

Surprisingly, among the responses to demographic variables, the only statistically significant result was in comparing mean D scores between participants who answered 'yes' or 'no' to *Do you have more than monthly contact with individuals with disabilities* ( $p=.029$ ). Responses to two other questions revealed non-significant findings, but may warrant further investigation: frequency of contact with nurses with disabilities ( $p=.08$ ) and frequency of contact with student nurses with disabilities ( $p=.110$ ). In both of these cases, participants with no contact with disabled individuals revealed higher D scores (.883 and .877) and those participants with frequent contact revealed much lower D scores (.422 and .613). In both of these responses, only 4 participants reported daily contact with nurses with disabilities and with student nurses with disabilities. A larger sample size would be needed to confirm this trend. The results suggest, however, that an increase in exposure to persons with disabilities tends to result in a decrease in negative bias toward persons with disabilities. This trend would need to be studied, however, as simple exposure to racial differences or age differences do not predict positive change.

The original sample size of 60 per group was based on detecting an absolute difference in

mean D scores of 0.1 with a group standard deviation (SD) of 0.2. In light of observed group standard deviations of 0.5, post hoc power calculation determined that 100 participants per group would be required to detect differences in mean D scores of 0.2 and 390 per group for differences in mean D scores of 0.1 (with SD=0.5). Therefore, although differences in mean D scores among groups of 0.1 to 0.2 were observed for this study, the statistical tests performed were underpowered due to the larger than expected group standard deviations.

**Qualitative Data.** The data revealed four main areas for consideration: responses to test results, a concern for physical ability as admission criteria, faculty assumptions about safe patient care, and evaluation of critical thinking skills at the time of application review. The participant responses to the results of the DA-IAT test provided some of the most critical insights about nursing faculty attitudes toward individuals with disabilities. Clearly some faculty were simply upset and disappointed by their results as they hoped or assumed they would demonstrate less bias than they did. Others doubted the test results or questioned the validity and reliability of the test. These educators may also have felt upset but responded with defensiveness rather than acceptance by placing blame on what they viewed as inadequacy of the test rather than on themselves. It is not surprising that humans point to a flaw in another person or thing rather than admit that they themselves are flawed. Still other participants rejected the accuracy of the test results because they have frequent life experiences with individuals with disabilities. These participants naturally assumed they would not hold bias due to their experiences of advocating for a family member or other disabled individuals in their lives. However, the test results clearly demonstrate that, regardless of life experiences or due to life experiences, most able-bodied

nurse educators have preference for other able-bodied individuals.

A few of the participants emailed the researcher with questions or comments after completion of the DA-IAT. One participant vigorously denied the accuracy of the test results and reported the rationale for the denial was the experience of living with and caring for a daughter with a disability. This participant, and many other participants, clearly struggled with the fact that the test results demonstrated an *implicit* bias toward individuals with disabilities. What may be lacking in this participant's understanding (and in the understanding of other participants who similarly questioned the accuracy of the test) is that humans tend to have preferences for like individuals and preferences may be held explicitly or implicitly. The above participant would likely state very positive explicit attitudes toward individuals with disabilities, as would many individuals. However, implicit bias is the focus of this study and this participant apparently carries bias that previously was unidentified. The results of the DA-IAT that demonstrate unconscious bias were quite eye-opening and upsetting for this participant.

Rather than focusing on individual test results, however, a focus on nursing education in the society of the United States as a whole is necessary. The implicit attitudes held are not simply the views of one or two individuals but rather are a reflection of a social context that shapes and supports certain preferences. These preferences naturally spill over into nursing education. Acknowledging that the test results may have some element of validity may prove more productive than arguing for the veracity of the test. In this regard, the results can be used as a prompt to review nursing admission policies and environment. Careful consideration of these results may lead nurse educators to work toward a direct examination of the nursing school



admission environment with special attention to discriminatory policies or practices, so that individuals with disabilities can be supported in their education and successful in their pursuit of a career in nursing. In addition, broad discussions of diversity, including individuals with disabilities, may be helpful to examine both the culture and practices within an institution.

A few participants commented on their unfamiliarity with the DA-IAT and questioned eye-hand coordination and handedness as factors that may have affected their test results. As previously described, handedness is not a factor that could change test outcomes. Additionally, eye-hand coordination is not an issue because the test compares one set of response times with another set of response times from the same individual. The responses here demonstrate another way in which some participants chose to reject the test results.

The next crucial area of responses deals with the expectation of physical abilities as criteria for admission into a nursing program. Participants listed characteristics such as the ability to perform CPR, hear cries for help, move in tight spaces, have enough visual acuity to observe patient responses during physical assessment, and think critically as necessary for admission. Some amount of ‘common sense’ thinking might have affected these responses. Clearly there is an element of physical ability necessary for many jobs in nursing, particularly hospital-based jobs involving direct patient care. However, because not all nursing jobs involve direct patient care and not all direct patient care is physical, hands-on care, one might question why there is such a focus on physical ability for admission into nursing education programs. The ability to auscultate heart and lung sounds may be critical to a job providing direct patient care in a hospital setting, but not to a nurse doing outpatient education, utilization review, or clinic work.

A few faculty members did challenge the “old school” thinking that one must be physically able to complete nursing tasks to gain admission to a school of nursing, but by far, most participants reported physical ability to be crucial to admission decision-making.

The belief about physical abilities described by participants is the result of many decades reinforcing the notion that discussion within nursing and nursing education of an insistence that all nursing school graduates be prepared to be generalists. Quite possibly, 50 years ago nurses did need the ability, in a hospital setting, to work wherever needed. Today, however, job descriptions of nurses are so varied and job responsibilities are so specialized that generalist preparation seems to be an out-of-date practice and yet this “old school” framework still exerts a strong pull on those responsible for admission decisions and student success.

The deep-seated belief that applicants must possess a full range of physical abilities in order to gain admission into nursing education programs, along with the vehement denials of the existence of bias or of the existence of discrimination against the disabled, points to a contradiction within the admissions environment. Participants revealed an explicit reliance upon the ADA, and all nurse educators have access to The American Nurses Association’s (ANA, 2003) published definition of nursing, which does not tend to exclude disabled individuals. The ANA has identified the following six essential features of professional nursing that contribute to contemporary definitions of nursing:

1. Provision of a caring relationship that facilitates health and healing,
2. attention to the range of human experiences and responses to health and illness within the

physical and social environments,

3. integration of objective data with knowledge gained from an appreciation of the patient or group's subjective experience,
4. application of scientific knowledge to the process of diagnosis and treatment through the use of judgment and critical thinking,
5. advancement of professional nursing knowledge through scholarly inquiry, and
6. influence on social and public policy to promote social justice (p.5).

Drawing from these six essential features of professional nursing, the ANA established the following definition of nursing: "Nursing is the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities, and populations" (ANA, 2003, p 6).

The definition of nursing provided above describes a holistic approach to the profession of nursing. Nothing in this definition dictates that a nurse must be able to perform cardiopulmonary resuscitation, maneuver in tight spaces, or maintain enough visual ability to see patient responses during assessment. The focus on physical ability seems to be a common sense and "old school" approach to nursing, based on assumptions, which may be implicit assumptions, that all nurses provide direct patient care in a hospital setting or must be prepared to do so. Nurse educators must be challenged to reexamine their explicit and implicit beliefs

about what constitutes a qualified applicant in the modern era of nursing. It is readily apparent that many educators serving on admission committees are out-of-step with the ANA's criteria for the essential features of a professional nurse.

Participants revealed a competing, contradicting, and often unwritten set of assumptions about essential characteristics of nursing students. These include the ability to perform specific physical tasks and these assumptions help to shape an environment that unnecessarily imposes burdens on disabled individuals. Neither nursing students, nor nurse educators, nor the nursing profession are honored when admissions decisions are based upon unwritten assumptions rather than upon critical examination based upon a strong definition of nursing. If nurse educators use these unwritten qualifications to make admission decisions, individuals with visible disabilities will be excluded.

The assumptions made by faculty members about the ability of students with visible disabilities to provide safe patient care shows a pattern of discriminatory thinking on the part of the nursing faculty members. First, not all nurses provide direct patient care, so it is unreasonable to deny admission to a student based on a set of physical characteristics and an assumption that every nurse will provide direct patient care. The data demonstrates that faculty members assume that safe patient care may be an issue for individuals with disabilities, presumably due to their disabilities. Clearly all nursing faculty members want the students they work with to provide safe patient care. The assumptions described here are likely not based in experience or research, but rather on socially constructed beliefs and attitudes toward individuals with disabilities. In addition, the findings indicate that some faculty feel burdened by the pressure to spend equal

time with all students, and therefore deny disabled students the extra time they may need to master a skill.

Faculty's comments regarding students' ability to engage in critical thinking and meet program outcomes arose from the data. The issue here is that faculty evaluate students on these two criteria during the admission process. How are nursing faculty able to evaluate a student's critical thinking ability- the ability, for example to identify that an ordered dosage of medication is really 10 or 100 times the dosage appropriate for the patient? The same holds true for program outcomes. Without any knowledge of, or experience with, any student, with or without a disability, how could a faculty member accurately estimate whether a student could or could not meet program outcomes? Faculty assumptions may be driving decisions in both these cases. Additionally, this study focused on visible disabilities, or those which could be identified visually by another person. How might faculty assumptions affect an applicant with a known learning disability that is invisible?

The ANA definition of nursing may prove to be a much more useful foundation for admission requirements and policies. A strong critical thinking capacity, rather than the capacity to complete physical tasks, may prove to be a much better predictor of a student's success in nursing. The use of the ANA definition of nursing and evaluation of critical thinking ability would not lead to discrimination against individuals with disabilities. Quite possibly the evaluation of critical thinking ability, along with creative efforts to evaluate applicants' compassion and caring, may lead to admissions processes that reflect the values outlined in the ANA definition of nursing.

Data on the lack of knowledge about admission process and procedures was surprising and provides insight about individual schools, faculty members, and the steps these schools go through to admit students. Many of the respondents do not participate in this process. Many faculty members did mention the importance of the use of the Americans with Disabilities Act (ADA) in making admission decisions. Recommended accommodations for disabled students are described as a critical part of admission decision making. If faculty members anticipated that appropriate accommodations could be made for the student in question and the student were otherwise qualified for admission, then the students would likely be offered admission.

Explicit attitudes of nurse educators toward individuals with disabilities have previously been described in the literature as overwhelmingly positive. This study has demonstrated a very different result based on implicit attitudes. These unconscious attitudes almost certainly will (based on research of predictive value) spill over into assumptions made about the physical abilities of disabled individuals, admission decision-making, and the treatment of these individuals once admitted to nursing education programs.

## **Summary**

In summary, nurse educators hold strong implicit negative bias toward individuals with disabilities and these biases prevent persons with disabilities from being equally represented in the nursing profession. Previously the literature documented only positive, explicit attitudes held by nurse educators, and these positive explicit attitudes contradicted what the literature documented about the discriminatory practices and treatment of student nurses and individuals

with disabilities. This study thus fills a gap in the literature by documenting strong implicit bias against disabled individuals.

A trend in regard to frequent exposure to individuals with disabilities was identified from the demographic data. Increasing exposure to disability leads to lower D scores, and thus, less bias toward the disabled. Unfortunately, however, the only significant finding from the demographic data was that more than monthly exposure to disability produced a significantly lower D score. A larger sample size would likely verify this trend.

The open-ended questions identified four major areas about which nurse educators carry concern. Faculty members reported the ability to complete physical tasks to be a highly important criterion for admission into nursing programs. As not all nurses work in a hospital and provide direct patient and not all direct patient care nursing work involves physical tasks, this emphasis seems unnecessary. Perhaps nurse educators should evaluate applicants based on the school's criteria for admission and deal with issues of accommodation for disabilities at a later time as issues arise and with a focus on the values described by the ANA.

Critical thinking was another area of concern related to admission criteria and reported by participants. Critical thinking, if evaluated at the time of admission to nursing programs, could be beneficial to the admissions committee in selecting highly qualified candidates. What remains unknown is whether critical thinking is evaluated at the time of admission to nursing programs. This information was not reported by participants.

A number of responses to open-ended questions were related to faculty members'

concerns about students with disabilities and assumptions about the students' ability to provide safe patient care. Certainly, all educators should be concerned that the students they work with provide safe patient care. However, to focus on and make assumptions about only students with disabilities is discriminatory. The job of the educator is to help the student determine the best way to provide safe care, regardless of the presence of a disability.

Many educators commented about the accuracy of the DA-IAT test results. A few educators accepted the test results and acknowledged the existence of bias. A number of educators were surprised by their results but also seemed to accept the results as accurate. Many educators doubted the validity of the test or doubted that the test results were accurate. The response described here may be an attempt to put the blame for the test results somewhere other than on the participant. Acknowledgement of the validity of the test results may necessitate uncomfortable or painful introspection by the participants and identification of an area to change. Therefore, it is easier to blame the test than face this discomfort. A few respondents denied that the test could be accurate because they reported having a family member with a disability and advocating for disabled individuals. Again, these individuals may have the need to blame something other than themselves for the test result that showed they hold bias.

This study presents nurse educators with a startling fact: when nurse educators were added to the more than 38,000 individuals who have participated in the DA-IAT, their mean D score was found to be consistent with strong preference for able-bodied individuals. Thus nurse educators' preference for able bodied individuals exceeds that of the general population. This fact, along with the variety of assumptions uncovered by the open-ended questions, appears to



make an open and honest discussion of inclusivity essential in the nursing community.

## **Implications**

The present study reveals that nurse educators hold significant bias toward individuals with disabilities. This may be an eye-opening or even disturbing statement to educators who may state positive explicit attitudes toward individuals with disabilities. The implications of this research can be best understood from the point of view of inclusivity. These implications are threefold. First are issues of legal compliance, second is the concept of justice, and third is inclusion. Additionally, recommendations to facilitate the admission of individuals with disabilities into nursing education programs and improve the treatment of students with disabilities once admitted will be discussed.

**Legal Compliance.** Nurse educators must be careful to follow the ADA and prevent discrimination when dealing with individual with disabilities. Such discrimination could take place through the denial of admission of individuals with disabilities to nursing programs or through a failure to provide accommodations considered 'reasonable' by the school's office for students with disabilities. Such discrimination could result in costly legal action against schools. An awareness of implicit bias held toward individuals with disabilities will assist nurse educators to be more open to the needs of all students, including the needs of students with disabilities. The degree of bias revealed in the present study shines light on a critical need for nursing faculty to carefully focus on admission and retention practices to avoid potential legal problems.

Compliance with the ADA is only one small piece of the issue. A nursing program could

be in compliance with the law and still discriminate against students with disabilities. For example, a school could admit a student with a disability and then fail a student for the inability to independently complete cardiopulmonary resuscitation as required in a clinical course. The school is acting within the guidelines established by the ADA, yet the student is not succeeding in the program and may never reach the goal of becoming a nurse. More is at stake than simply legal compliance issues.

**Justice.** The results of the examination of implicit attitudes present new challenges for nurse educators who hold fairness and inclusivity as core values. The ANA has taken a strong stand on discrimination in nursing through the position statement on discrimination and racism (ANA, 1998):

Discrimination and racism continue to be a part of the fabric and tradition of American society and have adversely affected minority populations, the health care system in general, and the profession of nursing. Discrimination may be based on differences due to age, ability, gender, race, ethnicity, religion, sexual orientation, or any other characteristic by which people differ. The American Nurses Association (ANA) is committed to working toward the eradication of discrimination and racism in the profession of nursing, in the education of nurses, in the practice of nursing, as well as in the organizations in which nurses work. The ANA is further committed to working toward egalitarianism and the promotion of justice in access and delivery of health care to all people (para 13).

This statement is a very clear mandate to avoid discrimination against any individual on the basis

of disability. A majority of nurse educators may explicitly support the values expressed by the ANA and yet implicitly work against it. The bias exposed by the DA-IAT affects the behavior of nurse educators. The explicitly held ideal of an inclusive environment in nursing education may well be undermined by implicitly held attitudes.

The prevention of discrimination is essential but is only one piece of the overall issue. A nursing program that has been successful at the elimination of discrimination by faculty might still have students who experience being treated as “different” or not welcomed by fellow students or staff nurses in the clinical setting. Implicit bias may be at work in these situations. Open naming and discussion of bias may well present a way forward beyond mere compliance with the law, beyond questions of fairness, toward more profound and meaningful goals of inclusion.

**Inclusion.** Bias stems from and results in the isolation of a population. Goffman’s exploration of isolation and his concept of stigma will provide an effective lens through which to consider the implications of the bias discovered in the present study:

When the stranger is present before us, evidence can arise of his possessing an attribute that makes him different from others in the category of persons available for him to be, and of a less desirable kind—in the extreme, a person who is quite thoroughly bad, or dangerous, or weak. He is thus reduced in our minds from a whole and usual person to a tainted, discounted one. Such an attribute is a stigma, especially when its discrediting effect is very extensive; sometimes it is also called a failing, a shortcoming, a handicap. It

constitutes a special discrepancy between virtual and actual social identity. (Goffman, 1963, p. 2-3)

Stigma, then, is the result of making assumptions and suppositions about another individual who is different but also reducing the person to those differences. Because nurse educators hold bias toward individuals with disabilities, this group is stigmatized, set aside and treated differently. This bias is not based on a carefully considered reality, but rather upon implicit or unconscious beliefs. Nurse educators, along with the general population, inherit the same broad cultural values and attitudes from others. Nurse educators, while explicitly holding inclusive views and values, may implicitly expect all applicants to look 'normal' in order to be qualified to apply to a nursing program. Because individuals with visible disabilities look different than 'normal' individuals, stigmatization can happen. Perhaps this 'normal' mold is formed by nurse educators' idea that the ability to complete physical tasks is important in various areas of nursing practice.

Some areas within the profession of nursing involve the ability to complete physical tasks. However, some nurses do telephone triage, teach, and work in administrative settings in hospitals and clinics, and these are but a few examples of nursing work in which the ability to start intravenous lines or place indwelling catheters would not be relevant. Clearly not all nurses work in hospitals providing care at the bedside and even hospital jobs involve more than merely physical skills. Therefore, to expect all students to be proficient at all hands-on skills seems contradictory and potentially discriminatory to individuals with disabilities. Nursing education needs to reevaluate the need for all graduate nurses to be generalists. In an inclusive environment, nurse educators will work with students to find creative ways of providing quality

patient care. For example, a student who only uses one arm to complete physical tasks may accomplish the placement of an indwelling catheter by means of a unique sequence of steps. Such a change from required generalist training to a more flexible way of preparing students could reduce discrimination experienced by student nurses.

Allan's careful exploration of inclusion has resulted in a critique of exclusive, narrow, and unproductive views of disability. Inclusion, according to Allan (2006) is based upon:

The premise that an individual has a right to belong to society and its institutions, which therefore implies that others have obligations to ensure that this happens. In particular, inclusion necessitates the removal of barriers that may prevent individuals from belonging. These barriers may deny individuals access to buildings or materials or cultural resources, or may convey messages to individuals that they do not really belong. Removing these barriers implies major structural or attitudinal changes and a fundamental shift away from the deficit-oriented thinking that has for so long driven educational practices.

When the bias revealed in the present study is considered in the light of Allan's description of inclusion, it becomes clear that nurse educators may well appear to embrace inclusivity while at the same time implicitly embracing an exclusive, limiting, and unproductive deficit-oriented model of disability. While others, including Wolfensberger (1972), have strongly critiqued this model, an understanding of implicit attitudes may provide the basis for a more constructive critique and discussion and positive change. All individuals, and all nurse educators, are subject

to the effects of implicitly held attitudes. Even students with disabilities may come to internalize the view that they cannot be nurses and that they do not belong. The acknowledgement of this fact may help to diminish the defensiveness which is possible in any discussion of inclusion or exclusion. A common ground based on the universal vulnerability to implicitly held attitudes may help to make the discussion of inclusion less adversarial.

Nursing students and nurses with disabilities add to the diversity which we constantly seek in the nursing profession. While the medical profession has been charged with increasing diversity in its educational programs, including individuals with disabilities (Delisa & Thomas, 2005), no such mandate has arisen in nursing from any professional organization. This is unfortunate, because greater diversity results in more complete mirroring of client populations served. Additionally, a push for more diversity in nursing education, including individuals with disabilities, forces nurse educators to re-think their values. The implicitly held bias revealed in this study points our attention to opportunities denied and gifts and skills unused as a result of discrimination. This gap becomes clearer when we consider the case of nursing students for whom English is not the first language. The admission of these students to nursing education programs may well create more intensive work and be more time consuming for faculty members, just as some study participants anticipated in the case of applicants with disabilities. The present study offers a window to a richer nursing profession. How much poorer would the nursing profession be without students for whom English is not their first language? How much poorer *is* the nursing profession as people with disabilities continue to be underrepresented? Thoughtful discussion of implicitly held attitudes and of inclusion will result in better nursing.

Nurse educators must become aware of the bias held toward individuals with disabilities before any change can take place. One possible way to increase inclusion would be a workshop format that would include the administration of the DA-IAT to the entire group of nurse educators. The results, available instantly, could be shared and discussed. Participants could be asked to bring admissions materials from their programs and small groups could discuss admission policies and practices of their institutions in detail. Additionally, a discussion of retention policies and student experiences would be paramount as retention issues may be a greater problem for students with disabilities than admission.

By definition, all individuals are unaware of implicitly held attitudes. It is possible that this common ground of unawareness might lead to a safe environment for open and honest discussion. Participants may well leave such a workshop with a deeper understanding of the practice of inclusion and with a determination to carry the discussion forward to their colleagues. The greater inclusion that might result can only benefit the nursing profession as individuals with visible disabilities, along with all other nursing students and nurses, would be considered in terms of their unique gifts and skills.

### **Study Limitations**

The potential for maturation threat exists with this study. If participants became weary or bored while categorizing symbols and terms there would be potential for participants to take more time or make more errors. The potential to take more time could influence the test scores or change the IAT score. However, this threat was minimized as the test order changed. Some

participants first categorized congruent concepts (disabled+bad and able-bodied+ good). Other participants first categorized incongruent concepts (disabled+good and able-bodied+bad). The random assignment of the order of congruent and incongruent concepts helped to balance the potential affect that maturation threat had on IAT scores.

The participants themselves were another limitation. All invitees had the potential to participate in the study yet only a proportion did participate. Perhaps there are unique qualities of some individuals who choose to participate in web-based research studies that may have had some influence on the IAT scores. Perhaps individuals who are unlikely to participate in web-based research hold much less or much more bias than those who chose to participate. Those questions, however, will not be answered through this study, as the only data obtained is from those individuals who chose to participate.

Technical difficulties proved to be the third limitation. This researcher received emails from a number of participants who were unable to scroll to the bottom of the demographic page to complete the final 3 tools of the study. The Project Implicit contact person was notified of the issues and it was resolved. Ultimately, the Project Implicit contact person forwarded an alternate internet link to be used to access the study. This link proved to be problem free. However, whether or not these individuals returned to complete the unfinished study tools is unknown; consequently these study participants may have been lost.

The sample size proved to be a limitation in this study with Aim 2. A significantly larger sample size might have lead to the identification of more statistically significant findings with



the demographic data. A sample of only 4-10 participants in one subcategory is a very small number and not large enough to be able to detect differences between groups.

Participants' unfamiliarity with the methodology of the DA-IAT is an additional limitation to the study. Participants may have left completion of the study with unanswered questions about the IAT, what it measures, how results are calculated, and the power of the amount of research behind the test itself. Rather than commenting about the results or their implications, some participants commented about the DA-IAT. The focus of the open-ended questions was not how the DA-IAT works or is scored, but rather a consideration of disabled individuals as student nurses and issues related to nursing education.

### **Future Research**

Further research needs to address the following four areas: disabled students in the clinical setting, physical ability as mandatory admission criteria, disabled students' experiences in nursing education, and evaluation of critical thinking in the admissions process. The first of these areas is the concerns of faculty regarding the inclusion and presence of students with disabilities in the clinical setting. Nursing faculty may consider clinical rotations to be of greater concern than classroom courses. An exploration of the specific concerns of faculty about disabled students will provide an avenue for discussion and may lead to effective interventions to alleviate these concerns.

The physical abilities of individuals with disabilities and how these abilities might affect a student's ability in the clinical setting was reported to be of great concern to nursing faculty.

One area of future research that would be of great help to nursing faculty members is to document how nurse educators have previously assisted individual students with visible disabilities in the clinical setting. A gathering of such information might be of significant help to other nurse educators when faced with similar situations.

The view points of students with disabilities who currently are in nursing education programs or who have recently graduated is another highly needed area of research. This study focuses on nursing education from the nurse educator point of view. Students should be surveyed or interviewed about their experiences in nursing education from admission to classroom and clinical experiences to challenges and barriers they faced through the process. If nursing education is to become a more inclusive environment, the students with disabilities need a voice in the process.

The process of reviewing applications for admission into nursing education programs, with its focus on physical ability, is in dire need of remodeling. Because not all nurses work at the bedside providing direct patient care, the focus on physical ability in the admissions process is discriminatory. Therefore, lists of Essential Functions or core job functions as prerequisites for admission to nursing education programs should be eliminated. In its place should be a method for evaluating the critical thinking abilities of applicants. The ability to evaluate critical thinking and subsequently offer admission to individuals who are good critical thinkers will create a collective group of student nurses who more closely meet the ANA definition of nursing.

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## Appendix A

### Email Recruitment Letter

Dear Nursing Colleague,

My name is Vicki Aaberg and I am a doctoral student from Washington State University College of Nursing. I am conducting research for my dissertation. You have been selected to participate in this study because you teach in a baccalaureate program in the United States. Your contact information was accessed through your school's website.

You are being invited to participate in my study. To be included in the study you must be a nursing faculty member, teach primarily in a baccalaureate program, read and write in English, and provide implied consent. If you meet these criteria, please continue. Otherwise, thank you for your time and consideration.

Washington State University Institutional Review Board has deemed this study to be exempt from human subjects review. All of the answers to your questions will be confidential. Your name will never appear on any reports generated from this study.

The IAT is the first tool of the study and is not a typical survey. Using the Implicit Association Test (a web-based tool), words and pictures are used to study reactions toward various groups of people. Although millions of people have completed the Implicit Association Test online, this tool has been used very little in nursing research. I think you will find the process interesting and enlightening.

The study contains three elements, the Implicit Association Test, an 11-item demographic survey, and a 5-item open-ended survey and should take a total of 10-15 minutes to complete. In order to be enrolled in the study you must complete all 3 instruments. By clicking the link below, you will find statements that inform you of your rights as a participant as well as technical specifications necessary to complete the tests. Once you review this information, you may proceed with the study.

<https://implicit.harvard.edu/implicit/user/vaaberg>

Thank you for your participation. I recognize and appreciate the value of your time.

I hope you have fun!

If you have any questions about the study or have any problems accessing or completing it, please feel free to contact me at [aaberv@spu.edu](mailto:aaberv@spu.edu) or (206) 281-2609

Vicki Aaberg, PhD(c), RNC

Doctoral Candidate, Washington State University College of Nursing

## Appendix B

### Informed Consent for Participation in Research Washington State University

Project Title: Implicit Attitudes of Nurse Educators Toward Individuals with Disabilities

Lead Investigator: Vicki Aaberg, MSN, RNC, PhD(c)

Phone Number: (206)281-2609

Email: vaaberg@wsu.edu

Research Advisor: Anne Hirsch

Phone Number: (509) 324-7335

Email: hirsch@wsu.edu

Dear Professor,

My name is Vicki Aaberg and I am a doctoral candidate at Washington State University College of Nursing. You are being invited to participate in a dissertation study assessing conscious and unconscious preferences for certain types of people. Participation will require only 10-15 minutes. This study is built on, and hopefully will support, continuing inquiry into the challenges faced by nursing students with visible disabilities. You have been selected to participate in this study because you teach in a baccalaureate nursing program in the United States.

#### Description of the Study:

This study uses an on-line program that requires the ability to view the computer screen and discriminate between different pictures and words. A demographic survey and open-ended survey are also included. For best results, please close other distracting programs on your machine, minimize noise distractions in the area, and make sure you have 15 minutes to spare. The study will open in a pop-up window. Further instructions will be provided when the first screen is visible. Feedback on your responses will be provided at the end of the study.

#### Privacy:

Study data will be managed and protected by Project Implicit. Project Implicit uses the same secure hypertext transfer protocol (HTTPS), used by banks and other commercial websites to transfer credit card information in an encrypted format. This provides strong security for data transfer to and from the website. Research data is associated with an anonymous user number and stored separately from email addresses and demographic information. Email addresses are never connected directly to any of the research data ensuring the privacy of individual data. Your participation in this project is completely voluntary. You may choose not to respond to any question. Even if you begin the survey, you can discontinue at any time. Your decision to

participate (or refusal to participate) will have no impact on your status at your college or university. You may stop at any time by closing the study window. Participating in this study involves minimal risk (no more than one might experience in daily life). The cost of this study is limited to the time involved in completing the study. The Washington State University IRB has determined this study to be exempt from human subjects review.

Having read the above and having had an opportunity to ask questions by virtue of the contact information provided, please click the link below indicating that you have read the informed consent and agree to participate in this research. You may make a copy of this form for future reference.

Sincerely,

Vicki Aaberg, RNC, MSN, PhD(c)

Washington State University

## Appendix C

### Demographic Survey

Visible disability definition: Any disability that is obvious to the onlooker. For example, an individual who uses a wheelchair for mobility, is missing a limb, uses a sign language to communicate, or uses a service dog.

Please select the correct response

1. Do you have a visible disability? Yes\_\_\_No\_\_\_
2. Do you have more than once a month experience with individuals with visible disabilities? Yes\_\_\_No\_\_\_
3. Do you have experience with a family member(s) with a visible disability?  
Yes\_\_\_No\_\_\_
4. If yes, please select the frequency of contact with the individual with the disability:
  - a. Daily
  - b. Weekly
  - c. Monthly
  - d. Less than monthly
5. Do you have experience with nurses with visible disabilities? Yes\_\_\_No\_\_\_
6. If yes, please select the frequency of contact with the individual with the disability:
  - a. Daily
  - b. Weekly
  - c. Monthly
  - d. Less than monthly
7. Do you have experience with student nurses with visible disabilities? Yes\_\_\_No\_\_\_
8. If yes, please select the frequency of contact with the individual with the disability:
  - a. Daily
  - b. Weekly



- c. Monthly
- d. Less than monthly

9. Do you have experience with patients/clients with visible disabilities? Yes\_\_\_No\_\_\_

10. If yes, please select the frequency of contact with the individual with the disability:

- a. Daily
- b. Weekly
- c. Monthly
- d. Less than monthly

11. Please select your primary clinical specialty in nursing from the following options:

- a. Medical/Surgical/Critical Care/Oncology
- b. Psychiatric/ Community Health
- c. Maternal/child
- d. Rehabilitation/Neuro

## Appendix D

### Open-Ended Survey

These questions ask you about the online Disability Attitude Implicit Association Test. Please consider each question carefully. Thank you.

1. What are your thoughts about the results you obtained by taking the Disability Attitudes Implicit Association Test?
2. What did you learn about yourself in taking the test and reviewing the results?
3. Does your program have any formal or published criteria for guiding how faculty are to consider the admission of students with visible disabilities? Yes\_\_\_No\_\_\_ If yes, please describe these criteria
4. Some faculty use their own unwritten values and beliefs to influence their evaluation of an applicant's qualifications for nursing school. What unwritten factors are you aware of that may have influenced the decision to admit or not admit an applicant with a visible disability to your program?
5. Is there anything else that you think is important for me to know to better understand the factors that influence your program's decision to admit or not admit a visibly disabled applicant?