UMass Chan Medical School
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Nurses with Physical Disabilities Experiences During Pre-licensure Education

A Dissertation Presented

By

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ABSTRACT

PURPOSE: To describe the pre-licensure nursing educational experience of integration and inclusion among RNs with a physical disability during their education.

SPECIFIC AIMS: 1) Describe the access RNs with a physical disability had to academic and social opportunities during their prelicensure education program that contributed to academic and social integration (inclusion). 2). Explore perceptions of RNs with a physical disability regarding inclusion and acceptance of their disability as a valued component of student diversity during their prelicensure education program. 3). Describe the contextual factors and key aspects of connection during the pre-licensure educational experiences of RNs who had a physical disability as positive (Disability-Diversity Connect) or negative and disintegrated (Disability-Diversity Disconnect).

FRAMEWORK: This study was guided by The Disability-Diversity Disconnect (DDDM) by Aquino (2016).

DESIGN: This study design used was qualitative description. It included semi-structured interviews using an interview guide based on the DDDM.

RESULTS: 16 individuals with 14 different physical disabilities participated in this study. During data analysis four themes emerged: I Saved My Energy for Learning, Determination, Wanting to Find My People and Secrets, Living a Double Life which has a subtheme, Fear of Judgement.

CONCLUSION: : Identification of factors related to inclusion within the academic environment provides insight for future work to examine the needs of prelicensure nursing students with physical disabilities and the potential to improve their future educational experiences.

KEY WORDS: Nursing education, physical disability, chronic health conditions, diversity
APPROVED DISSERTATION PROPOSAL

Introduction to the Problem and Specific Aims

Individuals with physical disabilities are at an elevated risk for visible disability stigma, experiencing overt discrimination, belittlement and even pity (Akin & Huang, 2019). While the number of nursing students with physical disabilities is unreported, 19% of college students identify as having a disability (De Brey et al., 2021) and 9.3% of college students with disabilities have disabilities that are classified as physical (U.S. Department of Education, 2017). Students with disabilities, including those in nursing programs, have had negative experiences during their postsecondary educational journey beginning with college admissions practices (Neal-Boylan & Miller, 2020; Neal-Boylan & Smith, 2016). The specific physical limitation of some nursing school applicants and archaic policies have kept some individuals with physical disabilities out of nursing programs (Ferguson, 2009). Beyond policies, educators themselves contribute to the challenges students with a physical disability may encounter. In a study of 132 nursing educators, 65.1% have high implicit bias favoring individuals without disabilities (Aaberg, 2012).

Gonzalez and Hsiao (2020) call for the need to increase diversity in nursing education. Frequently, diversity in education refers to race and ethnicity, gender, sexual orientation, religion, and socioeconomic status (U.S. Department of Education, Office of Planning, Evaluation and Policy Development and Office of the Under Secretary, Advancing Diversity and Inclusion in Higher Education, Washington, D.C., 2016). The benefits seen in diverse academic settings include a better understanding of the perspectives and needs of others as well as both long-term and short-term academic improvement as seen in course grade average and cumulative GPA at graduation (Lau, 2016). An increased ability to critically think, reduced bias and
preparation to succeed in a diverse and interconnected world are all associated with diverse learning environments (United States. Department of Education. Office of Planning, Evaluation, and Policy Development, 2016). Increasing the acceptance of applicants with a physical disability into nursing educational programs is one strategy to further enhance the diversity of the nursing workforce and is consistent with the American Association of Colleges of Nursing and the National League for Nursing statements about supporting inclusivity of students with disabilities into educational programs (American Association of Colleges of Nursing, 2017; National League for Nursing, 2016).

The challenges reported by individuals with physical disabilities in higher education in general (Gelbar et al., 2015) raises questions about nursing programs and their awareness and preparedness to meet student’s needs. One of the largest barriers to acceptance into a nursing program for nursing applicants with physical disabilities are academic institutions’ outdated technical standards (Neal-Boylan & Smith, 2016). Technical standards within nursing education refer to a list of skills that are required to enter a program. The National Council State Boards of Nursing no longer publishes guidelines related to required functional abilities essential for nursing practice and yet, similar language is used by many nursing academic institutions to evaluate potential applicants (Ailey & Marks, 2017). This restrictive criterion does not consider the intellectual ability of the individual or the ability for environmental modifications that will allow the individual to perform skills deemed essential to the profession (Neal-Boylan & Smith, 2016).

Research about students with disabilities in higher education often combines students with physical disabilities with other disabilities related to learning and mental health which limits the ability to understand the experience of students with only a physical disability (Gelbar et al.,
Using narrative inquiry Abes and Wallace (2018) explored the college experience of thirteen students with physical disabilities such as cerebral palsy, deafness, spina bifida, arthritis and lupus. Students struggled with finding environments on campus where they could interact with individuals who shared commonalities and they felt both invisible and hypervisible at the same time (Abes & Wallace, 2018). Students felt that they were seen only as their disability and either ignored or made a “poster child” for their uniqueness often appearing in marketing materials for their institutions (Abes & Wallace, 2018). Although dated, studies conducted that included students with physical disabilities highlight student challenges with building accessibility (Nandjui et al., 2008; O’Connor & Robinson, 1999) and disability services staff not having adequate knowledge (O’Connor & Robinson, 1999).

Data describing the challenges nursing students with physical disabilities have during their pre-licensure education is lacking in the literature. Specifically, it is not known how students perceived their level of academic and social integration (inclusion) and whether they felt connected to their educational institution. Exploration of the experiences students with a physical disability have during their pre-licensure nursing education will provide information that will inform strategies for successful integration into nursing programs in the future. Thus, the purpose of this qualitative descriptive study, undergirded by the Disability-Diversity (Dis) Connect Model (DDDM) (Aquino, 2016), is to describe the pre-licensure nursing education experience of inclusion and connection among RN’s who have a physical disability and how it impacted their lives during their nursing education. The following specific aims will be addressed:

**Specific Aim 1:** Describe the access RNs with a physical disability had to academic and social opportunities during their prelicensure education program that contributed to academic and social integration (inclusion).
Specific Aim 2: Explore perceptions of RNs with a physical disability regarding inclusion and acceptance of their disability as a valued component of student diversity during their prelicensure education program.

Specific Aim 3: Describe the contextual factors and key aspects of connection during the prelicensure educational experiences of RNs who had a physical disability as positive (Disability-Diversity Connect) or negative and disintegrated (Disability-Diversity Disconnect).

The overarching goal of this study is to gain insight into the educational experience of RNs living with a physical disability during their prelicensure nursing education. Specifically, eliciting personal descriptions from registered nurses with a physical disability about their prelicensure nursing education experience through semi-structured interviews will provide important data that could inform strategies nursing programs might consider to ease the burden of students with physical disabilities. These strategies may foster a culture of inclusivity and connection for students with physical disabilities and ultimately improve access to nursing education for these students.

Theoretical Framework

This study will be grounded by the Disability Diversity (Dis) Connect Model (DDDM) (Aquino, 2016) whereby disability is conceptualized as a form of student diversity rather than as impairment and a medical limitation (see Figure 1). The DDDM framework is rooted in the advocacy of equal acceptance and inclusion in a diverse college setting where disability is seen as a component of diversity (Aquino, 2016). The DDDM views disability as a unique characteristic of the individual and not as an impairment to be looked down upon (Aquino, 2016). Disability is viewed as an oppressed minority group created through identity oppression within an academic environment (Aquino, 2016).
The DDDM suggests that student perception of academic and social inclusion is connected to their participation and integration into the postsecondary environment. Despite the differences between academic and social integration and what each entail, Pan, Guo, Alikonis, and Bai (2008) and Ullah and Wilson (2007) found that academic and social integration have a positive relationship that may help with achieving postsecondary educational goals. The student’s willingness and ability to assimilate into the post-secondary educational environment is key for their success.

The DDDM describes two modes of disability-diversity; Disability-Diversity Connect and Disability-Diversity Disconnect. Disability-Diversity Connect occurs when students with disabilities view their disability as a component of their identity and believe that it contributes to the diverse environment of post-secondary education (Aquino, 2016). Positive experiences may help students feel that their disability is unified with student diversity contributing to self-development and a desire to participate in creating a post-secondary diversity milieu (Aquino, 2016). Recognizing their disability as diverse/unique characteristic, rather than an impairment, and being accepted within the greater student body can lead to positive experiences and feeling integrated/connected to the school milieu. In contrast, Disability-Diversity Disconnect occurs when a student does not engage with the educational environment. This can be the result of a realization that their experience is different compared to other students because of their disability. This may lead to negative experiences which prevent them from integrating into the educational environment (Aquino, 2016).

Interviewing subjects using the DDDM to guide interview questions will enable learning about their experiences and identify factors that contributed to a positive prelicensure educational experience as well as situations where “disconnections” occurred. These data are necessary for
the future development of interventions and potential policy changes to facilitate the prelicensure educational experience of students with physical disabilities such that they experience a sense of academic and social inclusion and connection to their educational milieu, graduate, and join the nursing profession.

Figure 1. The Disability Diversity (Dis) Connect Model. (Aquino, 2016) reproduced with permission from the Journal of Postsecondary Education and Disability September 9, 2022.

Definitions

**Physical disability**: any condition of the body which increases the difficulty of an individual with the condition to interact with the environment and perform activities (Centers for Disease Control and Prevention, 2022). In this study, participants will self-identify that they had a physical disability while enrolled in their prelicensure nursing program.
**Prelicensure nursing program**: any educational program that prepares a student for RN licensure. This includes diploma, AD, BSN, and MS entry into practice accelerated programs.

**Background**

Much of the literature that currently exists about the nursing prelicensure educational experiences of individuals with physical disabilities was published prior to 2016 before the Americans with Disabilities Act Amendments Act (ADAAA) was officially incorporated into the Americans with Disabilities Act (ADA). The review below includes literature related to students with physical disabilities in higher education in general and is not limited specifically to nursing students.

**Disability as a component of diversity**

Embracing differences among students adds to the overall postsecondary educational experience. When disability is seen as a component of diversity and not a medical limitation or impairment, it contributes to the multiculturalism of the academic environment (Aquino, 2016.) In a mix-method study of 300 randomly selected four-year college and university websites 23% (n=68) included disability within their mission or diversity statements (Scheef et al, 2020). This same study found through analysis that as the number of students with disabilities increased, so did the institutions likelihood of including it as a component of their mission and or diversity statement. While this practice remains rare, it is an important one as including disability as a part of a diverse campus not only helps individuals with a disability feel more included, but it also helps able bodied students to make this connection as well (Scheef et al, 2020).

**College students with physical disabilities**

Individuals with physical disabilities are at a higher risk for visible disability stigma, experiencing overt discrimination, belittlement and even pity (Akin & Huang, 2019). The
number of nursing students with physical disabilities is unknown. Among college students in general, 19% report having a disability and 9.3% self-identify as having a physical disability (De Brey et al., 2021; United States Department of Education, 2017). Results of a 2016 survey among college students who report having a disability, about 1/3 (37%) informed their college of their disability (U.S. Department of Education, 2022). Fear of persecution and exclusion has kept many individuals from reporting this information, meaning the actual number of college students with a physical disability may be much higher (Gelbar et al., 2015; Neal-Boylan & Smith, 2016). Twenty-five percent of first-time students with disabilities drop out of higher education within the first year and thirty-five percent drop out at the end of 2 years (U.S. Department of Education, 2017). Reasons for low completion rates are multi-factorial.

Historically, all students with higher levels of engagement with their educational institution report having a greater benefit from their college experiences (Kuh, 2007). Through longitudinal data analysis of 1081 first year and senior student surveys, of individuals that self-identified as having a physical, sensory, or learning disability, it was discovered that student interaction with faculty is a measure of student engagement and influences student experience (Kim & Kutscher, 2021)

**Resources and services in higher education**

The Americans with Disabilities Act of 1990 (ADA) contains legal mandates that ensures that universities and colleges provide reasonable accommodations to students that have disabilities (Americans with Disabilities Act, 1990). The Americans with Disabilities Act Amendments Act of 2008 (ADAAA) broadened the definition of disability and requires schools to provide a student with those accommodations that help them learn most effectively (U.S. Equal Employment Opportunity Commission, 2008). The ADAAA was officially incorporated
into the ADA in 2016 with modifications appearing in Title II and Title III regulations (United States Department of Justice; Civil Rights Division, 2022).

Some schools assist students with disabilities by establishing disability centers and or employing disability counsellors. Disability counsellors serve as a connection between students, faculty and administrators and other disciplines that can assist the student in a collaborative process as they assimilate into college life (Neal-Boylan & Smith, 2016). Institutional commitment to providing services for students was found to be the best predictor of student retention in academic settings in a study of questionnaire responses from 2022 college students (Davidson et al, 2009). Institutional commitment includes supports such as a disability resource office, which are responsible for coordinating or providing disability services and accommodations to students with disabilities (National Center for College Students with Disabilities, 2022; Fleming et al., 2017).

**Strategies to enhance access, inclusivity and feeling of connection**

Some colleges and universities are trying to create a culture of inclusion for students with physical disabilities beyond the services provided by disability support services and counseling offices, working to enhance the student experience and increase the likelihood of graduation (Scheef et al., 2020). Secondary analysis of data from students with a disability at a large urban university (N = 2, 578) found that when services are targeted to specifically support the needs of students with disabilities, students are more likely to be successful and persist through school, especially if these services are utilized within the first semester of enrollment (Safer et al, 2020).

In a mixed methods study of 27 college students with a physical disability, students who have strong social connections with other students with disabilities report a more favorable campus climate (Minotti et al., 2021). Students with physical disabilities that live together in
individually adapted housing report feeling better supported and show improved mental health outcomes in comparison with those individuals with physical disabilities that are not living around others with physical disabilities (Minotti et al., 2021). The influence of communities in academic settings for minority groups significantly increase the likelihood of academic success due to both information-related social capital and social support (Nelson, 2019).

The physical environment as well as the resources within the environment contribute to student success in academia (Collins & Mowbray, 2005) Students with physical disabilities express the importance of accessibility to campus buildings including classrooms, common spaces, and residence halls to enhance their social integration into the campus community (Malik & Anton, 2013; Minotti et al., 2021). This includes modifications such as first floor dormitory rooms for those with mobility issues, adaptive equipment such as lifts, ramps, and push button blinds (Malik & Anton, 2013). Both physical environment and resources that promote student sense of inclusion encourage student growth and inclusivity amongst the educational community (Chiu et al., 2019).

Student sense of inclusion is a multifaceted concept. The feeling that one belongs is especially significant to those individuals in marginalized populations (Strayhorn, 2012) like those who have physical disabilities. In a grounded theory study by Vaccaro et al. (2015) of eight college students with self-identified disabilities, three themes emerged as critical to the student’s sense of inclusion. These themes include the ability to master the student role, the ability to self-advocate and the development of supportive relationships (Vaccaro et al., 2015). Having the supports in place to help students with disabilities meet these goals is essential to their success. One intervention or the presence of one support is not enough to increase marginalized students’ sense of belonging enough to positively impact their academic performance (Mishra, 2020).
The theme of supportive relationships was echoed by Francis et al. (2019) who reported faculty support as beneficial. In this qualitative study of eight students with self-identified disabilities, two specifically noted the importance of authentic faculty support to their success and all expressed that faculty that “went above and beyond,” by offering caring support outside of simply following the accommodations increasing their feeling of empowerment (Francis et al., 2019). One participant reported how supported they felt when a faculty member told them that they knew that they were “capable” of being successful in achieving their academic goals while another shared how special their lunch time conversations with a faculty member were (Francis et al., 2019). A qualitative descriptive study of 10 faculty at 3 different universities also found that direct faculty contact through mentoring, advising and tutoring were all identified as factors that increased the academic success of minority students in nursing educational programs (Gates, 2018).

**Challenges for nursing students**

Historically, and in many nursing programs today, meeting select technical standards has been used to determine acceptance into pre-licensure nursing programs (Elting et al., 2021). This has created a challenge for individuals with physical disabilities who may be otherwise academically qualified. Technical standards in nursing education can be traced back to 1996 when Yocom (1996) conducted a validation study confirming sixteen categories of functional abilities essential for nursing practice. Included in these categories are gross and fine motor skills, physical endurance, physical strength, mobility, hearing, and visual ability. Yocom clarified at the 2003 *Students with Disabilities: Nursing Education and Practice Symposium*, that these are categories that nurses “may” possess and not skills they “must” have (Pischeke-Winn et al, 2003). Technical standards were originally instituted to provide guidance on what physical
acts students need to be able to safely preform to enter the academic setting. Although these standards serve the purpose of providing a guide for nursing programs, the specificity of this type of requirement does not fully take into consideration the many aspects of nursing that are not dependent on physical skills or those skills that can be performed with the use of assistive devices. Nor does it stipulate how such tasks must be accomplished. Nursing students with physical disabilities can and do utilize assistive devices to conquer challenges such as mobility issues, inability to lift patients, and communication barriers (Mack et al., 2021).

Students with disabilities accepted into nursing programs face difficulty with the negative attitudes of those meant to serve as supports to them (Aaberg, 2012; Neal-Boylan & Miller, 2017; Neal-Boylan & Smith, 2016). In a study of 132 nurse educators’ on implicitly held attitudes towards people with disabilities, nurse educators were strongly biased toward individuals without disabilities (N = 132, D = 0.76, SD = 0.46) more so than the general population (N = 38,544, D = 0.54, SD = 0.43) (Aaberg, 2012). Those that are admitted and disclose a disability are sometimes asked to provide documentation, sign technical standards forms which acknowledge that they have a disability but that it will not prevent them from preforming all required functional abilities (Neal-Boylan & Smith, 2016). Results of a qualitative study of fifteen nursing students identified that many of these students felt they should hide their disability (Neal-Boylan & Miller, 2017).

Nurse educators’ knowledge and skill in working with students with a physical disability is inadequate as shown in the literature (Etling et al., 2020; May, 2014). In a study of 211 nursing faculty, 90% of whom reported collaborating with individuals with a disability in the past 3 years, 21% received a passing score on the ADA knowledge assessment (May, 2014). Etling et al., (2020) assessed 111 nursing faculty about their perceptions related to the ability of a
physically disabled nursing student to meet the twenty-two outcomes of BSN Essential IX Generalist Practice. Just over half (52.3%) believed that a physically disabled nursing student could meet all cognitive, affective, and psychomotor outcomes (Etling et al., 2020). These two studies raise concern about nurse educators’ knowledge and skill to best support students with physical disabilities during their nursing education. Without knowledge of guidelines established by the ADA and with a bias toward physically abled students nursing faculty are not doing all that they can to create a supportive environment for all students.

Nursing programs including their clinical learning partners do not consistently support the needs of students with physical disabilities. Neal-Boylan and Miller (2017) explored the experiences of nursing students with disabilities (N = 15) and reported challenges encountered that related to difficulty accessing material (not able to hear the manikin in a simulation lab) and lack of accommodations to meet physical needs (toileting need during a 3-hour examination). These students also noted difficulties accessing resources needed for support in a clinical setting (Neal-Boylan et al., 2017). Participants note a need to address admissions barriers, increase faculty and administrators’ knowledge about legal responsibilities, and enable student access to support services like those found in a disability office (Neal-Boylan & Miller, 2017). Results of a scoping review by Horkey (2019) note a lack of described clinical accommodation practices for students with physical disabilities in the nursing literature, especially evidence-based accommodation practices. Students with physical disabilities have identified several challenges in nursing programs that limit their success and warrant further attention.

Physical, environmental, and emotional supports for nursing students with physical disabilities that specifically promote inclusivity and connection are lacking in many nursing programs. Few nurses with a physical disability are entering the workforce. The benefits of
having a diverse (inclusive of disability as a component of diversity) student body and nursing workforce support the need for research to reverse this trend. As an initial step in this line of research, a better understanding of the students’ sense of inclusivity and integration into the academic and social environment of higher education will provide data necessary to continue and improve efforts to meet the needs of nursing students with physical disabilities.

Methods

Design

This study will use a qualitative descriptive (QD) research design to describe the prelicensure educational experiences of nurses with physical disabilities. This design was selected because it allows for an unaltered presentation of the participants’ experiences, giving their stories a voice (Sandelowski, 2000, 2010; Sullivan-Bolyai et al., 2005). With the lack of current information regarding the educational experience of nurses with physical disabilities it is vital that low inference interpretation is used to preserve the integrity of the experiences. This will draw attention to this important topic and hopefully stimulate development of needed interventions and policy change.

Sample

Interviews of registered nurses who had a physical disability when they attended their prelicensure nursing program will be conducted after recruitment using the purposive sampling method (Palinkas et al., 2015). Purposive sampling is a technique used to identify participants that can both provide rich information about the concept and represent the target population (Sullivan-Bolyai & Bova, 2021). Through maximum variation sampling technique participants with a diverse range of experiences will be identified (Guetterman, 2015).
Inclusion criteria for this study include current licensure as a registered nurse, self-identified physical disability that was present during prelicensure nursing education experience, graduation from a prelicensure registered nursing program after 2016, able to communicate in English, and able to provide informed consent. Exclusion criteria for this study include self-reported learning disability or mental health disability.

Setting

To meet the needs of the participants, the interview will be conducted in-person, via the telephone, or via video conferencing. All interviews will be conducted by the primary investigator (PI). For in-person interviews, the setting will be a mutually agreed upon location within 3 hours of Portland, ME that is deemed safe by both interviewer and participant. Telephone and video conferencing interviews will be conducted in private secure locations where the participants are able to talk uninterrupted by others. The locations must be quiet to allow for quality recording of the interview. Time of the day and day of the week will also be arranged to assure that the participants are not exposed to any undue burden (Crist & Tanner, 2003).

Recruitment

The members’ only listserv of the National Organization of Nurses with Disabilities (NOND) will be used for study recruitment. Sample size for QD studies is typically between 10 to 50 participants (Sandelowski,1995). The target sample size for this study will be twenty participants; however, final sample size will be determined during the study once data saturation has been reached (Lincoln & Guba, 1985). Data saturation will be considered as having occurred (Sullivan-Bolyai & Bova, 2021). A standardized email (Appendix D) inviting their participation will be sent to all members of the listserv. The email will include the Fact Sheet (Appendix B)
describing the details of participation in the study, the inclusion and exclusion criteria, and my contact information should anyone have questions or want to schedule an interview. In addition, modified snowball sampling will be used by asking recipients of the initial email to forward the email to any individual that they know who may qualify and be interested in participating in this research. If the use of the listserv and modified snowball sampling does not yield the desired participants, an invitation for potential participants will be made in open groups of nurses with disabilities on social media sites such as Facebook.

Interested participants will contact the PI via email to set up a phone call to ensure eligibility. Once confirmed, the Study Fact Sheet will be reviewed with the participant by the PI and informed consent will be obtained. An interview time and method (telephone, zoom, in person) will be agreed upon at the time of consent. All participants will be offered a $25.00 Bank of America gift card for participation in the study. If interested, all participants completing the interview will be entered into a random drawing for an additional $50.00 Bank of America gift card after data collection ends.

**Data Collection**

Approval from the UMass Chan Medical School Institutional Review Board (IRB) will be obtained prior to data collection. Verbal consent will be obtained from each participant prior to the interview. All data will be collected by the PI. At the start of the interview, the purpose of the study will be reviewed and any questions the participant may have will be answered. Interviews will be conducted using the interview guide (Appendix A) based on Aquino’s Disability Diversity (Dis) Connect Model (2016).

The semi-structured interviews will include open-ended questions directed at gaining insight into the pre-licensure nursing educational experience of the individual. Additional
probing will be used if clarification is needed and to elicit a deeper understanding. Field notes will be written immediately after each interview and will include researcher experiences, observations, and personal reflections and feelings in relation to the study. All interviews regardless of whether they are in person, via Zoom or on the phone, will be digitally recorded on two separate recording devices to allow for verification of accuracy in transcription should one recorder not be clear. Each interview is expected to last approximately 60 minutes. Any participant who becomes distressed during the interview will be advised to contact their PCP/behavioral health as needed for additional support.

After completion of the interview, select demographic data and personal characteristics to describe the participants will be collected by the PI. Demographic data and personal characteristics to be collected include age, gender, race, type of nursing educational program (diploma, associate, baccalaureate, or master’s), state and size of educational program, type of disability, length of disability and current employment status. Demographic data will be collected using a Participant Demographic Form (Appendix C) at time of interview. If this interview is done via phone or zoom, items on the form will be read aloud to each participant immediately following the interview and their responses will be recorded verbatim by the PI.

**Data Management**

Each participant will be assigned a unique identification number which will be used on all digital audio recordings, demographic data, field notes, and the transcriptions to maintain participant confidentiality. (Lincoln & Guba, 1985). All research data will be stored on a password protected UMass Chan Medical School research drive. Only members of the Dissertation Committee will have access to the study data. All recordings will be verified immediately upon completion of interview to confirm that the technology was working and that
the interview was captured. The PI will transcribe the digital recordings omitting any personal identifiers. After listening to the recordings to verify accuracy of the transcriptions the digital recordings will be double erased. All data will be deleted three years after the study is completed.

**Data Analysis**

Qualitative descriptive research includes the use of low inference interpretation to give voice to individuals with complex experiences, to gain insight into generalizations amongst the individuals (Sullivan-Bolyai et al., 2005). Due to the limited research literature on this phenomenon, all transcribed interviews will be analyzed using conventional content analysis as described by Hsieh and Shannon (2005). Each individual interview will be summarized and broken down and rebuilt into a new whole across interviews. Through deep submersion into the data, codes will be derived and reviewed by a member of the dissertation committee and any inconsistency within results will be discussed until consensus is reached. Codes will be organized into categories and then clusters of information. Once clusters are identified, exemplars will be pulled from the data and selected for each category (Hsieh & Shannon, 2005). This approach will allow the data to speak for itself without the imposition of predetermined categories or themes. To facilitate this NVivo software will be used. NVivo will allow for coding and categorizing of participant responses (Wong, 2008). Field notes regarding researcher impressions, experiences and observations of each interview will be incorporated into interview transcripts. Informal notes / ideas will be noted on transcripts in preparation for formal coding. Themes identified by analysis of the transcripts, will be used to disseminate the knowledge gained in the study.

**Methodological Challenges**
Recruitment among this vulnerable population could pose a barrier. Many nurses with physical disabilities are members of organizations that are dedicated to advocacy and the support of group members. Using modified snowball sampling, the intent is to recruit participants who may belong to groups other than the National Organization of Nurses with Disabilities. To encourage participation, it will be stressed that all identifying characteristics will be kept private and secure to protect the participants privacy.

Maximum variation sampling could be a challenge. If the initial recruitment strategy does not yield enough variability, an invitation to participate, using the content on the email invitations, will be made in open groups of nurses with disabilities on social media sites such as Facebook. If this is not achievable, it will be noted as a limitation.

To avoid premature closure of inquiry, and to ensure credibility, the following steps will be completed. Review of transcripts by another member of the research team will be conducted to assess quality of interviewing and provide feedback to make changes as appropriate for future interviews. Member checking will also occur to verify interpretation of participants comments during and at the end of the interview (Sullivan-Bolyai & Bova, 2021).

**Human Subjects Considerations**

Approval for this study will be obtained through the Institutional Review Board at UMass Chan Medical School prior to starting the study. All participants will receive a Fact Sheet about the study and provide informed consent before the start of the interview. Use of an ID number for each participant will enhance confidentially and all personal identifiers noted in the interviews will be deleted. Participants may withdraw from the study at any time without justification. Participants will be provided with the contact information for the National Organization of Nurses with Disabilities, a national organization dedicated to the support of
nurses with disabilities, should they wish to continue discussion about this topic. Any participant who becomes distressed during the interview will be advised to contact their primary care practitioner or behavioral health practitioner as needed for additional support.

**Trustworthiness**

Trustworthiness is a validation technique used to help demonstrate that data analysis has been conducted in a precise, consistent, and exhaustive manner with detail to enable the reader to determine whether the process is credible/truthful. Lincoln and Guba, (1985) considers trustworthiness as having the following characteristics: credibility, transferability, dependability, and confirmability. Each of these components must be addressed in qualitative research to confirm the validity of the data.

Credibility of a research study ensures that the findings gathered reflect the truth of both the phenomena and the study process (Lincoln & Guba, 1985). This process serves as a checks and balances process for the data. The process for this will be peer debriefing. Frequent debriefing sessions between PI and the research team, will be conducted to discuss different approaches, interpretations, and any potential development of researcher bias that may appear to be influencing findings (Shenton, 2004). Member checking will be done with a select group of participants on a 1:1 basis. I will share my findings and see if they agree with the findings. This will occur to verify interpretation of participants comments during and at the end of the interview (Sullivan-Bolyai & Bova, 2021).

Transferability in qualitative research allows for the clear expression that these findings can be assumed within a certain group of individuals within a particular context (Lincoln et al., 1985). Use of a maximum variation purposive sample will enhance the ability to transfer findings to a similar group. To ensure that others have enough contextual information about the
study participants to understand to whom findings can be applied, participant characteristics will be clearly described (Sullivan-Bolyai & Bova, 2021).

Dependability is the extent to which the process used can be replicated (Lincoln & Guba, 1985). Using an audit trail and consistent detailed process for both data collection and analysis procedures will enhance the dependability of this study. Confirmability is integral to presenting the results of this qualitative study in an unadulterated way. Understanding of the content shared during each interview will be confirmed by the PI with each participant to be sure the intent of what was shared was correctly understood (Lincoln and Guba, 1985).

**Strengths and Limitations**

There is risk for not achieving maximum variation sampling. Recruiting individuals that are a member of the NOND may influence the results as it excludes the perspective of nurses that are not members of the organization. Using modified snowball sampling from these group members may extend the reach to participants who are not members and decrease this concern. Another potential limitation is recall bias. The interview guide may help promote recall of more notable events that may have occurred during their educational program. Strengths of this study design include the access to a national sampling frame via the NOND listserv which will allow for geographic variability. Focusing on RN’s that have successfully completed prelicensure nursing programs within the last 5 years will potentially improve the depth of recall that participants have leading to richness of data and will capture the more recent time in which inclusivity has been receiving more attention.

**Conclusion**

The purpose of this qualitative descriptive study is to describe the pre-licensure nursing education experience of inclusion and connection among RN’s who had a physical disability
during their nursing education. Conceptualizing disability as a form of diversity and using the DDDM (Aquino, 2016) to develop the interview guide will facilitate the understanding of factors related to a sense of inclusion and connection among students. Results will provide data that may potentially revise nursing educational admission policies and processes as well as the supports available for students with a physical disability in the educational environment. Gaining insight into programs and processes that facilitate inclusion and connection for students with physical disabilities has the potential to help education programs provide a better experience leading to greater academic achievement, facilitate graduate, and help people with physical disabilities thrive in the nursing profession.
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National Council of State Boards of Nursing.
Prelicensure nursing education experience of students with physical disabilities: A qualitative descriptive study

Kimberly Mantlow MBA, MS, RN

Tan Chingfen
Graduate School of Nursing
August 15, 2023 @ 2:30pm
Albert Sherman Center Auditorium

Disclosures

No affiliations with or involvement in any organization or entity with any financial interest in the subject matter or materials discussed in this project.
The number of nursing students with physical disabilities is unreported.

- 19% of all college students identify as having a disability (De Brey et al., 2021)
- 9.3% of college students with disabilities have disabilities that are classified as physical (U.S. Department of Education, 2017)

Current research often combines students with physical disabilities with other disabilities related to learning and mental health disabilities (Geibar et al., 2015; Pena, 2014)

- Disability is beneficial as a component of diversity (Scheer et al., 2020)
- Diverse academic settings have many benefits (Lau, 2016; USDE, 2016)
- Individuals with physical disabilities are at a higher risk for visible disability stigma, experiencing overt discrimination, belittlement and even pity (Akin & Huang, 2019)
- 25% of first-time students with disabilities drop out of higher education within the first year and 35% drop out at the end of 2 years (U.S. Department of Education, 2017).
For this study physical disability was defined as any condition of the body which increases the difficulty of an individual with the condition to interact with the environment and perform activities.

(Centers for Disease Control and Prevention, 2022)

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**Conceptual Framework**

- The Disability Diversity (Dis) Connect Model. (Aquino, 2016)
  - Disability contributes to student diversity
  - Disability is a unique characteristic of the individual and not an impairment
  - Identity oppression has created a minority group of disabled students with unique experiences

---

Student perception of academic and social inclusion is connected to their participation and integration into the postsecondary environment.
The purpose of this qualitative descriptive study, undergirded by the Disability-Diversity (Dis) Connect Model (Aquino, 2016), was to describe the pre-licensure nursing education experience of inclusion and connection among RN’s who have a physical disability.

**Study Aims**

**Aim 1**
Describe the access RNs with a physical disability had to academic and social opportunities during their prelicensure education program that contributed to academic and social integration (inclusion).

**Aim 2**
Explore perceptions of RNs with a physical disability regarding inclusion and acceptance of their disability as a valued component of student diversity during their prelicensure education program.

**Aim 3**
Describe the contextual factors and key aspects of connection during the pre-licensure educational experiences of RNs who had a physical disability as positive (Disability-Diversity Connect) or negative and disintegrated (Disability-Diversity Disconnect).
Inclusion & Exclusion Criteria to yield purposive sample

**Inclusion**
- Current licensure as a registered nurse
- Self-identified physical disability that was present during prelicensure nursing education experience
- Graduation from a prelicensure registered nursing program during or after 2016
- Ability to communicate in English

**Exclusion**
- Self-reported learning or mental health disability during prelicensure nursing educational experience

Qualitative Description allowed for low inference interpretation to preserve integrity of experiences.

- Maximum variation purposive sampling was used to capture a wide range of perspectives and look for patterns across variations
- Semi-Structured interviews, participant observation and collection of demographic data
- Conventional content analysis (Hsieh & Shannon, 2005)
### Trustworthiness

- Frequent debriefing sessions
  - Between the PI and research team to discuss different approaches, interpretations, and potential researcher bias

- Member checking
  - Completed with 4 study participants to verify interpretation of participants comments immediately following interviews.

- Audit trail
  - Reflected a consistent detailed process for data collection, analysis and interpretation procedures

---

### N = 16

**Video interviews (14)**

**Telephone interviews (2)**

<table>
<thead>
<tr>
<th>Physical disability attributed to:</th>
<th>Range</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cerebral Palsy</td>
<td>1</td>
<td>6.25</td>
</tr>
<tr>
<td>Chronic Fatigue</td>
<td>1</td>
<td>6.25</td>
</tr>
<tr>
<td>Crohn’s Disease</td>
<td>1</td>
<td>6.25</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>1</td>
<td>6.25</td>
</tr>
<tr>
<td>Hearing Impairment</td>
<td>2</td>
<td>12.5</td>
</tr>
<tr>
<td>Hypertrophic Cardiomyopathy</td>
<td>1</td>
<td>6.25</td>
</tr>
<tr>
<td>Multiple Sclerosis</td>
<td>1</td>
<td>6.25</td>
</tr>
<tr>
<td>Motor Vehicle Accident Trauma</td>
<td>1</td>
<td>6.25</td>
</tr>
<tr>
<td>Rheumatoid Arthritis</td>
<td>2</td>
<td>12.5</td>
</tr>
<tr>
<td>Scoliosis</td>
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<tr>
<td>Sickle Cell Anemia</td>
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<tr>
<td>Spinal cord (L1) injury</td>
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<tr>
<td>Type 1 Diabetes Mellitus</td>
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<tr>
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<table>
<thead>
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<th>Characteristics</th>
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<td>Age (years)</td>
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<td>Asian</td>
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</tr>
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<td>Caucasian</td>
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<tr>
<td>Educational Program</td>
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<td>Bachelor’s degree</td>
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<td>Public</td>
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<td>69</td>
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<td>State of educational program</td>
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<td>Maine</td>
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<td>Massachusetts</td>
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<tr>
<td>New Hampshire</td>
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<td>6</td>
</tr>
<tr>
<td>New York</td>
<td>3</td>
<td>19</td>
</tr>
<tr>
<td>Year graduated</td>
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<tr>
<td>2016</td>
<td>3</td>
<td>19</td>
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<td>2017</td>
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<td>2018</td>
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<td>6</td>
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<td>2021</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>2022</td>
<td>2</td>
<td>13</td>
</tr>
</tbody>
</table>
Immersion in interview data along with field notes led to identification of distinct themes

- Codes
- Categories
- Clusters
  - Themes
  - Subtheme
- Exemplars were identified

I Saved My Energy for Learning (-)  Determination (+)

Wanting to Find My People (+/-)  Secrets, Living a Double Life (-)

Fear of Judgement (-)
I Saved My Energy for Learning

Prioritized health needs over extra curriculum activities and social opportunities limiting engagement in some post-secondary experiences

“I don’t think I did much socially because I was so tired, right…. Nursing school is stressful, so I saved my energy for learning.”

Determination

- Obstacles
  - Internal
    - Health and physical disability
  - External
    - High School Guidance Counselors
    - Admissions staff
    - Faculty
    - Peers

“As soon as she (nurse faculty) met me, she tried to tell me that I wasn’t nursing material. I am not sure if it was my gender, being black or being deaf but she did not like me. Not one bit. But I think that her being like that made me want to prove her wrong even more.”

“I had just been diagnosed (with rheumatoid arthritis) and I was determined to not let that stop me.”
Wanting to Find My People

- Feeling “alone”
- Desire for connection
- Seeking others with a similar experience

“I knew that I had to find my people, the ones that were going to help me and encourage me throughout this process.”

Secrets, Living a Double Life

- Developing a façade
- Making excuses
- Playing pretend
- Lasting implications

“Sometimes I felt like I was living a double life. I know it sounds stupid, like some superhero thing, but school was school, home was home. I was me at home and a different person at school, someone who didn’t have cardiomyopathy.”
Subtheme- Fear of Judgement

“I made a mistake of mentioning on a tour of one school that I needed to take the elevator because my RA was acting up. The student guide was great and accommodating but when we got back to the admissions office, I met with a counselor that tried to convince me that I should look into their social work program instead because it was not as physically taxing. I immediately knew this was not the place for me. But it also made me scared to mention it to anyone else, so I didn’t.”

“I wasn’t sure what the school would think or if they may kick me out.”

Disability-Diversity Connect

Disability-Diversity Disconnect

Determination
Student self-determination is a factor influencing student success (Gregg, 2009).

Wanting to find my people
Connections based on shared experiences are beneficial (Minott et al., 2021).

I saved my energy for learning
Individuals managing a disability have less time to dedicate to education (Sach & Schreuer, 2011).

Wanting to find my people
Struggle to make connections with individuals with shared experiences.

Secrets, Living a Double Life and Fear of judgement
Fear of sharing their physical disability (Neal-Boylan & Miller, 2017).
Implications

- Need for academic cultures that value authenticity and are inclusive
- Importance of extracurricular and social activities that meet the needs of all students without adding to the stress that comes with living with a physical disability
  - This area needs further research exploring what is needed and how to best create it
- Cultivating the leadership skills and self-advocacy to support the determination of students with physical disabilities
  - Research is needed to determine how to accomplish this
- Creating opportunities for student with disabilities to connect across campuses

Limitations

- Potential for recall bias
- Limiting the sample to nurses that successfully completed educational programs
- Variation in physical disabilities among the participants
Conclusions

Conceptualizing disability as a form of diversity and using the DDDM (Aquino, 2018) to develop the interview guide facilitated the understanding of factors related to inclusion and connection for nursing students.

Identifying areas of concern among nursing students with physical disabilities provides a starting point for nursing programs to review their own practices.

Gaining insight into the experience of inclusion and engagement with the educational community of nursing students with a physical disability has the potential to help education programs consider how to provide a better experience for this group of students.
DISSEMINATION PLAN

The outcomes of this dissertation study were submitted for publication as a feature article to *Nursing Education Perspectives* on August 24, 2023. The manuscript is entitled “Nurses with Physical Disabilities Experiences During Pre-licensure Education”.
## APPENDICIES

### Appendix A

### Interview Guide

<table>
<thead>
<tr>
<th>Conceptual Area</th>
<th>Main Question</th>
<th>Probing Questions</th>
</tr>
</thead>
</table>
| **Enrollment Process**        | • How did you go about finding the school you wanted to apply to earn your degree in nursing? | 1. What was important to you when determining the program, you wanted to enroll in?  
2. Tell me what features you were looking for in the school environment?  
3. What were the most important things a school had to offer before you even considered applying?  
4. Tell me about any challenges you had when applying to nursing programs?  
5. What was it about the programs you applied to that made you think it was the “right” school for you?  
6. What changes would have improved this process for you? |
| **Institutional Characteristics** | • Support is important when taking on a challenge like nursing school. Please tell me about supports that were available to you. | 1. Tell me about a disability staff/resource available to you at school?  
2. What supports did you find most helpful in the learning environment (classroom, lab, clinical setting)?  
3. What supports did you find most helpful outside of the learning environment – housing, meals, |
<table>
<thead>
<tr>
<th>Academic Inclusion</th>
<th>• What was your experience with learning activities during your nursing education?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. How did this experience make you feel?</td>
</tr>
<tr>
<td></td>
<td>2. What made it easy to engage in the academic aspects of the program (class, lab, clinical)?</td>
</tr>
<tr>
<td></td>
<td>3. What if anything made it hard to engage in the academic aspects of the program (class, lab, clinical)?</td>
</tr>
<tr>
<td></td>
<td>4. Is there anything you believe would have made this experience better for you?</td>
</tr>
<tr>
<td></td>
<td>5. Did you feel accepted in the classroom, lab, clinical setting?</td>
</tr>
<tr>
<td></td>
<td>6. Tell me about a time you felt really welcomed into the learning environment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Social Inclusion</th>
<th>• What was your experience in participating in social activities during your nursing program?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Please describe how you feel this impacted your ability to be successful in your educational program.</td>
</tr>
<tr>
<td></td>
<td>2. What made it easy to participate in social activities?</td>
</tr>
<tr>
<td></td>
<td>3. What made it hard to participate in social activities?</td>
</tr>
<tr>
<td></td>
<td>4. Tell me about a time you wanted to participate in a social activity but didn’t really feel welcome or there were too many</td>
</tr>
<tr>
<td>Challenges/Barriers to do it easily?</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td></td>
</tr>
<tr>
<td>5. What was it about some social activities that made you feel welcome, and was it easy to join in and participate?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Diversity of Academic Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>The world is full of people with distinctive characteristics and with different backgrounds. What kinds of diversity were you exposed to at your school?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please tell me about anything that you feel would have helped you feel more included and connected to your school?</td>
</tr>
</tbody>
</table>

| 1. Do you feel that the school viewed disability as a component of diversity? |
| a. If so, explain how. |

| 1. What would have helped you feel more comfortable in the classroom, lab, clinical setting? |
| 2. What would have helped you be more comfortable with your living situation (housing, meals)? |
| 3. What would have helped you be more comfortable with the whole social scene at your school/on campus? |
| 4. What recommendations do you have? |
Appendix B

Fact Sheet

UMASS CHAN MEDICAL SCHOOL COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS IN RESEARCH

FACT SHEET

Title: Nurses with physical disabilities’ experiences during pre-licensure education: A qualitative descriptive study

Investigator: Kimberly Mantlow MBA, MSN, RN

A. We are inviting you to participate in a research study.

B. Taking part in this research is voluntary and completely up to you. You are free to say no or to leave the research at any time.

C. The purpose of this study is to understand the experience of accessing and completing a pre-licensure nursing education program for RN’s who had a physical disability when they went to school.

D. If you agree to participate, you will take part in a one-time interview expected to last approximately one hour. All interviews will be private.

E. There is a risk that someone could get access to the information you share as all interviews will be digitally recorded and transcribed. I will not collect any personal identifiable information about you and will not connect your name to any data that you share. I will code your information with a unique ID number. All the recordings will be transcribed and saved on a secure computer network with many levels of protection. The recordings will be destroyed after I review to be sure they are transcribed correctly.

I will not report any information that directly identifies you but because of the limited number of individuals with physical disabilities that have successfully completed pre-licensure nursing education to become a registered nurse, there is a risk of loss of confidentiality if someone recognizes your experiences. I will not include the names of people you might mention, where you work or name of the school you went to.

F. The data will be stored for a maximum of 3 years. There will not be any list that links your identity to your data.

G. Your participation will help us to gain knowledge about factors that facilitate and inhibit the prelicensure nursing educational experiences for people with a physical disability. However, there is no direct benefit to you.
H. As a thank you for your participation, you will be offered a $25.00 Bank of America gift card. Any participants who have completed the interview have the option to be entered into a random drawing for an additional $50.00 Bank of America gift card.

I. It may be several years before the results of the research are available. If you would like us to try to reach you at that time, please let us know. We will ask for your contact information.

J. We will try to limit access to your personal information to people who have a need to review this information. We cannot promise complete privacy. The UMass Chan Medical School, including the Institutional Review Board (IRB) and research, billing, and compliance offices, may see your information.

To receive a stipend for study participation, you will need to give us private information like your name, address, and phone number. We will then share this information with the business offices and companies that need it to process the payment. You will need to provide your social security number and complete a W-9 (tax form) if you receive:

- $300 or more from a single study within a single calendar year at UMass Chan, or
- $600 or more in a calendar year across multiple research studies at UMass Chan.

The Medical School may report the payment to the IRS and send you a 1099 form for tax purposes. The business offices and companies will keep the information as part of their financial records. The research team will destroy this information four years after study closure.

K. The UMass Chan Medical School does not provide funds for the treatment of research-related injury. If you are injured because of your participation in this study, treatment will be provided. You or your insurance carrier will be expected to pay the costs of this treatment. No additional financial compensation for injury or lost wages is available. You do not give up any of your legal rights by participating in this research.

L. If you have any questions, concerns, or complaints, or think that the research has hurt you, you can talk to the Principal Investigator at Kimberly.Mantlow@umassmed.edu or (207) 232-6404. This research has been reviewed and approved by an Institutional Review Board. You can reach them at (508) 856-4261 or irb@umassmed.edu if you would prefer to speak with someone not associated with the study or have questions about your rights as a research subject.

If you or anyone you know are interested in participating in this study, please contact

Kimberly Mantlow MBA, MSN, RN at

Kimberly.Mantlow@umassmed.edu or at 207-232-6404
Appendix C

Date: _______________________               Participant ID # _______________________

Participant Demographic Form

Please complete each statement below thinking about yourself when you fill in each blank.

Age: ________________

Gender: _____ Male   _____ Female   _____ Other   _____ Prefer not to answer

Race:

_____ Caucasian    _____ African American    _____ Hispanic or Latino

_____ Asian       _____ Native American       _____ Mixed race       _____ Other

_____ Prefer not to answer

What is the nature of your physical disability? _______________________________________

How many years did you have your physical disability before you began your nursing
education program? _______________________________________

What type of prelicensure educational program did you attend?

_____ Diploma       _____ Associates degree     _____ Bachelor’s degree

_____ Master’s degree    _____ DNP       _____ PhD

What year did you graduate from the nursing program? _____
What state was your nursing prelicensure program in? ______________________

Was the nursing program in a public or private higher education institution?

______ Public    ______Private    _____Unknown

How many years did it take you to complete the prelicensure program? _____ Was this more or less than expected when you started? ________________________________

Where type of housing did you have the last 2 years of your prelicensure nursing program school year? (check all that apply)

___campus housing, ___ in an apartment off-campus, ___at home with family

___ other (please explain) ________________________________

What is your current Employment Status?

______ Full time    ______Part time    _____Unemployed    _____ Student

If working, what type of work you are doing currently: ________________________________

______________________________________________________________________________
Appendix D

Email Inviting Participation

Dear Invitee,

My name is Kimberly Mantlow. I am a doctoral student at the Tan Chingfen Graduate School of Nursing at UMass Chan Medical School. I am kindly requesting your participation in a doctoral research study that I am conducting titled: Nurses with physical disabilities’ experiences during pre-licensure education. The purpose of this study is to understand the experience of accessing and completing a pre-licensure nursing education program for RN’s who had a physical disability when they went to school. I want to hear about what it was like for you to go through the nursing program, what worked well and what may have been challenging.

The study involves completing basic demographic information and one 60-minute interview that can take place in person, over telephone, or via videoconferencing using Zoom, whichever you prefer.

Participation is completely voluntary, and you may withdraw from the study at any time. The study is confidential; therefore, it does not require you to provide your name or any other identifying information.

If interested in talking with me, please read the attached Fact Sheet. If you have any questions, please do not hesitate to reach out to me. If you know of anyone else that might be interested in participating in this research study, please share with them and give them my email or contact information.

Thank you for your time and consideration.

Sincerely,

Kimberly Mantlow MBA, MSN, RN