IMPLICIT BIAS IN STUDENT NURSES

By

Sarah French

An Honors Project Submitted in Partial Fulfillment

of the Requirements for Honors

in Nursing

School of Nursing

Rhode Island College

2020

Honors Project Advisor: Karen Hetzel, Ph.D., PMHCNS-BC

Approved:

Karen Hetzel	6-4-2020
Project Advisor	Date
Sharon Galloway	6/9/2020
Honors Committee Member	Date
Esperanza Gutierrez	6/10/2020
Honors Committee Member	Date
Claire Creamer	6/15/2020
Department Chair	Date

Table of Contents

Abstract

The purpose of this project was to identify student nurses' implicit bias across vulnerable populations in healthcare including age, weight, and mental illness. Implicit bias occurs when individuals have attitudes toward or treat people differently based on associated stereotypes without being consciously aware of this. This project surveyed student nurses at Rhode Island College in a quantitative fashion about implicit bias using the implicit association test (IAT) and qualitatively using a corresponding survey about explicit beliefs. The Implicit Association Test measures the strength of associations between concepts (i.e. young people, old people) and evaluations (good, bad) or stereotypes (athletic or clumsy). These unconscious preferences develop over time by a person's individualized culture and the way they are raised. So even though someone's outward attitudes are unbiased, their unconscious attitudes can still be biased. By identifying student nurse bias, it can be addressed. The goal was to propose potential education to add into beginning nursing courses at Rhode Island College, and/or implementing pieces into simulation to discuss ways to promote culturally competent care. Implicit Bias is a cycle and it needs to be addressed in the beginning, with students, who are learning to become professionals.

Keywords: Implicit Association Test, IAT, implicit bias, nursing students, weight, mental illness, age

Introduction

Bias comes in two forms, explicit bias and implicit bias. Implicit bias is ubiquitous. It exists in every individual to some capacity, no matter how strongly they feel impartial. Specifically, bias includes stereotypes that can unconsciously affect our actions, comprehension, and decisions. Implicit bias encompasses positive and negative connotations including extremely trivial things such as associating cats and positive words or spiders and negative words. Before our conscious mind can even interfere, our subconscious has decided it is easier to associate certain words one way or the other based on an individual's experience (The Kirwan Institute 2015).

This concept makes sense when looking at primitive humans. If one associates a poisonous plant with negative thoughts, you're likely to not try eating it or going near it. These defense mechanisms supported survival. But as society evolved so did the individuals. Now in a society where we are not as consciously worried about our method of survival, our brains have developed this same pattern of thinking, but towards stereotypes. Individuals grow up in one environment and associate their surroundings as baseline. Then as individuals grow and intermingle through communities, their brain reverts to a more primitive state, making impulsive decisions. Impulsivity can be beneficial when in a dangerous environment, but when placed in a situation where the content is just different, our brain interprets different environments as negative or uncomfortable to the individuals or communities as a whole (Project Implicit, 2011).

Implicit bias now becomes incredibly dangerous in today's society. Our brains are learning to associate familiar as good and unfamiliar as bad, inciting maladaptive behaviors. Now when individuals are exposed to new culture, the primitive aspects of the brain take over.

Whether it is then explicitly managed, and an individual doesn't appear biased, implicit belief is pervasive and exists indefinitely. Implicit and explicit belief are not mutually exclusive and can contradict each other consistently. Although, it is much easier for an individual to avoid uncomfortable situations and therefore leave implicit bias unaddressed (Project Implicit, 2011).

Individuals in healthcare are trained to provide culturally competent care, free of judgement and bias. Patients should expect to receive an equal and fair standard of care regardless of race, sexual orientation, appearance, or any other identity. Healthcare workers expect to provide equitable care, but often their actions do not always align with their beliefs. Without individual self-reflection it is impossible for accountability in these behaviors. It is critical for those who are working with the physical, mental, and emotional health of others to address their self-perceived cultural competence and find any disparity between their perceptions and actions (FitzGerald & Hurst 2017).

Student nurses are a critical piece of battling implicit bias and its repercussions. Current research examines the effects of implicit bias in healthcare and ways to introduce continuing education for current healthcare professionals but lacks education in healthcare students. Nash, Hamilton, and Mayer (2014) identified that nursing students were significantly more positive with their identified attitudes when compared to current nurses. These attitudes could be as a result of a changing climate in our society, but it is something that we cannot take for granted. Unfortunately, Nash et al., (2014) also found that these students still held implicit biases along with the rest of the participants, which therefore could still result in a discrepancy in care. If students are found to have less explicit biases than current registered nurses, we need to reinforce these behaviors. Unfortunately, if research continues to look at re-education of professionals, we

will never discontinue the cycle of implicit bias affecting healthcare outcomes, which is found within both current nurses and student nurses alike. In order to eliminate this, the root of the problem needs to be addressed, and that starts with our current nursing students.

Literature Review

A literature search was conducted using the Rhode Island College Library Database, specifically looking at the CINAHL, Google Scholar, MEDLINE, Nursing Standards, PsycArticles, PsycINFO, and PubMed databases. Search terms included: implicit bias in nursing students, implicit bias in nursing, implicit association test, unconscious bias, bias in weight, bias in age, and racial bias in nursing students. Articles of research studies from the previous 20 years were included to see the evolution of these studies, specifically beginning in 1998 when the original article on the Implicit Association Test (IAT) was published. Consideration was taken to locate articles that used the Implicit Association Test in their research. Exceptions to the search criteria were made for some articles based on their relevance or use in other sources. In total, 29 articles were identified and incorporated.

What is implicit bias?

Before implicit bias can be defined, implicit cognition must first be addressed. This concept stems from the idea that "traces of past experience affect some performance, even though the influential earlier experience is not remembered in the usual sense" (Greenwald & Banaji 1995 p.4). Essentially an individual is unable to recall how these experiences effect their day to day lives. Greenwald and Banaji (1995) explore these concepts in their initial research regarding implicit social cognition. Previous social psychologists identified attitude as an individual's most "distinctive and indispensable concept" (Allport, 1935, p.798). At the time, the

current accepted belief was attitudes and stereotypes were something people controlled consciously. Given the idea that attitude is the cornerstone of individuals and how they interact in the world, it is important to look at how these attitudes effect interactions between people through both a societal and individual lens (Greenwald & Banaji, 1995). The authors found that further research over the years concluded individuals processed information on both a conscious and unconscious manner, therefore it became a focus of Greenwald and Banaji to analyze implicit social cognition. Both sought to explain the innerworkings of how an individual's social behavior functioned in an unconscious way and the potential ramifications.

Greenwald and Banaji's (1995) definition of implicit cognition was a first for this term and includes the concept that past experiences are built upon one another, adding to an unconscious collective the individual is unable to consciously retrieve, but shapes their actions on a daily basis. The authors continued to narrow their scope on attitude, as an individual's attitude will often determine their behavior. These attitudes can be either favorable or unfavorable towards people, places, and policies (Greenwald & Banaji, 1995). Many definitions of attitude by social psychologists ranging from the 1930s to the 1960s are nonspecific in their mention of whether attitudes are conscious or unconscious, as there was a lack of distinction between the two. A similar trend is seen in stereotypes and their definitions.

Even past the 1960s social psychologists and researchers continued to be nonspecific in whether individuals consciously or unconsciously stereotype others, only defining a stereotype as a socially shared belief (Greenwald & Banaji, 1995). Stereotypes thereby become the offspring of collective attitudes. The authors found that a multitude of aspects stemming from the human experience shaped implicit cognition and sought to understand this undiscovered concept.

Implicit bias is a byproduct of implicit cognition that would soon be further analyzed by Greenwald. Greenwald and Banaji rung in a new era for social psychology and these findings would produce a domino effect throughout the research world after 1995.

What is the Implicit Association Test (IAT)?

Greenwald and Banaji concluded in 1995 that "much social cognition occurs in an implicit mode," therefore if an individual's social attitudes are occurring without their consciousness, a conscious effort should be made to monitor them (p.20). This is how the Implicit Association Test (IAT) came to fruition. Anthony Greenwald continues to play a crucial role in the analysis of implicit cognition and his research is seen by many as the foundation for this phenomenon. Greenwald, McGhee, and Schwartz (1998) based the IAT off the concept of an experiment where an individual is shown a series of male and female faces and asked to respond as rapidly as possible by saying, "hello" if the face was male and "goodbye if the face was female. Then the individual would be asked to complete the same task but this time with male and female names. Finally, the two tasks would be integrated together alternating randomly between faces and names. Greenwald et al. (1998) inferred that this first task would be easy as the participant would grow accustomed to this and quickly assign the correct answer. The authors now ask the reader to imagine if the participant were to complete the first task of saying "hello" or "goodbye" to the male and female faces, but then reverse the instructions for the distinction of male and female names. Therefore, the participant would still be saying "hello" to male faces and "goodbye" to female faces, but now saying "hello" to female names and "goodbye" to male names. Greenwald et al. (1998) concluded that it would take considerably more time on the participants part to carefully choose the correct response. This concept

provided a model for the IAT, in which to measure an individual's "underlying automatic evaluation" (Greenwald et al., 1998, p. 1464). Thus, having a participant provide these answers as quickly as possible it is plausible to assume that the longer a person takes the more time was taken to curate to their response, instead of it being an automatic evaluation. This automatic response would be one socially engrained into them, while those that took longer would require their conscious assessment of the correct answer. The authors then suggest how a basic concept such as this could produce intriguing results when interchanged with a socially charged concept in which an individual would not consciously choose to express certain attitudes (Greenwald et al., 1998). Figure 1 demonstrates a visual representation of this concept and illustrates the structure of the implicit association test.

Figure 1

*Schematic Description And Illustration Of The Implicit Association Test (IAT).*Reprinted from "Measuring Individual Differences in Implicit Cognition: The Implicit Association Test" (Greenwald et al., 1998)

Sequence	1	2	3	4	5
Task description	*Initial target-concept discrimination*	*Associated attribute discrimination*	*Initial combined task*	*Reversed target-concept discrimination*	*Reversed combined task*
Task instructions	• BLACK WHITE •	• pleasant unpleasant •	• BLACK • pleasant WHITE • unpleasant •	BLACK • • WHITE	BLACK • • pleasant • WHITE unpleasant •
Sample stimuli	MEREDITH o o LATONYA o SHAVONN HEATHER o o TASHIKA KATIE o BETSY o o EBONY	o lucky o honor poison o grief o o gift disaster o o happy hatred o	o JASMINE o pleasure PEGGY o evil o COLLEEN o o miracle o TEMEKA bomb o	o COURTNEY o STEPHANIE SHEREEN o o SUE-ELLEN TIA o SHARISE o o MEGAN NICHELLE o	o peace LATISHA o filth o o LAUREN o rainbow SHANISE o accident o o NANCY

As Figure 1 demonstrates, the IAT uses four different categories of stimuli, Target A and B, an unpleasant and pleasant group of words, and words that fit in both Target A and Target B's categories. The Target A and B are usually the two concepts an individual wants to compare participant response against. In Figure 1, Target A and B are Black and White.

The IAT uses this basic group of stimuli and moves the participant through four different tasks. Subjects are asked to respond to four categories of stimuli with just two choices. The online version of this test used the "E" and "I" key on a keyboard. The participant must first select the Target A and B stimuli that fits under the correct category of A or B. In Figure 1 this example would be the traditionally white names and the traditionally black names. The test moves the participant through a series of prompts asking the individual to place these names with the correct grouping as quickly as possible. It determines what researchers deem, "target-concept discrimination" (Greenwald et al., 1998, p. 1465). The next prompt follows a similar task where it asks the participant to group unpleasant and pleasant words with the correct category, thereby achieving "attribute discrimination" (Greenwald et al., 1998, p. 1465). After these constants have been set for the participant, the test mixes these categories up and stimuli for the proposed target and the unpleasant/pleasant words alternate. The next step then reverses the directions and asks the participant to do the opposite of what they did in the first step. The final part of the IAT then repeats step three but in this opposite format.

By having participants do these same tasks but inverted, the researcher can distinguish which format the participant is more easily able to complete at a quick pace. The quicker a participant responds, the less they had to consciously choose this option. By comparing the two results, a researcher would be able to tell which target category the participant favored. For

example, in Figure 1, if a white participant completed this activity, it is speculated they would have an easier time completing the category that pairs white names with pleasant words, as this is the stimuli they've been conditioned to pair together culturally. In order to prove the effectiveness and validity of this test, Greenwald et al. (1998) conducted three separate experiments and the first included very trivial stimuli and targets such as flowers vs insects and instruments vs weapons. The second experiment used Japanese and Korean Americans and their associations of each other, and the third used the hypothesized concept of white and black and pleasant and unpleasant.

Greenwald et al. (1998) found that the IAT measured an individual's basic associations between objects and their evaluations, which therefore could be used to measure an individual's implicit attitudes. This is how Project Implicit began. Project Implicit is a non-profit organization comprised of researchers and those interested in implicit social cognition internationally. Project Implicit was founded by Anthony Greenwald, Mahzarin Banaji, and Brian Nosek (Project Implicit, 2011). Their goal is to educate the public on implicit bias and use the website as a "virtual laboratory" in which they collect data from their website (Project Implicit 2011, "About Us" para. 1).

In 2003, Greenwald, Banaji, and Nosek furthered their research and updated the algorithm for the IAT along with discussion on the Yale IAT Web Site. Greenwald et al. (2003) describes the intent of the website was to function almost like "an interactive exhibit at a science museum" (p.198). The website allowed respondents to take IATs all from the comfort of their own home, along with interpretations of their results using simple language characterizing the strength of association. These online surveys also included a set of 10-15 questions asking a participant about their explicit beliefs regarding the topic of the IAT. These questions are not used for quantitative

analysis but rather to qualitatively look at disparities between a participant's implicit bias and their explicit beliefs about their biases. From October 1998 until May 2002 approximately 1.2 million tests were completed (Greenwald et al., 2003). The authors felt it necessary to clarify that many people who took the IAT had results demonstrating an automatic preference for one race over another, but this did not mean they were prejudiced towards this race following the definition of prejudice that approves or endorses discriminatory behavior. Over the next 15 years, this research would continue to compile on the IAT Web Site while Project Implicit worked hard to analyze, improve, and do further research.

Implicit Bias in Research

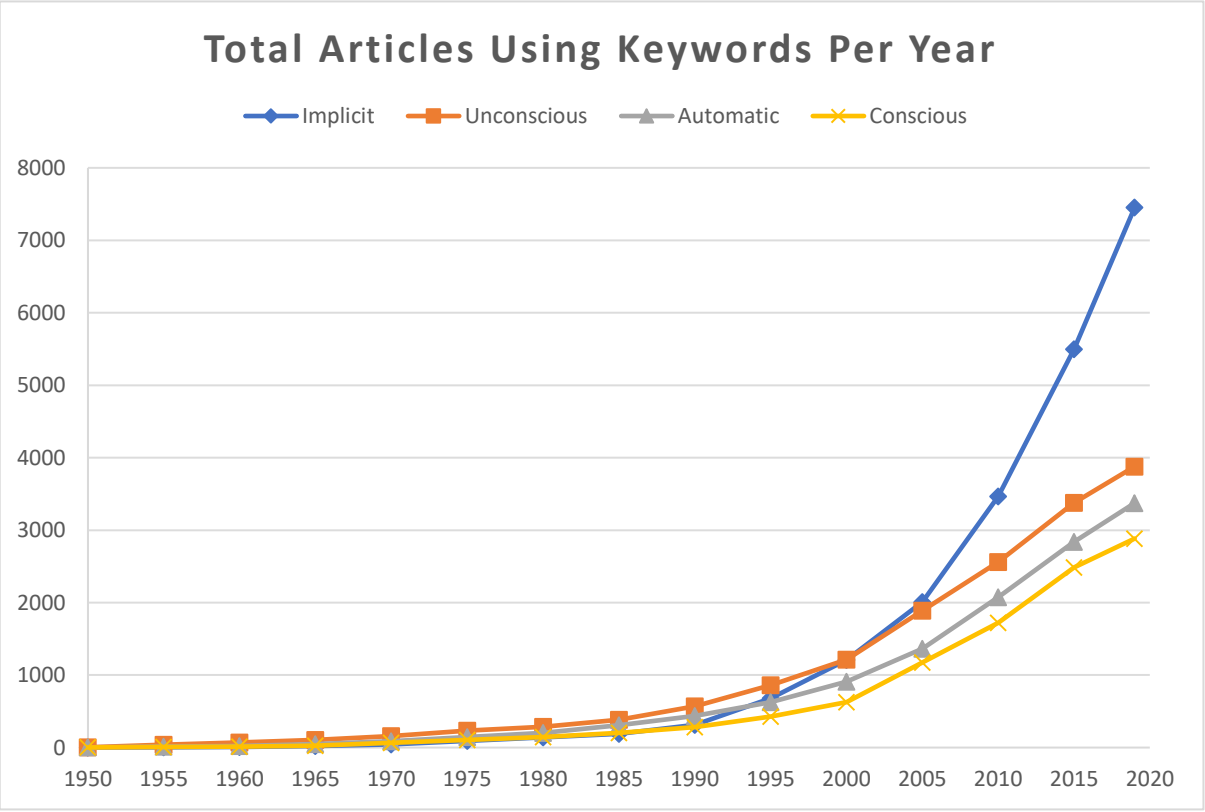
The use of the word implicit has exponentially increased over the last 20 years throughout keywords in psychological research (Greenwald and Banaji, 2017). The concept that individuals operate on a subconscious level and this in turn effects their outward attitudes and behaviors has become of particular importance to researchers since the 1980s.

Greenwald and Banaji (2017) discuss how for a great deal of the 20th century unconscious was a taboo word in academic psychological writing. As Figure 2 demonstrates, research focusing on these key concepts such as the unconscious mind and implicit cognition did not truly emerge until the late 1990s into the early 2000s. It would be reasonable to conclude that the development of Project Implicit and the IAT was a major contributing factor that lead to this boom in implicit cognition research. Many researchers were then inspired to use the IAT to assess potential implicit bias in a variety of fields and professions. For the purpose of this literature review the researcher is focusing on healthcare related research, and further on nursing and nursing students.

Figure 2

Total Articles Using Keywords Per Year. Adapted from Greenwald & Banaji, 2017

Use of words as keywords in the American Psychological Association (APA) PsycINFO database since 1950, search limited to peer-reviewed journal articles



Much of the implicit bias research in the healthcare field stems from areas of known explicit bias both in the healthcare setting and society. Often research looking at professionally trained individuals' questions whether the most competent trained individual will still exhibit implicit bias towards their respective clients and community. Findings show implicit bias is often a predictor for explicit biases such as prejudice and discrimination (Hofmann, Gawronksi, Gschwendner, Le, and Schmitt, 2005). Implicit bias can even be viewed as a better predictor for

actual discrimination comparatively to explicit tests because implicit testing will identify biased attitudes that an individual would not self-report, even if consciously aware. A notable report, "Unequal Treatment" was one of the first reports that brought attention to inequities in healthcare, specifically racial and ethnic based disparities (Nelson, 2002). The inequities addressed in this report were not focused on implicit causes, but rather explicit biases and prejudices in health care providers. Maina, Belton, Ginzberg, Singh, and Johnson (2017) reference this monumental report in their analysis of healthcare literature from 1997 through 2015. The authors found that most research over this span of time focused on health care provider bias in relation to race and identified a lack of research that investigates the effect of implicit bias on patient care and outcomes. It was also identified that almost all analyzed research lacked methods to reduce implicit bias amongst healthcare providers (Maina et al., 2017). Throughout this research, only one reviewed article was noted to have concluded a reduction of implicit bias amongst a total of 37 different studies. Researchers have now spent almost two decades researching implicit bias in healthcare providers, but rarely seek interventions to reduce this bias or understand the impacts on patient care.

Mental illness in research.

An important area of discussion when it comes to bias, both implicit and explicit, is mental illness. As 1 in 5 Americans will experience a mental illness in any given year, mental illness is ubiquitous (Center for Disease Control and Prevention [CDC], 2018). Therefore, mental illness affects almost every individual in some capacity, yet the stigma surrounding mental illness is just as prevalent. Increasing stigma towards mental illness only acts as a barrier to individuals trying to better themselves or receive treatment (Stier & Henshaw, 2007). When

such a large category of individuals is stigmatized, it drastically effects whether they will seek out treatment or help. This stigmatization only furthers the toll mental illness takes on these individuals, their families, and loved ones (Stier & Henshaw, 2007). The World Health Organization (WHO, 2001) deemed mental illness one of the leading causes of ill-health and disability on a global scale over 15 years ago, and this trend has only increased. Kopera et al. (2013) found that although mental health professionals had less of a tendency to discriminate towards people with mental illness, they still reported negative implicit attitudes towards mentally ill. This continued bias only further emphasizes the need to reduce implicit bias among healthcare workers at all levels. Most research focuses on healthcare providers such as doctors, but other members of the multidisciplinary team are just as crucial. These professionals all play a crucial role in the treatment of individuals with mental illness and training to reduce implicit bias could drastically improve patient outcomes.

Weight in research.

Another pressing concern in healthcare and research is obesity. The WHO defines obesity as "abnormal or excessive fat accumulation that presents a risk to health" (WHO, 2014). The Center for Disease Control and Prevention (CDC) discusses the obesity epidemic in the United States and its unquestionable role in the many leading causes of death such as heart disease, stroke, and diabetes (CDC, 2020). Obesity is often is found at a much higher rate in non-Hispanic blacks and Hispanics at 46.9% and 44.8% respectively (CDC, 2020). This correlation with race and ethnicity is only more concerning when it comes to implicit bias, as explicit bias in the form of racism is still prevalent in the United States today. An individual who is a non-Hispanic black or Hispanic that is also obese is already facing many barriers to access care in an

unbiased manner than a white obese individual. Individuals who are obese already face much scrutiny from both their primary care provider and the constant bombardment of diet culture in American society. Stigma and bias associated with obesity is omnipresent in society and healthcare is no exception. As seen in mental illness bias, discrimination against obesity leads to poor health outcomes and increased risk of mortality (Sutin, Stephan, & Terracciano, 2015). Sutin et al. 2015 found that in addition to the risk factors obesity predisposes an individual to, weight discrimination may even lead to shorter life expectancy.

Another common problem that arises with weight bias is internalized weight bias, which can become even more problematic on an individual's mental and physical health (Alberga, Russell-Mayhew, von Ranson & McLaren, 2016). A look at the current research and literature on weight bias in healthcare professionals by Murphy and Gardner (2016) found that weight bias and related negative attitudes affect patient care regarding conditions beside obesity, as providers focused on their weight instead of other medical diagnoses. Alberga et al. 2016 identifies that weight bias interventions requires an upstream, population-level approach, such as increasing awareness of weight bias and its negative implications. In order to combat weight bias individuals on a population level need to understand what it is, and how it can be harmful. Alberga et al. 2016 also identifies that sensitivity trainings on the prevention and management of obesity can also be crucial in combatting weight bias, and therefore improving the health and wellness of those combating these issues. Research by Puhl and Suh (2015) states that at a baseline there is an increased need for awareness of weight stigma and its consequences specifically in healthcare. A call for healthcare professionals to advocate for change on a societal level through policy and public health initiatives are also deemed as crucial to radicalize the way American society conceptualizes weight (Puhl & Suh, 2015).

Age in research.

Over the next 10 years over 20% of the population in the United States will be over the age of 65 (Batsis & Zagaria, 2018). The WHO (2018) has determined that by 2050 people aged 60 and older is expected to be 2 billion of the total world population, whereas in 2015 this number was 900 million. Ageism is the stereotyping and discrimination against older adults. Ageism is the less talked about bias in the United States and across the globe as it is more normalized. When compared to racism or sexism it seems minute, but as populations become older and older, this becomes an increasingly troublesome problem that will eventually affect everyone at some point in their life (Wyman, Shiovitz-Ezra, & Bengel, 2018). In healthcare this becomes an ever-bigger problem as providers are faced with a growing population of geriatric patients as consumers of healthcare. Wyman et al. (2018) analyzed a myriad of literature on this topic and found that healthcare providers can be some of the worst offenders of ageism, and that this bias can have negative effects to the person's health and increase healthcare costs.

American society over time has manipulated the connotation around aging to seem medical in nature. Aging is seen as a disease that needs to be cured, and therefore the stigma surrounding it has only worsened and spread throughout our culture (Wyman et al. 2018). In healthcare the older someone is, the more likely their condition is attributed to their age no matter the actual etiology. This belief can lead to poorer treatment as the assumption is that effort will be futile to a patient's success and recovery due to increased age (Kagan & Melendez-Torres, 2015). In a Polish study where seniors self-reported ageism Dobrowolska et al. (2019) found that 30% of these seniors experienced or witnessed ageism in healthcare facilities from both professionals and other patients. Specifically, they reported being discriminated against less

by nurses than doctors. This research also found that seniors rarely reported positive behaviors about aging, and often were self-discriminatory towards themselves and others their age. The authors call for an increase in ethical education including the awareness of ageism and its possible repercussions along with a positive connotation towards old age (Dobrowolska et al. 2019). In order to combat ageism, especially in healthcare, it needs to be dispelled as normal and accepted.

Americans are becoming older, more obese, and mentally ill. Yet all these groupings are continually discriminated against in our society. As healthcare workers, individuals falling under any and all of these categories come to facilities looking for our guidance and help. Since we are some of the most trusted professions, we should be the last people creating a negative and biased space to receive and help these individuals. Therefore, implicit bias needs to be addressed in healthcare students to nurture a workforce of compassionate, understanding, and culturally competent professionals.

Implicit Bias in Healthcare Students

As this study looked at nursing students specifically, the author analyzed literature that targeted implicit bias among healthcare students with a focus on nursing students. Research studying implicit bias using the IAT was not scarce, but specifically finding recent research regarding healthcare students and the IAT was another challenge. This search was then also narrowed to identify bias in students towards the populations identified by the author. All identified research held a common theme, that healthcare students need more education regarding unconscious bias in order to promote culturally competent care and to ensure the best patient outcomes.

Mental illness was a topic most covered by researchers when identifying student bias. Research by Sandhu, Arora, Brasch, and Streiner (2019) analyzing explicit and implicit attitudes of medical students, undergraduate students, and psychiatrists found that psychiatrists had the lowest scores regarding implicit bias compared to the students, and that being diagnosed with a mental illness also significantly reduced someone's explicit stigma, but not necessarily implicit stigma. This research used the same mental illness IAT as this study, but in conjunction with the Opening Minds Scale for Healthcare Providers (OMS-HC), a tool which focuses on explicit stigma. These researchers concluded that contact-based interventions which increased a student's exposure were effective in reduced explicit stigma but noted it might not be effective with implicit bias (Sandu et al., 2019). Peris, Teachman, and Nosek (2008) concluded a similar concept, that implicit bias plays a different role in mental illness stigma, and therefore requires a different solution. Similarly, Peris et al. (2008) found that the more training an individual had regarding mental illness, the lower their implicit bias. These authors also found that implicit bias was not linked to poorer patient prognoses, but rather over diagnosis (Peris et al., 2008).

A much more limited amount of research analyzed student bias compared to professionals regarding weight stigma. Juxtaposed to the previous research mentioned in age, Yılmaz and Yabanci Ayhan (2019) found that when compared to current registered nurses, student nurses were found to have fewer negative attitudes towards obesity. It was concluded that these attitudes were influenced by the nurses' body mass index (BMI) and having obese family members. Although, student nurses were still found to be negatively biased towards obese individuals (Yilmaz & Yabanci Ayhan 2019). Other research has looked at psychology, nursing, and medical students which found statistically significant amounts of bias in these students, and their goal was only to identify the biases found among these students, and suggest their possible

implications for patient care (Phelan et al., 2014 ;Waller, Lampman, & Lupfer 2012). It was found when comparing different fields of students against each other there was no significant difference in degree of bias. The authors suggested implementation of interventions into nursing curriculum to help students understand the lived experiences of obese individuals as most commonly these individuals will interact with nurses as other health conditions emerge (Waller et al., 2012). While Phelan et al. (2014) conducted a comprehensive study including almost 5,000 medical students from 49 different schools, this study focused solely on medical students. This research is transferable as the focus is on healthcare students, but it is important to note that doctors interact differently and often less frequently with patients than nurses do. Therefore, the implications and interventions geared towards these students would be different, but this study emphasizes the concept that implicit bias needs to be addressed in healthcare students throughout the field (Phelan et al., 2014).

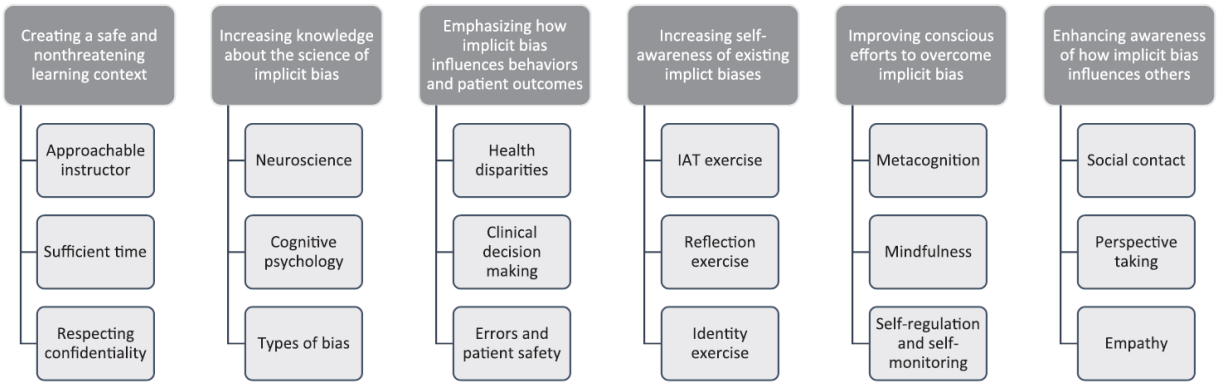
Regarding age, Dobrowolska et al. (2019) found that among healthcare students' opinions on aging remained mainly neutral, but that no reported positive characteristics of old age were reported. Therefore, students did not seem biased one way or the other but were also unable to talk positively about old age. The authors also discussed how "negative professional models" for students can negatively affect their development into a professional through what is called 'reality shock' (Dobrowolska et at., 2019 p.456) Reality shock is further described as the disconnect between how a student envisions caring for a patient and the clinical experience itself. (Dobrowolska & Palese 2016). The previously described disconnect a student often faces throughout their education mirrors the concept of implicit bias. Students do not seek to be biased in their care, but once faced with the clinical experience, are either completely unaware of implicit bias, or are unaware of how implicit bias will affect their care.

There is a trend in research regarding students and implicit bias in which researchers identify the student bias, but often do not test interventions with this specific topic and indicate future research should analyze this. Unfortunately, research further analyzing possible interventions still don't exist nearly enough. Sukhera, Wodzinski, Rehman, and Gonzalez (2019) conducted a meta-narrative review to analyze the usage of implicit association tests in health professionals. This review thoroughly looked at 38 different articles which used the IAT in conjunction with healthcare professionals and sought to identify common purposes and conclusions. Sukhera et al. (2019) concluded there were two main reasons a researcher utilized the IAT in their studies. Researchers either sought to evaluate the effectiveness of education or wanted to use the IAT as a catalyst for discussion regarding unconscious bias. Criticisms of the IAT were also explored such as the concept that this type of research is "insufficient to advance practical solutions for discrimination and prejudice" (Sukhera et al., 2019, p. 268). At the end of this review the authors determined that the complexity of implicit bias is unable to be understood or changed through a simple Implicit Association Test. The test is simply a tool to use as part of a framework for education, rather than the entire invention itself.

Javeed Sukhera, the same lead author as the previous review listed above published an article a year earlier entitled, "A Framework for Integrating Implicit Bias Recognition Into Health Professions Education" (Sukhera & Watling, 2018). This article proposes a comprehensive structure for implicit bias recognition and uses research from varying fields including psychology, business ethics and higher education to create one unified plan geared towards those in healthcare. In terms of outlining the framework there are six main points as described by the darker gray boxes along the top row in Figure 3.

Figure 3

Framework To Integrate Implicit Bias Recognition And Management Into Health Professions Curricula. Reprinted from "A Framework for Integrating Implicit Bias Recognition Into Health Professions Education" (Sukhera & Watling, 2018)

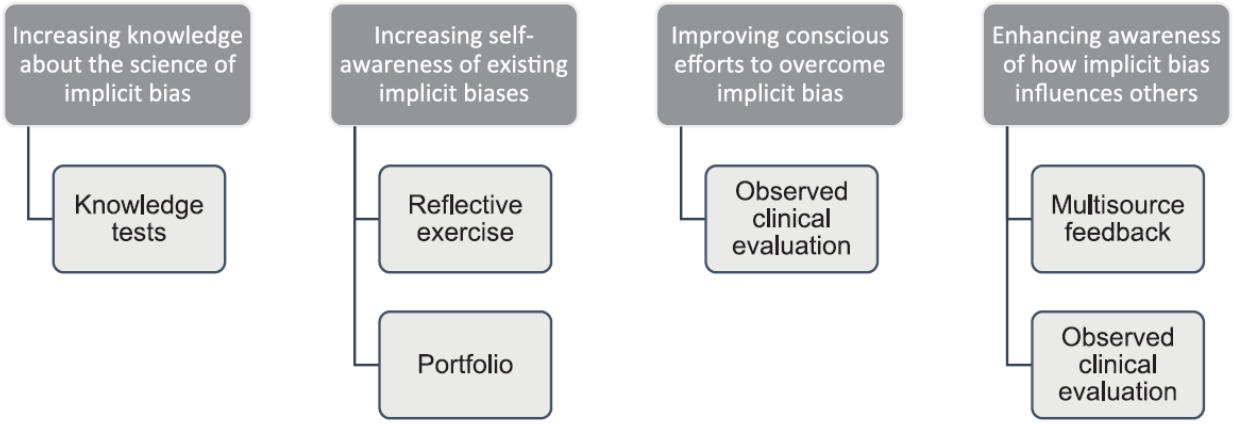


Sukhera et al. (2018) identified how most educational programs have good intentions but usually focus on short term interventions that lack proper integration and therefore are unable to have meaningful impact on their students' implicit bias. This framework emphasizes that students need safe nonthreatening environments, and they need to understand the science of implicit bias. This again would not be accomplished with just a simple Implicit Association Test. There should also be an emphasis on how implicit bias can affect patient outcomes and influences the people around them. Students need to understand that this bias exists in everyone, and they can work to become more self-aware, but may never fully erase their bias. Importance is placed on creating change on a societal level and asks researchers to consider, "Is your curriculum designed to improve learner attitudes while promoting cultural change, diversity, and inclusion? Do you aim to improve healthcare quality and patient experience? Is there an overall equity-related goal in mind?" (Sukhera et al., 2018, p.37). To further elaborate on this concept the authors created another chart illustrating how to evaluate their proposed framework once

implemented into a specific educational program. Evaluation of an institution's program is key in understanding its effectiveness. Implementation of programs on this scale also need to be long term and take both a quantitative and qualitative approach. Studies that have implemented only short bursts of materials such as a pre- and post-test in the form of an IAT do not fully delve into the complicated nature of implicit bias.

Figure 4

Example Strategies To Assess Learner-Related Outcomes. Reprinted from "A Framework for Integrating Implicit Bias Recognition Into Health Professions Education" (Sukhera & Watling, 2018)



While this framework is thorough, the authors emphasize that there is no one method of identifying implicit bias. This framework can be used for unconscious bias education but should be constantly evaluated and updated as further research is needed to truly understand how to combat implicit bias.

Project Objectives

The main objective of this research was to call attention towards implicit bias in the healthcare community, specifically student nurses as they are an essential component of the

incoming workforce and their education directly impacts their careers as professionals. A specific objective of this project included identifying student nurses' implicit bias across vulnerable communities including, obesity, mental illness, and age. The research surveyed student nurses at Rhode Island College about implicit bias using an implicit association test (IAT) and corresponding survey about explicit beliefs. Once this data was collected, communities' in which students struggle the most with implicit bias would be identified and followed by more specific research on this topic. Another objective of this project was to research and hypothesize the role implicit bias in this specific population plays in student nurses' quality of care and identify methods to circumvent this. Lastly, the project aimed to develop strategies to supplement education, specifically at RIC, at the student nurse level to identify implicit bias and actively work to promote culturally competent care.

Methodology

Study Design

This study used a mixed method design using voluntary response sampling of nursing students at Rhode Island College (RIC). This study included one of three Implicit Association Tests (IAT) which were randomly distributed to the participant and allowed for quantitative analysis through d-scores, and a section of questions following the respective IAT for qualitative analysis. Credit is given to Project Implicit for the use of the weight, age, and mental illness IATs along with their respective questions regarding explicit beliefs on these topics. These resources are open to the public and do not require permissions to be used for educational purposes.**Recruitment**

Nursing and nursing intended students were recruited to participate in this project using flyers and email. A copy of the flyer and recruitment script can be referenced in the Appendices A and B. Flyers were hung around the Rhode Island College campus, specifically in the nursing and science buildings. Emails were sent with permission from the Director of the BSN Program and Associate Dean for the School of Nursing (SON) via the administrative assistant of the SON. The administrative assistant with guidance from the researcher sent out the recruitment email to all nursing and nursing intended students on three separate occasions over the time period of October 2019 - December 2019.

Procedure

An incentive was given to students who chose to participate in the research. Students who completed the survey in its entirety were eligible to be entered in a randomized raffle drawing where they had the chance to win one of (4) $50 Amazon Gift Cards or (2) $50 Student Nurse Association (SNA) Vouchers. Money to purchase these incentives was awarded through the Rhode Island College Anne & Bob De Stefano Undergraduate Research Fund. The researcher applied to this program and received $300 to purchase the gift cards. Participants had the option of entering the raffle at the end of the survey. Once completed they checked off “Yes” or “No” when asked if they wanted to be entered in this raffle. If “Yes” was chosen they were redirected to a separate form that asked for their student identification number, email, and phone number. This information would be used to contact the winners of the raffle. This additional form was separate from the original research to maintain the privacy of their data from their entry into the raffle.

For students who chose to participate, they were encouraged to click on the link listed in the email or type it into their browser after reading the flyer. The researcher used the service, TinyURL in order to create a link that was easy for students to type into a browser and memorable enough to share with others. This service changes the URL from a long jumble of numbers and letters to a word or phrase after the TinyURL domain. For this study the following link was created to access the survey https://tinyurl.com/ricimplicitbias. The researcher was unable to use methods such as a QR code or mobile advertising as participants need to have access to have a PC or device with a laptop in order to complete the survey. Once participants clicked on the link, they were redirected to a Qualtrics survey in which the first question was a consent document. The consent document can be referenced in Appendix C. If students tried to access this survey from a mobile device, Qualtrics software was able to detect this and gave the participant an error message that stated,

> The survey software has detected that you are attempting to take this survey from an incompatible device. The survey contains questions that will only function correctly on a computer with a keyboard. Please open this survey from a computer with a keyboard.

After reading the consent document participants were given two choices, “I consent, begin the study” or “I do not consent, I do not wish to participate”. If the participant clicked “I consent, begin the study” they were randomly redirected to one of three IATs on either weight, age, or mental illness. If the participant clicked “I do not consent, I do not wish to participate” they were redirected to an automated “End of Survey” message. Student responses were collected from 10/28/19 until 12/22/19. All survey responses were anonymous, and this study was approved by the Institutional Review Board at Rhode Island College (Appendix D).

To complete the survey, students were first tasked with completing the respective IAT in which they were randomly assigned. Images defining the variables for each IAT can be referenced in Appendices E through G. Upon completion of the survey, students were asked to complete 10-15 questions, dependent on which topic they were randomly assigned, regarding their explicit beliefs on the respective topic. A copy of these questions can be referenced in the Appendices H through J. Participants were then asked some standard demographic questions, including sex, gender identity, age, ethnicity, and their current level in the nursing program. These questions can be referenced in Appendix K. For the current level in the nursing program, students were able to choose, Nursing Intended Major (IM), 1st Semester, 2nd Semester, 3rd Semester, 4th Semester, 5th Semester, 6th Semester, and 7+ Semester. The researcher found this selection appropriate compared to the standard, Freshman, Sophomore, Junior, Senior, as RIC has many non-traditional students who don't fit into those standard labels. Finally, after completion of the IAT, explicit belief questions, and demographics, students were then able to choose whether to participate in the randomized drawing to win a gift card/voucher. Students thencompleted their participation in the research and received an "End of Survey" message and a brief thank you.

Results

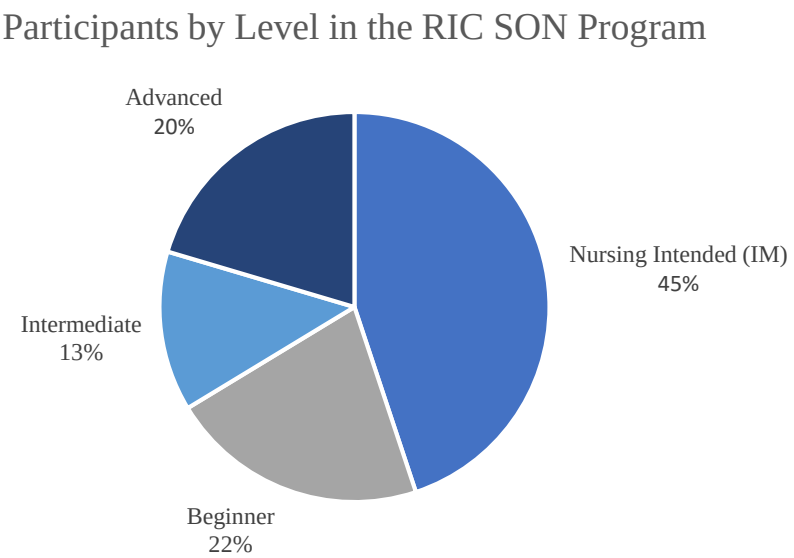
Participants

The sample was drawn from undergraduate Nursing and Nursing intended students at Rhode Island College. Nursing intended students are those at the college who are currently completing prerequisite classes in order to apply for the RIC SON. These students are often first year students but can be anywhere in their education at Rhode Island College. They were

included in this study as they are a group that has yet to receive specific education on nursing and the researcher sought to determine if they demonstrated any significant amount of implicit bias comparatively to current nursing students in the RIC SON program. A voluntary response sample was recruited including n=132 students. This constitutes 11.7% of 1,128 students eligible to participate (Appendix L). Of these students, n=98 completed the test entirely (completion rate of 74.2%). Participants who only partially competed the survey were not included in all further analyses, causing a variance in sample size. Of the students who completed the survey in its entirety 44 (44.9%) were Nursing Intended Major (IM) students. The rest of the students are described by level in the program. Beginner are 1st and 2nd semester nursing students, Intermediate are 3rd and 4th semester nursing students, and Advanced are 5th, 6th, and 7+ semester nursing students. The rest of the sample included 21 (21.4%) Beginner students, 13 (13.3%) Intermediate students, and 20 (20.4%) Advanced students (Figure 5).

Figure 5

Participants by Level in the RIC SON Program Pie Chart.



44 of 652 possible IM's participated in the survey which lead to a 6.74% response rate, but specific data on population size of nursing students per semester was unavailable. Overall response rate based on the available population of 476 nursing students was 11.3%. These two population sizes for nursing intended and current students in the nursing program are representative to populations in past years.

Figure 6

Table Containing Response Frequency and Rate of Biological Sex.

What sex were you assigned at birth, on your original birth certificate?

	Frequency	**Percent**
Female	88	89.8%
Male	10	10.2%
Total	98	100%

A breakdown of the biological sex of participants included 88 female students, and 10 male students. Females make up 89.8% of total IM's and 87.4% of total nursing students in the program at RIC (Appendix L). Males make up 10.1% of total IM's and 12.6% of total nursing students in the program. This survey yielded a similar percentage of female and male participants compared to the current population of students at Rhode Island College (Figure 6).

Figure 7

Table Containing Response Frequency and Rate of Age.

What is your age?

	Frequency	Percent
18-24 years old	79	80.6%
25-34 years old	12	12.2%
35-44 years old	3	3.1%
45-54 years old	3	3.1%
55-64 years old	1	1.0%
Total	98	100%

The age of the participants also follows demographics in the RIC SON as identified in Appendix L. Younger students ages 18-24 years old make up the majority of nursing and nursing intended students at RIC, 67.2% and 77.9% respectively. This trend is also seen in the data as 80.6% of participants were in the 18-24 years old range. Students aged 25-34 years old make up 18.7% of nursing and nursing intended students at RIC, and comparably make up 12.2% of the sample. Students ages 35 years and older are 7.9% of nursing and IM's, and these results yielded 7.2% of these students. Overall, the age of participants was comparably distributed as seen in current Rhode Island College students. **Figure 8**

Table Containing Response Frequency and Rate of Ethnicity

Please specify your ethnicity

	Frequency	Percent
Asian/Pacific Islander	3	3.1%
Black or African American	7	7.1%
Hispanic or LatinX	18	18.4%
Other	2	2.0%
White	68	69.4%
Total	98	100%

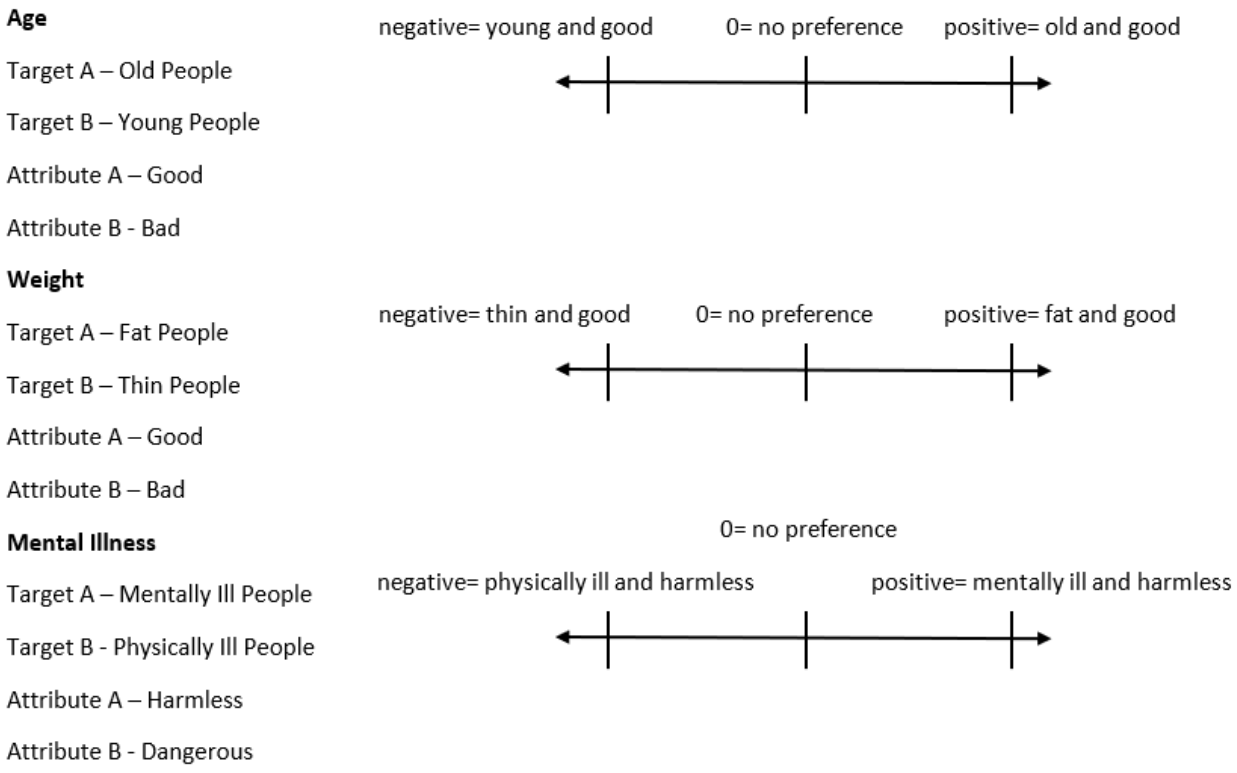
The identified ethnicity of participants was also representative of nursing and nursing intended majors at RIC. Students who identify as white make up 53.3% of nursing and nursing intended students. Rhode Island College nursing and nursing intended students are comprised of 3% Asian, 13.9% Black or African American, and 22.4% Hispanic or LatinX students. Participants who selected 'Other' self-described their ethnicity as 'Eastern European' and 'African'. These results yielded a similar composition, as Hispanic or LatinX students are the second largest group, followed by Black or African American, and then Asian/Pacific Islander.

IAT Results

The results of an Implicit Association Test are interpreted through d-scores. D-scores are measures of association between concepts and in this study can range from -1.5 to 1.5. These scores are considered stronger the further from zero a number is. A score of zero would be considered "unbiased" or lacking an association towards either concept. Figure 9 below illustrates the concept of d-scores. Scores are interpreted the same way for all IATs, but the results are dependent on what the researcher defines as Target A and Target B. A positive score indicates an association of target A with attribute A and target B with attribute B. A negative score indicates an association of target A with attribute B and target B with attribute A.

Figure 9

Visual Interpretation of d-Scores



For example, if a participant scored -0.584 on the Age IAT this would indicate a moderate association of young people with positive or 'good' words. It can then be inferred that this positive bias towards young people can cause a negative bias towards the opposite target, in this case old people.**Age IAT results.**

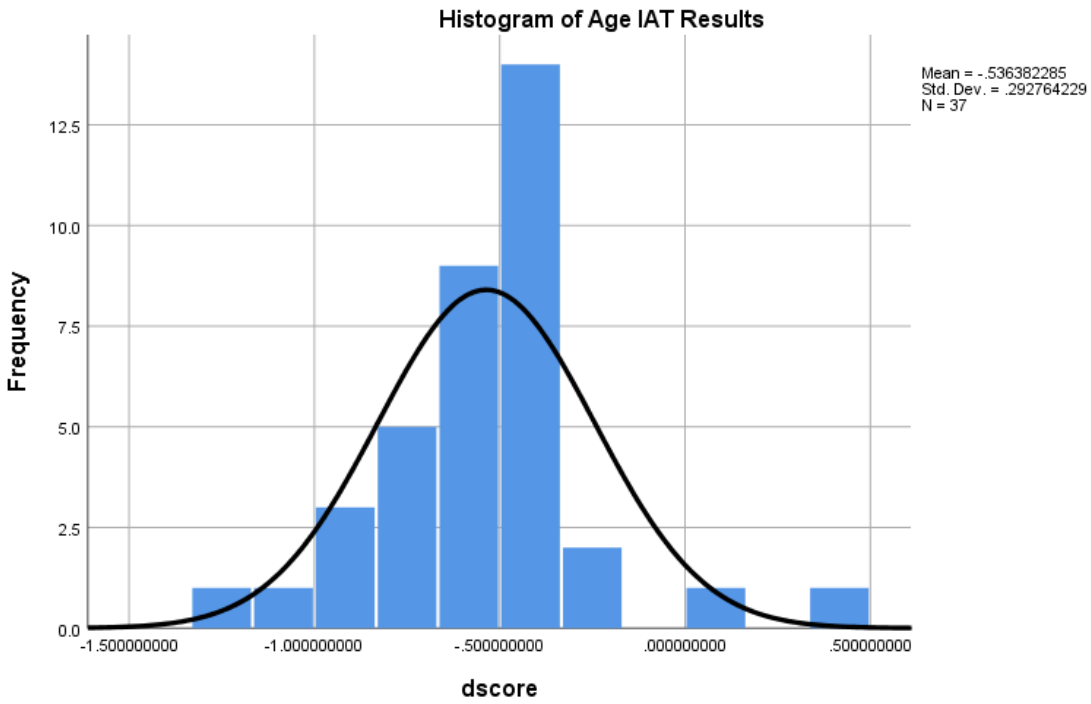
52 participants attempted to complete the Age IAT, but only 37 completed it in its entirety. 3 of the 15 missing pieces of data were dropped due to excessive speed, and the rest included incomplete data sets. Figure 10 includes a table with an overview of the data and a histogram outlining the overall trend. The minimum in this data set is the lowest, or most extreme, data point compared to the weight and mental illness IAT. Looking at the histogram

most of the data is centered around the -0.500 mark which is evidenced as the mean of this data is -0.536. The standard deviation is also the lowest in this data set compared to the other two IATs. These results indicate a mostly moderate preference for younger people with positive attributes.

Figure 10

Table and Associated Histogram Containing Results of Age IAT

Age Data Set		
d-score	Valid	37
	Missing	15
Mean		-0.536
Std. Deviation		0.293
Minimum		-1.270
Maximum		0.374



Weight IAT results.

41 participants attempted to complete the Weight IAT, but only 34 completed it in its entirety. 4 of the 7 missing pieces of data were dropped due to excessive speed, and the rest included incomplete data sets. Figure 11 includes a table with an overview of the data and a histogram outlining the overall trend. The mean of this data is lower than that of the Age IAT results and this is also evidenced in the histogram as more of the data is centered between 0.000 and -0.500 comparatively. These results indicate a slight to moderate preference for thin people with positive attributes. **Figure 11**

Table and Associated Histogram Containing Results of Weight IAT

Weight Data Set		
d-score	Valid	34
	Missing	7
Mean		-0.523
Std. Deviation		0.361
Minimum		-1.263
Maximum		0.501

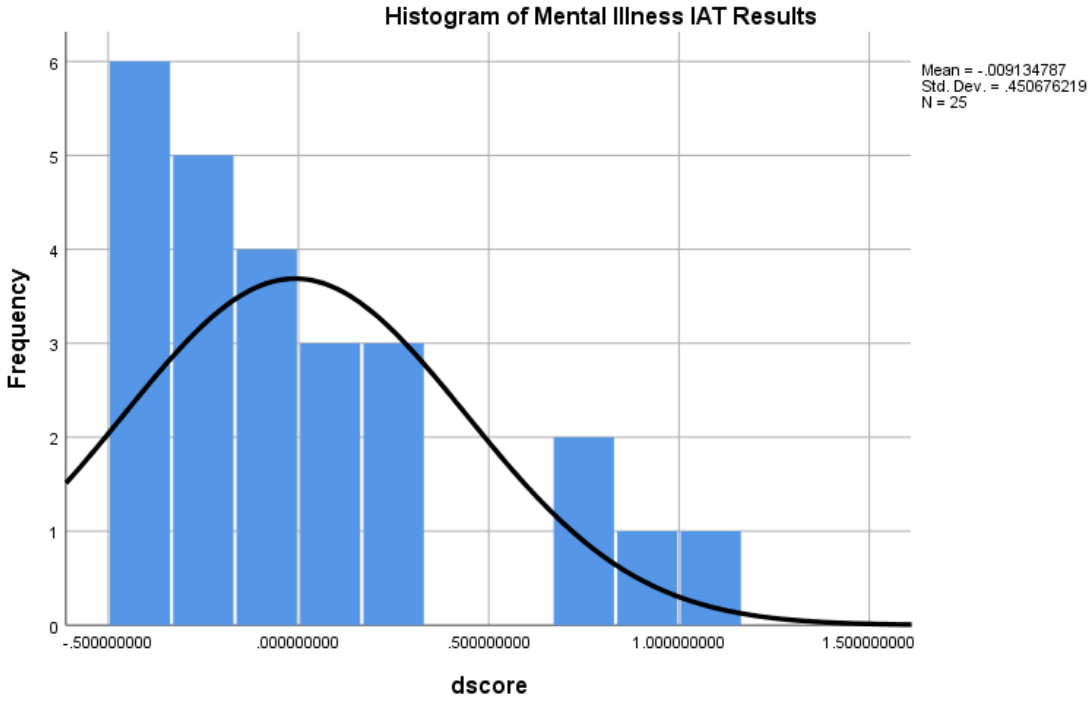
Mental Illness IAT results.

39 participants attempted to complete the Mental Illness IAT, but only 25 completed it in its entirety. All the missing data included incomplete data sets. Figure 12 includes a table with an overview of the data and a histogram outlining the overall trend. The maximum is the highest data point compared to the age and weight IAT. Looking at the histogram most of the data is centered around the 0.000 to -0.500 mark. In this respective the data is similar to the Weight IAT d-scores, but in this case the minimum is -0.495, leaving all the data greater than -0.500. The mean for this data is also the lowest out of all three data sets at -0.009. The standard deviation of this data was also the highest of the three tests, meaning the data was the most spread out, which is evidenced by the two large groupings of data on both the negative and positive side. Overall, these results indicate a very slight preference for physically ill people with harmless attributes.

Figure 12

Table and Associated Histogram Containing Results of Mental Illness IAT

Mental Illness Data Set		
d-score	Valid	25
	Missing	14
Mean		-0.009
Std. Deviation		0.451
Minimum		-0.495
Maximum		1.052



IAT results combined.

Figure 13 is an overall analysis of d-scores from the Age, Weight and Mental Illness IAT combined. This includes all 98 participants who completed their respective IAT in its entirety and looks solely at their d-scores. Overall, the Weight and Age IATs both yielded similar means, at around -0.500, but the Mental Illness IAT mean was drastically lower at -0.009 which lowered the overall mean of all three data sets to -0.379. Therefore, the majority of participants who

completed this survey associated their respective target A with attribute A, specifically, young and good, thin and good, and physically ill and harmless.**Figure 13**

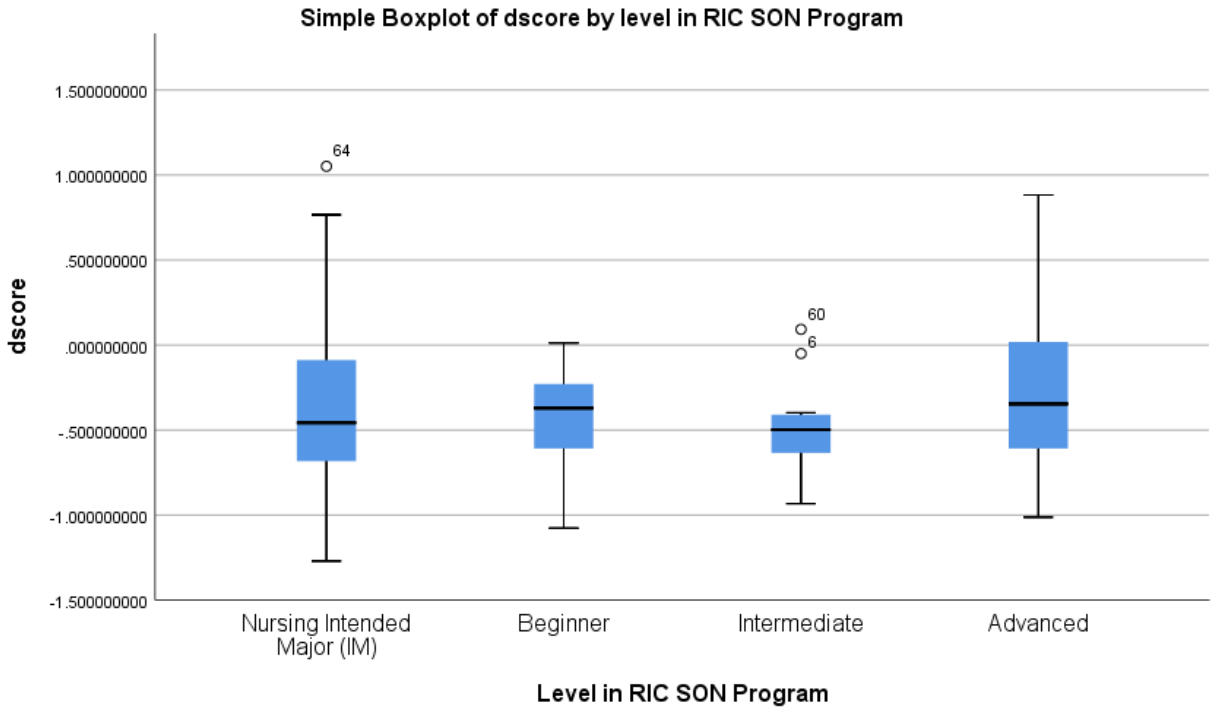
Table Containing Overall Data From Age, Weight, and Mental Illness IAT

Total Data Set		
d-score	Valid	98
	Missing	0
Mean		-0.379
Std. Deviation		0.435
Minimum		-1.270
Maximum		1.052

Figure 14 displays the overall combined d-score data of the Age, Weight, and Mental Illness IATs using participant level in the program. This chart is used to identify a correlation between a participants d-score and their level in the program in order to determine if more time in the program has increased or decreased this score. This chart shows no correlation between these two variables as the ranges sporadically differ and overall clumping of the data both shrinks and increases over time. It is also important to note that the sample size of each grouping of d-scores by level in the program varies as seen in Figure 5. This analysis was also run comparing d-score by gender and age. No correlation was found between any of the demographics and d-score.

Figure 14

Boxplot of d-Scores By Level in RIC SON Program



Discussion

Throughout the survey period 269 students clicked on the survey link and opened the consent document. As stated in the beginning of the results section, n=132 students participated and agreed to the consent document. A possible explanation for why a large group of students did not make it past the consent is the incompatibility with mobile devices. In terms of the sample sizes specific to each IAT, they were relatively equal, as students were randomly assigned into these samples by Qualtrics, and therefore inconsistencies were due to participant incompletion.

Overall, the quantitative data itself was not unexpected. As most of the participants fell in the categories of female and 18-24 years old this data follows researcher expectations. It is logical to

conclude that a sample with a majority of 18-24-year old students would have a preference for younger people. I would also speculate that the preference for thin vs fat people comes from diet culture that this age group has grown up in. As these participants have grown up being bombarded by weight loss ads, diet programs, and the media curating a focus on thin models and celebrities it makes sense that these young adults would have an inherent preference for thin people. This bias is even more true for females in US society as the media has focused on beauty as equal to a thin body type, selling young females on the idea that they need to be skinny in order to be beautiful. This is exactly how a concept like implicit bias is cumulated; children grow up having these concepts in every aspect of their life, watching commercials for weight loss, scrolling through social media campaigns for the next new diet fad, and being bullied when unable to attain weight standards set by society.

The results of the Mental Illness IAT were the most surprising in terms of results. As most participants only showed a slight bias against those with mental illness this goes against current known explicit bias. Mental Illness in current society faces strong explicit stigma, therefore, to see only a slight implicit bias was unexpected. This could possibly also be explained by the majority of 18-24-year old individuals as this generation has grown up with a greater sense of normalcy surrounding mental illness. This group was also specific to nursing or nursing intended students who have potentially received more education surrounding mental illness stigma and may have more inherent caring and less biased personalities.

Looking at the quantitative data regarding the Age IAT, this test showed the strongest associations compared to the Weight or Mental Illness IAT. These results were mainly surrounding -0.500 indicating a moderate preference for young people. It is interesting to note on

the qualitative side that when participants were asked, “Which statement best describes you”, 17 of 37 (45.9%) valid responses stated, “I like Young people and Old people equally”, further reinforcing the concept that students do not seek to be biased, or believe that they are biased, but still display moderate implicit bias.

The Weight IAT results fell in the middle of all three data sets in terms of strength of associations by d-score. As stated earlier most results fell in-between 0.000 to -0.500, resulting in a lower mean than the Age IAT. Qualitatively when participants were asked “Which statement best describes you?”, 20 of 36 (55.5%) valid responses stated, “I like Fat people and Thin people equally”, which is the same phenomenon as seen in the Age IAT. Another notable question asked participants, “How much control do people have over their weight?”, 24 of 34 (70.6%) of participants responded, “Some control”, 1 of 34 (2.9%) responded, “A little control”, 7 of 34 (20.6%) responded, “A lot of control” and 2 of 34 (5.9%) responded “Complete control”. This questions in intriguing because it asks individuals to consider if weight is something within someone’s control, and therefore does that change their perspective on it. People seem to pass less judgement when someone in less in control of a situation, versus when the person thinks they have complete control. Most respondents answered that people have “some control” over their weight, implying that it may not be completely a person’s choice if they are skinny or fat. On the opposite side, when asked “How much control do you have over you weight?” respondents who originally answered that others had some control then changed this answer to “a lot of control” or “complete control”. Participants seemed to consider their own weight to be more in their control than that of others.

The Mental Illness IAT had the weakest associations on both sides. When looking at the histogram for this data, the peak of the bell curve falls right around 0.000 showing a somewhat even distribution towards positive associations with both old people and young people. Interestingly this data set also has the most 'missing' or incomplete pieces of data. A possible speculation is that students began this IAT and decided not to complete it due to the topic. There could have been a potential fear of revealing a bias as this topic has such known explicit stigma. Regarding the valid explicit data, the questions were not the same as seen in the Weight and Age IAT, but still yielded similar results. When asked, "If I know a person has been a mental patient, I will be less likely to trust them", only 3 of 25 (12%) stated "Agree", and no one answered, "Strongly Agree". The rest of the responses included, 1 of 25 (4%) "Not sure, but probably agree", 6 of 25 (24%) "Not sure, but probably disagree", and 5 of 25 (20%) stated "Strongly disagree". These responses again exemplify that students are often not purposely biased, and may even believe they are unbiased, but still exhibit implicit bias.

In general, as Dobrowolska and Palese 2016 argued, students face reality shock in their care, and often experience a disconnect between their expectations and reality. Often this comes in the form of biases as students encounter new populations and different cultures. This is evident in this research as students often will explicitly state they are unbiased, but then yield implicit bias scores contradicting this. Students can be exposed to implicit bias through a test like the IAT but must have continuous education regarding implicit bias for it to be effective. While this research only skims the surface of implicit bias and its implications, it is a call to action for the field of nursing and other healthcare professions to not let implicit bias go unchecked. It must be addressed, and students must learn how their own biases can affect their care and the life around them.

Limitations

This study was mainly limited by the sample size of participants. Participants were from one college and one nursing program, Rhode Island College School of Nursing. RIC is often compromised of non-traditional students who are not always young adults out of high school. This population can both demonstrate a wide variety of students, but also complicates the study by adding varying differences in life or other higher education experiences. The researcher took this limitation into consideration at the beginning of the project, and that is why the main objective is not to conclude the exact bias of these students, but rather to call attention to a trend in implicit bias among nursing students. Data collection was also limited to a two-month period in order to accommodate the timeline to complete this project in the researcher's senior year. Compared to the population surveyed, data collection was still significant over the allotted time. Students were also only able to complete this survey on a laptop or PC which had a keyboard. Since this survey was not compatible with cell phones, it is a limitation in terms of how many students compromised the sample size. Students were unable to complete the survey unless on a PC or Laptop, which is less convenient than a mobile device. Upon conducting the literature review, there was a lack of intervention-based research for healthcare students regarding implicit bias. There are transferable interventions based on other research, but it lacks specificity in this regard.

Implications

Implications for Nursing Practice

The findings of this study indicate many implications for both nursing education and nursing practice. As this study focuses on students, the implications are focused on them as well. Students are the perfect candidates for implicit bias education as they are entering a crucial time in their lives. These individuals often experience new cultures, people, and places allowing them to explore a concept like bias. Their current experiences leading up to formal education shaped their biases both negative and positive, and this culmination is then thrown into completely new surroundings.

All of this considered, students often lack the necessary tools to combat their own biases. Bias recognition is key to student success in implicit bias education and students are usually completely unaware of this concept. Students may need the help of tools such as the IAT, their peers, mentors, or professors in order to help recognize their own bias. As Sukhera & Watling (2018) found, students need exposure to implicit bias and specifically an understanding of the science behind this concept. Without understanding how implicit bias is formed, students have no way of understanding it in themselves. It is also important to create a safe learning environment for students when talking about bias and stigma. These subjects can be very sensitive as students may talk about personal experiences which may make themselves or others feel exposed. Educators in this context need to create a space in which students can freely talk to each other about different experiences, letting students understand each other and the differences in their culture. Reasonable expectations must also be set (Sukhera & Watling, 2018). Students will not be able to completely erase their bias, or begin to be able to understand every patient they encounter in their care, but rather they will need to seek to further their education continuously, learning how to navigate difficult situations, and have an open mind.

Talking about the ramifications of implicit bias is crucial to both students and current professionals. Unchecked implicit bias can lead to unnecessary healthcare costs to the consumer and the provider, poor patient outcomes, and even death (Batsis & Zagaria 2018; Murphy & Gardner, 2016; Peris et al., 2008; Sutin et al., 2015). Therefore, individuals should try to understand how their experiences can lead to possible changes in their care. When discussing implicit bias specifically, it is also important to note how individuals are often not aware of the effects implicit bias has in their care as it stems from their unconscious. Thus, discussions and continuous education are vital to addressing implicit bias. Regarding current nurse education there is a sparing number of workshops, conferences, and other education tailored to implicit bias. This topic may be discussed in literature more frequently, but the real-world implementation is still tremendously lacking. Education for current professionals still needs the same concepts as discussed by Sukhera and Watling (2018), just in a different setting, and adapting for adult learners.

Although taking an Implicit Association Test may be revealing, it is not enough to combat implicit bias. Bias, no matter the form, explicit or implicit, is about lifelong learning. As students understanding on themselves, how they fit into their career, and how they contribute to society evolve, so does their understanding of their own implicit bias. Bias is shaped from our own experiences, so we must continuously put an effort into bias identification as it changes alongside these new experiences. Therefore, if we can give students the tools throughout their education to become self-aware, to talk about bias, and to address it, they can grow and work towards becoming more culturally competent in their profession.

For education on bias to be properly implemented into healthcare programs, institutions need to utilize a framework in which to structure this education. The researcher used a framework by Sukhera and Watling (2018) to model an example implementation into their institution of Rhode Island College, specifically the School of Nursing.

Figure 15

Chart depicting implicit bias education implementation

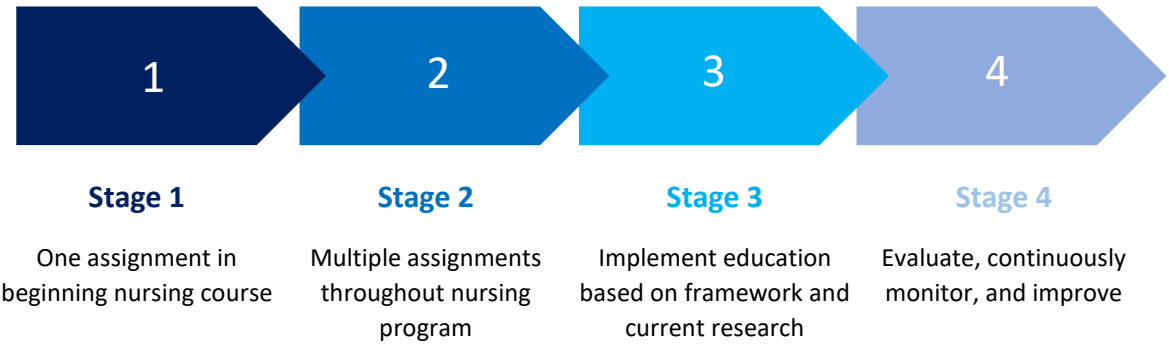


Figure 15 depicts a chart created by the author demonstrating a potential example of implicit bias education implementation. Starting in Stage 1, programs would take their first step into implicit bias education with a realistic goal of one assignment into a beginning level nursing course. In the case of Rhode Island College this course would be Nursing 222 Introduction to Professional Nursing. This course covers a variety of topics that would be able to seamlessly implement an assignment into the curriculum regarding implicit bias. This proposed assignment would include having students take one IAT of their choice regarding social attitudes, such as age, race, gender, sexual orientation, and others. The next step of this assignment would be to have students write a reflection on this experience, how they scored, what they expected, and

how it made them feel. The final step would be to bring these reflections to class and have a guided debrief where the professor acts as a moderator, curating a nonthreatening environment, and encouraging students to engage with each other about their feelings on the validity of the test, and how this could effect their care of patients in the future.

Stage 2 of this chart illustrates the importance of repetition and continuity regarding implicit bias education. Research has shown that students need continuous education and implementing just one assignment can act as a catalyst but will not guarantee student success in implicit bias recognition. Implementation of these assignments must also be strategic. Regarding Rhode Island College, this stage could be implemented into each level of the program for a nursing student, beginner, intermediate, and advanced. The beginner level would fall under the example as described above. For intermediate students, a similar assignment could be implemented into Nursing 340 Psychiatric/Mental Health Nursing. This course presents populations that students have often never encountered, and the topic of mental illness often faces a lot of explicit stigma. This assignment would be based off the initial assignment but have students reflect on the past and present experience of taking an IAT and now bring experiences from clinical to the discussion. It would also be important to have this done with clinical groups as they are smaller and more intimate. This would also be done towards the end of the semester in order to allow the preceptor time to watch the students and give feedback about their current patient care and interactions. It could also be up to the preceptor to make additions to the assignment and add in other activities to talk about identity and bias. Lastly, the advanced students would then again repeat this process in one of their final courses, Nursing 370 Public and Community Health Nursing. This class engages students in areas of the community not normally experienced in a hospital or nursing home. This again is another context for students to

experience new places and populations, but also with four semesters of clinical experience behind them. Community Nursing appropriately discusses diverse populations, and more sensitive topics such as Intimate Partner Violence and Homelessness. This class would also be a perfect opportunity for students to discuss their future careers in a more realistic sense as they are just about to become nurses, while still following the previous structure laid out.

Stage 3 takes the one process one step further and asks institutions to stay updated with current research and practice. It involves going beyond multiple assignments in nursing courses and requires implicit bias recognition to fit seamlessly throughout the curriculum. Examples implementation can include questions asked in a simulation about homelessness, or in discussing a case study where the client is obese. Educators should prompt students to critically think about how someone's identity or identities may play a role in their care. It is imperative for students to understand the omnipresence of identity and its intersections. Frameworks such as Sukhera and Watling's (2018) are a perfect example of using updated research in order to best implement education at individualized institutions. Not every nursing program will be able to adapt to one example of implicit bias education, so it is imperative to identify broad frameworks in which institutions can curate their education to fit the needs of their students.

Lastly is evaluation of the process. While it is a tremendous step for an institution to be able to implement bias recognition throughout their curriculum it holds little value when it is not evaluated and updated. As research and our understanding on unconscious cognition and implicit bias continues to evolve, so should our education on this concept.

Implications for Further Research

The findings of this study also reveal many implications for future research. Upon conducting the literature review there was a severe lack of research that analyzed the impact of interventions on implicit bias in healthcare students. The research that did look at interventions also significantly lacked diversity in the types of students, as the focus was on medical students. Research mentioned earlier by Yılmaz and Yabanci Ayhan (2019) compared different healthcare students and described how crucial education for nurses on implicit bias was as they observed the most interactions between nurses and their patients throughout their study. It is also imperative to analyze the effectiveness of interventions for implicit bias as the continuation of identifying bias without an intervention does nothing to decrease implicit bias.

It would also be interesting to note if a researcher took the diversity and inclusivity of the campus the student population being analyzed was comprised of and compared this to collected results. Alongside this data, researchers could note if students were residents or commuters. The author hypothesizes that resident students have different college experiences than that of a commuter student. Resident students often live with new people from a wide spectrum of cultural backgrounds with whom they share new experiences, both positive and negative. Commuter students often live at home with the individuals they were raised around and continue to experience this same culture they grew up around while receiving their education. These contrasting experiences can also shape how student bias will be affected. For example, a resident student might be able to adapt to a new clinical experience quicker than a commuter student as they've had more unfamiliar experiences throughout living on campus comparatively.

Researchers also need to analyze implicit bias regarding topics in which bias is often normalized such as age. These topics are often overlooked as stigma surrounding other concepts

seems more ‘pressing’ to researchers. It is also important to continue to address topics such as race and ethnicity in which explicit stigma is widely known, but often gets dismissed as having been ‘fixed’ or addressed in society already. The harsh reality is that all of society has a lot of work to do regarding most forms of bias and increasing awareness of unconscious cognition along with its ramifications when unchecked is crucial to stopping this cycle.

The author would also recommend that future research focus the sample to one IAT, or one form of bias as analyzing three concepts, in this example age, weight, and mental illness, fragmented the data and caused smaller sample sizes within the overall sample. Subsequently it was harder to form conclusions based on the data and find overall trends. The researcher also hypothesized if the sample would have been larger if the IAT had been compatible with mobile devices. Students are often in the 18-24-year-old range, as seen in this data, and are much more likely to complete a survey if given the option to complete it on their mobile device. It is quicker, more convenient, and could also yield quicker reaction times. It would be interesting to note if since the younger generation of students have grown up using mobile devices, if their reaction times are quicker on a touch screen, rather than a keyboard. This could hypothetically yield less biased data as students are able to have quicker and more accurate reaction times as the device used is more familiar to them. For this to be possible software would need to be developed in order to create a mobile friendly version of the Implicit Association Test. Researchers would also then need to account for if older people took the IAT on a mobile device their reaction times may be longer.

Conclusion

The results of this study indicate the need for further implicit bias education in healthcare students. As this study focused on nursing students, the author emphasizes an increased need for implicit bias education specifically for nursing students. These results indicate that implicit bias is present in student nurses even when students self-report as unbiased. In order to properly address implicit bias, it must be identified. Therefore, students need guidance and tools in order to identify and then combat their unknown unconscious bias. Bias is a cycle that starts with younger generations, consequently if students are not encouraged to provide culturally competent care, this cycle will only continue. Therefore, we must break the cycle in the beginning, and use education as a tool to fight stigma and bias.

Individuals in healthcare are trained to provide culturally competent care, free of judgement and bias. Therefore, patients should expect to receive an equal and fair standard of care regardless of race, sexual orientation, appearance, or any other identity. Healthcare students expect to provide unbiased care, but often they are faced with 'reality shock' (Dobrowolska & Palese 2016). These students face a disconnect between how they expect to care for patients, and their clinical experience. This concept is often exhibited through implicit bias. Students set an expectation of their care through their explicit beliefs, but when faced with new experiences, still exhibit implicit bias. Students need direction towards self-identification of their own bias and an understanding of how to combat it. As FitzGerald & Hurst (2017) found, it is crucial for students to find any disparities between their expectations of cultural competency and their actions in the clinical setting. Students are not the only candidates for implicit bias education, but current professionals as well can benefit greatly. Bias mitigation is a lifelong process and self-reflection along with identification of one's own biases are skills anyone can use to promote equitable care, both in the workplace and everyday life. It is the hope that we can prepare students in the

beginning of their careers to feel confident in their ability to provide unbiased care, and therefore create a new cycle of open-minded, self-reflective, and caring healthcare professionals.

All things considered, implicit bias is not something we are ever going to get rid of, nor are we going to change the population in a matter of weeks. Reducing implicit bias will take dedication to furthering one's own self-awareness and desire to learn. However, if healthcare educators take steps to address implicit bias, this can act as a catalyst to increase awareness of implicit bias and make students more consciousness of how they interact with the world around them and prevent negative experiences and outcomes with their patients in the future.

Acknowledgements

Rhode Island College School of Nursing

Faculty Advisor Karen Hetzel

Iatgen (IAT's in Qualtrics)

Project Implicit

DeStefano Undergraduate Research Fund

RIC SON Deans Fund

Dr. Christopher Hourigan

Dr. Eric Hall

References

Alberga, A. S., Russell-Mayhew, S., von Ranson, K. M., & McLaren, L. (2016). Weight bias: a call to action. *Journal of eating disorders*, 4, 34. https://doi.org/10.1186/s40337-016-0112-4

Allport, G. W. (1935). Attitudes. In C. Murchison (Ed.), *A handbook of social psychology (*p. 798-844). Worcester, MA: Clark University Press

Batsis, J. A., & Zagaria, A. B. (2018). Addressing Obesity in Aging Patients. *The Medical clinics of North America*, 102(1), 65–85. https://doi.org/10.1016/j.mcna.2017.08.007

Carpenter, T., Pogacar, R., Pullig, C., Kouril, M., Aguilar, S., LaBouff, J. P., Isenberg., N., & Chakroff, A. (in press). Survey-software Implicit Association Tests: A methodological and empirical analysis. Behavior Research Methods.

Center for Disease Control and Prevention (CDC). (2018, January 26). Learn About Mental Health . Retrieved from https://www.cdc.gov/mentalhealth/learn/index.htm

Center for Disease Control and Prevention (CDC). (2020, February 27). Adult Obesity Facts. Retrieved from https://www.cdc.gov/obesity/data/adult.html

Dobrowolska, B., Jędrzejkiewicz, B., Pilewska-Kozak, A., Zarzycka, D., Ślusarska, B., Deluga, A., … Palese, A. (2019). Age discrimination in healthcare institutions perceived by seniors and students. *Nursing Ethics*, 26(2), 443–459. https://doi.org/10.1177/0969733017718392

Dobrowolska, B., & Palese, A. (2016). The caring concept, its behaviours and obstacles: perceptions from a qualitative study of undergraduate nursing students. *Nursing Inquiry*, 23(4), 305–314. https://doi-org.ric.idm.oclc.org/10.1111/nin.12143

FitzGerald, C., & Hurst, S. (2017). Implicit bias in healthcare professionals: a systematic review.

BMC Medical Ethics, 18(1), 19. https://doi-org.ric.idm.oclc.org/10.1186/s12910-017-0179-8

Greenwald, A. G., & Banaji, M. R. (1995). Implicit Social Cognition: Attitudes, Self-Esteem, and Stereotypes. *Psychological Review*, 102(1), 4–27. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ504266&site=ehost-live

Greenwald, A. G., & Banaji, M. R. (2017). The implicit revolution: Reconceiving the relation between conscious and unconscious. *American Psychologist*, 72(9), 861–871. https://doi.org/10.1037/amp0000238

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology*, 74(6), 1464–1480. https://doi.org/10.1037/0022-3514.74.6.1464

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). "Understanding and using the Implicit Association Test: I An improved scoring algorithm": Correction to Greenwald et al (2003). *Journal of Personality and Social Psychology*, 85(3), 481. https://doi.org/10.1037/h0087889

Hofmann, W., Gawronski, B., Gschwendner, T., Le, H., & Schmitt, M. (2005). A Meta-Analysis on the Correlation Between the Implicit Association Test and Explicit Self-Report Measures. *Personality and Social Psychology Bulletin*, 31(10), 1369–1385. https://doi-org.ric.idm.oclc.org/10.1177/0146167205275613

Kagan, S. H., & Melendez-Torres, G. J. (2015). Ageism in nursing. Journal of Nursing Management, 23(5), 644–650. https://doi-org.ric.idm.oclc.org/10.1111/jonm.12191

The Kirwan Institute for the Study of Race and Ethnicity. (2015). Understanding Implicit Bias.

Retrieved from http://kirwaninstitute.osu.edu/research/understanding-implicit-bias/

Kopera, M., Suszek, H., Bonar, E., Myszka, M., Gmaj, B., Ilgen, M., & Wojnar, M. (2015). Evaluating explicit and implicit stigma of mental illness in mental health professionals and medical students. *Community Mental Health Journal*, 51(5), 628–634. https://doi-org.ric.idm.oclc.org/10.1007/s10597-014-9796-6

Maina, I. W., Belton, T. D., Ginzberg, S., Singh, A., & Johnson, T. J. (2018). A decade of studying implicit racial/ethnic bias in healthcare providers using the implicit association test. *Social Science & Medicine*, 199, 219–229. https://doi-org.ric.idm.oclc.org/10.1016/j.socscimed.2017.05.009

Murphy, A. L., & Gardner, D. M. (2016). A scoping review of weight bias by community pharmacists towards people with obesity and mental illness. *Canadian Pharmacists Journal: CPJ = Revue Des Pharmaciens Du Canada: RPC*, 149(4), 226–235. https://doi-org.ric.idm.oclc.org/10.1177/1715163516651242

Nash, P., Stuart-Hamilton, I., & Mayer, P. (2014). The Continuation of Prejudice: Addressing Negative Attitudes in Nurse Training and Continuing Professional Education. *Educational Gerontology*, 40(1), 53–60. https://doi-org.ric.idm.oclc.org/10.1080/03601277.2013.768084

Nelson, A. (2002). Unequal treatment: confronting racial and ethnic disparities in health care. *Journal of the National Medical Association*, 94(8), 666–668.

Peris, T. S., Teachman, B. A., & Nosek, B. A. (2008). Implicit and explicit stigma of mental illness: Links to clinical care. *Journal of Nervous and Mental Disease*, 196(10), 752–760. https://doi-org.ric.idm.oclc.org/10.1097/NMD.0b013e3181879dfd

Phelan, S. M., Dovidio, J. F., Puhl, R. M., Burgess, D. J., Nelson, D. B., Yeazel, M. W.,

Hardeman, R. , Perry, S. and Ryn, M. (2014), Implicit and explicit weight bias in a national sample of 4,732 medical students: The medical student CHANGES study. *Obesity*, 22: 1201-1208. doi:10.1002/oby.20687

Project Implicit. (2011). Retrieved from https://implicit.harvard.edu/implicit/iatdetails.html

Puhl, R., & Suh, Y. (2015). Health Consequences of Weight Stigma: Implications for Obesity Prevention and Treatment. *Current Obesity Reports*, 4(2), 182–190. https://doi-org.ric.idm.oclc.org/10.1007/s13679-015-0153-z

Sandhu, H. S., Arora, A., Brasch, J., & Streiner, D. L. (2019). Mental Health Stigma: Explicit and Implicit Attitudes of Canadian Undergraduate Students, Medical School Students, and Psychiatrists. *Canadian Journal Of Psychiatry*, 64(3), 209–217. https://doi-org.ric.idm.oclc.org/10.1177/0706743718792193

Stier, A., & Hinshaw, S. P. (2007). Explicit and implicit stigma against individuals with mental illness. *Australian Psychologist*, 42(2), 106–117. https://doi-org.ric.idm.oclc.org/10.1080/00050060701280599

Sukhera, J., & Watling, C. (2018). A Framework for Integrating Implicit Bias Recognition Into Health Professions Education. *Academic Medicine*, 93(1), 35–40. doi:10.1097/ACM.0000000000001819

Sukhera, J., Wodzinski, M., Rehman, M., & Gonzalez, C. M. (2019). The Implicit Association Test in health professions education: A meta-narrative review. *Perspectives on Medical Education*, 8(5), 267–275. https://doi-org.ric.idm.oclc.org/10.1007/s40037-019-00533-8

Sutin, A. R., Stephan, Y., & Terracciano, A. (2015). Weight Discrimination and Risk of Mortality. Psychological Science (0956-7976), 26(11), 1803–1811. https://doi-org.ric.idm.oclc.org/10.1177/0956797615601103

Waller, T., Lampman, C., & Lupfer, J. G. (2012). Assessing bias against overweight individuals among nursing and psychology students: An implicit association test. *Journal of Clinical Nursing*, 21(23–24), 3504–3512. https://doi-org.ric.idm.oclc.org/10.1111/j.1365-2702.2012.04226.x

World Health Organization (WHO) . (2001). World Health Report on Mental Disorders. Retrieved from https://www.who.int/whr/2001/media_centre/press_release/en/

World Health Organization (WHO). (2014, November 4). Global Strategy on Diet, Physical Activity and Health. Retrieved from https://www.who.int/dietphysicalactivity/childhood_what/en/

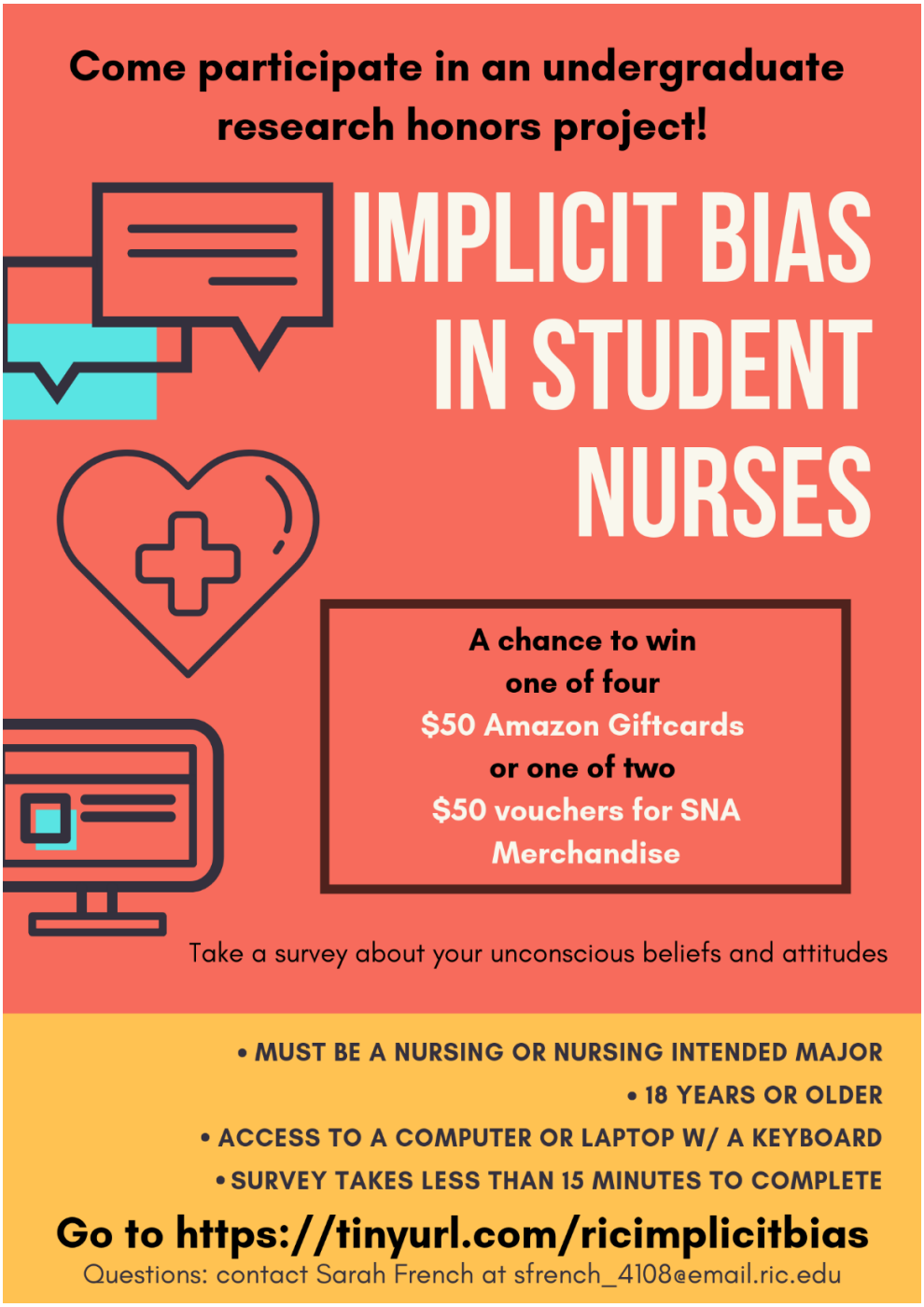
World Health Organization (WHO). (2018, February 5). Ageing and health. Retrieved from https://www.who.int/en/news-room/fact-sheets/detail/ageing-and-health

Wyman, M. F., Shiovitz-Ezra, S., & Bengel, J. (2018). Ageism in the Health Care System: Providers, Patients, and Systems. In Contemporary Perspectives on Ageism (Vol. 19). doi: https://doi.org/10.1007/978-3-319-73820-8_13

Yilmaz, H. Ö., & Yabanci Ayhan, N. (2019). Is there prejudice against obese persons among health professionals? A sample of student nurses and registered nurses. Perspectives in Psychiatric Care, 55(2), 262–268. https://doi-org.ric.idm.oclc.org/10.1111/ppc.12359

Appendix A

Recruitment Flyer



Appendix B

Recruitment Script

Dear Fellow Nursing and Nursing Intended Students,

My name is Sarah French, I am a senior in the RIC Nursing Program. I am inviting you to participate in my honors/research project on Implicit Bias in Student Nurses. Participation will take about 15 minutes and requires access to a computer with a keyboard. This study focuses on both conscious and unconscious attitudes we have on topics including, weight, age, and mental illness.

By completing this survey in its entirety, you will be eligible to enter a randomized raffle drawing where you have the chance to win one of (4) $50 Amazon Gift Cards or (2) $50 SNA Vouchers!

Click on this link to be directed to the survey: https://tinyurl.com/ricimplicitbias

If you have any questions feel free to email me at sfrench_4108@email.ric.edu.

Thank you and good luck in your studies this semester!

Sarah French

Appendix C

Email from RIC IRB with permissions for project

From: NoReply@TOPAZTI.net <NoReply@TOPAZTI.net>
Sent: Thursday, October 17, 2019 9:22:24 AM
To: Institutional Review Board - Rhode Island College <irb@ric.edu>; Hetzel, Karen D. <khetzel@ric.edu>
Subject: IRB: #1920-1871 (Hetzel, Karen) approved

Greetings,

The proposal for the project referenced below has been DETERMINED EXEMPT by the Institutional Review Board (IRB). THIS IS BECAUSE THE INFORMATION YOU ARE COLLECTING IS ANONOMOUS AND INVOLVES NO MORE THAN MINIMAL RISK. I DO THINK YOU SHOULD CONSIDER SOME DEBREIFING STATEMENT AT THE END OF THE IAT AS THE CONTENT MAY BE SEEN AS STIGMITAZING TOWARD SOME GROUPS. I WILL LEAVE THIS CHOICE TO YOU GIVEN THE PROPOSAL IS EXEMPT.

Project title: Implicit Bias in Student Nurses

Approval #: 1920-1871
Type of review: Exempt
Proposal type: Original
Principle Investigator: Hetzel, Karen
Fees received: 1. No fees -- RIC supervised or sponsored
Funding status:

Your proposal has been determined as Exempt by the IRB. As such, you do not need to submit any renewal applications for this project.
An exemption is not the same as approval. This protocol has been reviewed to ensure it meets the criteria for an exemption, but it has not been reviewed for approval. Investigators are encouraged to adhere to the same ethical standards of research for non-exempt research. References to the IRB status cannot say that it was approved, but must say that the study was determined to be Exempt from Continuing Review. Any changes to the scope or methods of your research may change its status and must be reviewed by the IRB before implementation.
Do not reply to this "RIC_Elements" email address because it will not be received by the IRB. Send all correspondence to IRB@ric.edu.

Best Regards,
Emily Cook, Ph.D.
Associate Professor
Chair, IRB
Rhode Island College
IRB@ric.edu

Appendix D

Consent Form

CONSENT DOCUMENT
Rhode Island College

Implicit Bias in Student Nurses

You are being asked to be in a research study about your conscious and unconscious beliefs. Participation in this study is voluntary and it is anticipated that you would be involved for about 15 minutes. You are being asked because you are part of the Rhode Island College Nursing Program or are an intended nursing major. Please read this form and ask any questions that you have before choosing whether to be in the study.

Sarah French, an undergraduate student in Nursing, is conducting this research in collaboration with the faculty advisor Dr. Karen Hetzel, the director of the undergraduate nursing program at RIC.

Why this Study is Being Done (Purpose)

We are doing this study to learn about implicit bias in Student Nurses, specifically at Rhode Island College. We specifically are looking at Implicit Bias in age, weight, and mental illness. Implicit Bias is the unconscious association of a negative attribute to a group or groups of people. It is bias we are not consciously aware of.

What You Will Have to Do (Procedures)

If you choose to be in the study, we will ask you to:

- First, you will take the Implicit Association Test. You will randomly be redirected to one of the 3 tests. You will either take the IAT on Weight, Age, or Mental Illness. in which you will be asked to sort pictures and words into groups as fast as you can. It is broken into 7 parts which randomize the words and will put negative and positive words on opposite sides, asking you to categorize them a certain way depending on the section. Follow the directions as the test continues. It should take about 10 minutes.
- Second, you'll read and answer some survey questions about your beliefs, attitudes, and opinions, and some standard demographic questions including your age, sex, gender identity, ethnicity, and where you are in the RIC Nursing Program. This will take no more than 5 minutes.

Risks or Discomforts

You may find that answering some questions is upsetting. We think it would be similar to the kinds of things you talk about with family and friends. You can stop the survey at any time. If you want to talk to

someone about your feelings or about problems that you're having, you can contact The Rhode Island College Counseling Center at 401-456-8094 which is free of charge to all RIC Students.

Benefits of Being in the Study

Being in this study will not benefit you directly.

You can choose to enter a drawing

As a way to thank you for your time if you complete the survey in its entirety you will be prompted whether or not you would like to enter a raffle. By selecting the "yes" answer you will be redirected to a separate form where you can sign up to be entered in a randomized drawing to win one of the 6 prizes. These include, 4 $50 Amazon Gift Cards, and 2 $50 SNA Vouchers. If you change your mind and want to stop the study, you are unable to enter the drawing.

Deciding Whether to Be in the Study

Being in the study is your choice to make. Nobody can force you to be in the study. You can choose not to be in the study, and nobody will hold it against you. You can change your mind and quit the study at any time, and you do not have to give a reason. If you decide to quit later, nobody will hold it against you.

How Your Information will be Protected

Because this is a research study, results will be summarized across all participants and shared in reports that we publish and presentations that we give. We will take several steps to protect the information you give us so that you cannot be identified. You are not asked to give your name or any identifying information on this survey, and the raffle piece of this is a completely different survey which allows your data to be separate from your entry in the raffle. The information will be kept on a secure server and seen only by myself and other researchers who work with me. Also, if there are problems with the study, the records may be viewed by the Rhode Island College review board responsible for protecting the rights and safety of people who participate in research. The information will be kept for a minimum of three years after the study is over, after which it will be destroyed.

Who to Contact

If you have any questions, you can contact Sarah French at sfrench_4108@email.ric.edu or 860-822-3491 or Dr. Karen Hetzel at khetzel@ric.edu or 401-456-9742.

If you think you were treated badly in this study, have complaints, or would like to talk to someone other than the researcher about your rights or safety as a research participant, please contact the IRB Chair at IRB@ric.edu.

You will can ask for a copy of this consent form by emailing sfrench_4108@email.ric.edu and one will be provided. You are also allowed to screenshot or take a picture of this page for your records.

Statement of Consent

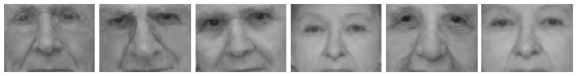
I have read and understand the information above. I am choosing to be in the study "*Implicit Bias in Student Nurses*". I can change my mind and quit at any time, and I don't have to give a reason. I have been given answers to the questions I asked, or I will contact the researcher with any questions that come up later. I am at least 18 years of age, a student in the RIC Nursing Program or a Nursing Intended Major, and I have access to a PC/Mac with a keyboard.

Appendix E

Image Containing Variables for Age IAT

Implicit Association Test

Next, you will use the 'E' and 'I' computer keys to categorize items into groups as fast as you can. These are the four groups and the items that belong to each:

Category	Items
Good	Adore, Friendship, Cheerful, Fabulous, Glorious, Celebrate, Terrific, Spectacular
Bad	Grief, Evil, Sickening, Awful, Pain, Yucky, Angry, Hatred
Old people	
Young people	

There are seven parts. The instructions change for each part. Pay attention!

Continue

Appendix F

Image Containing Variables for Weight IAT

Implicit Association Test

Next, you will use the 'E' and 'I' computer keys to categorize items into groups as fast as you can. These are the four groups and the items that belong to each:

Category	Items
Good	Magnificent, Triumph, Delight, Pleasing, Beautiful, Enjoy, Appealing, Lovely
Bad	Yucky, Disaster, Horrific, Gross, Failure, Nasty, Sadness, Evil
Fat People	
Thin People	

There are seven parts. The instructions change for each part. Pay attention!

Continue

Appendix G

Image Containing Variables for Mental Illness IAT

Instructions

Next, you will use the 'e' and 'i' computer keys to categorize items into groups as fast as you can. These are the four groups and the items that belong to each:

Category	Items
Mentally Ill People	Schizoprhenia, Bipolar Disorder, Depression, Obsessive Compulsive Disorder
Physically Ill people	Diabetes, Appendicitis, Cerebral palsy, Multiple Sclerosis
Dangerous	Dangerous, Unsafe, Violent, Aggressive
Harmless	Harmless, Safe, Peaceful, Gentle

There are seven parts. The instructions change for each part. Pay attention!

Continue

Appendix H

Age Survey Questions

Q1 Which statement best describes you?

- ○ I strongly prefer Young people to Old people (1)
- ○ I moderately prefer Young people to Old people (2)
- ○ I slightly prefer Young people to Old People (3)
- ○ I like Young people and Old people equally (4)
- ○ I slightly prefer Old people to Young people (5)
- ○ I moderately prefer Old people to Young people (6)
- ○ I strongly prefer Old people to Young people (7)

Q2 How warm or cold do you feel towards **Old people**?

- ○ 10 - Extremely warm (1)
- ○ 9 -Very warm (2)
- ○ 8 - Moderately Warm (3)
- ○ 7 - Somewhat warm (4)
- ○ 6 - Slightly warm (5)
- ○ 5 - Neither warm nor cold (6)
- ○ 4 - Slightly cold (7)
- ○ 3 - Somewhat cold (8)
- ○ 2 - Moderately cold (9)

- ○ 1 - Very cold (10)
- ○ 0 - Extremely cold (11)

Q3 How warm or cold do you feel towards **Young people**?

- ○ 10 - Extremely warm (1)
- ○ 9 - Very warm (2)
- ○ 8 - Moderately warm (3)
- ○ 7 - Somewhat warm (4)
- ○ 6 - Slightly warm (5)
- ○ 5 - Neither warm nor cold (6)
- ○ 4 - Slightly cold (7)
- ○ 3 - Somewhat cold (8)
- ○ 2 - Moderately cold (9)
- ○ 1 - Very cold (10)
- ○ 0 - Extremely cold (11)

Q4 The categories child, young adult, middle-aged, and old are commonly used to describe life stages. At what age do you believe that a person moves from one category to the next?

A person moves from being a **child** to being a **young adult** at what age?

▼ 1 (1) ... 115 (115)

Q5 The categories child, young adult, middle-aged, and old are commonly used to describe life stages. At what age do you believe that a person moves from one category to the next?

A person moves from being a **young adult** to an **adult** at what age?

▼ 1 (1) ... 115 (115)

Q6 The categories child, young adult, middle-aged, and old are commonly used to describe life stages. At what age do you believe that a person moves from one category to the next?

A person moves from being an **adult** to **middle-aged** at what age?

▼ 1 (1) ... 115 (115)

Q7 The categories child, young adult, middle-aged, and old are commonly used to describe life stages. At what age do you believe that a person moves from one category to the next?

A person moves from being **middle-aged** to an **old** at what age?

▼ 1 (1) ... 115 (115)

Q8 How old do you feel?

▼ 1 (1) ... 115 (115)

Q9 To what age do you hope to live?

▼ 1 (1) ... 115 (115)

Q10 On average, how old do other people think you are?

▼ 1 (1) ... 115 (115)

Q11 If you could choose, what age would you be?

▼ 1 (1) ... 115 (115)

Appendix I

Weight Survey Questions

Q1 How warm or cold do you feel towards **fat people**?

- 10 - Extremely warm (1)
- 9 -Very warm (2)
- 8 - Moderately Warm (3)
- 7 - Somewhat warm (4)
- 6 - Slightly warm (5)
- 5 - Neither warm nor cold (6)
- 4 - Slightly cold (7)
- 3 - Somewhat cold (8)
- 2 - Moderately cold (9)
- 1 - Very cold (10)
- 0 - Extremely cold (11)

Q2 How warm or cold do you feel towards **thin people**?

- 10 - Extremely warm (1)
- 9 - Very warm (2)
- 8 - Moderately warm (3)
- 7 - Somewhat warm (4)
- 6 - Slightly warm (5)

- ○ 5 - Neither warm nor cold (6)
- ○ 4 - Slightly cold (7)
- ○ 3 - Somewhat cold (8)
- ○ 2 - Moderately cold (9)
- ○ 1 - Very cold (10)
- ○ 0 - Extremely cold (11)

Q3 Which statement best describes you?

- ○ I strongly prefer Fat people to Thin people (1)
- ○ I moderately prefer Fat people to Thin people (2)
- ○ I slightly prefer Fat people to Thin People (3)
- ○ I like Fat people and Thin people equally (4)
- ○ I slightly prefer Thin people to Fat people (5)
- ○ I moderately prefer Thin people to Fat people (6)
- ○ I strongly prefer Thin people to Fat people (7)

Q4 Please indicate your weight by selecting the most accurate option.

▼ below 50lb: : below 23 kg (1) ... above 440 lb : : above 200kg (81)

Q5 Please indicate your height by selecting the most accurate option

- [ ] below 3 ft 0 in : : below 91 cm (1)
- [ ] 3 ft 0 in : : 91 cm (2)
- [ ] 3 ft 1 in : : 94 cm (3)
- [ ] 3 ft 2 in : : 97 cm (4)
- [ ] 3 ft 3 in : : 99 cm (5)
- [ ] 3 ft 4 in : : 102 cm (6)
- [ ] 3 ft 5 in : : 104 cm (7)
- [ ] 3 ft 6 in : : 107 cm (8)
- [ ] 3 ft 7 in : : 109 cm (9)
- [ ] 3 ft 8 in : : 112 cm (10)
- [ ] 3 ft 9 in : : 114 cm (11)
- [ ] 3 ft 10 in : : 117 cm (12)
- [ ] 3 ft 11 in : : 119 cm (13)
- [ ] 4 ft 0 in : : 122 cm (14)
- [ ] 4 ft 1 in : : 124 cm (15)
- [ ] 4 ft 2 in : : 127 cm (16)

- [ ] 4 ft 3 in : : 130 cm (17)
- [ ] 4 ft 4 in : : 132 cm (18)
- [ ] 4 ft 5 in : : 135 cm (19)
- [ ] 4 ft 6 in : : 137 cm (20)
- [ ] 4 ft 7 in : : 140 cm (21)
- [ ] 4 ft 8 in : : 142 cm (22)
- [ ] 4 ft 9 in : : 145 cm (23)
- [ ] 4 ft 10 in : : 147 cm (24)
- [ ] 4 ft 11 in : : 150 cm (25)
- [ ] 5 ft 0 in : : 152 cm (26)
- [ ] 5 ft 1 in : : 155 cm (27)
- [ ] 5 ft 2 in : : 157 cm (28)
- [ ] 5 ft 3 in : : 160 cm (29)
- [ ] 5 ft 4 in : : 162 cm (30)
- [ ] 5 ft 5 in : : 165 cm (31)
- [ ] 5 ft 6 in : : 168 cm (32)
- [ ] 5 ft 7 in : : 170 cm (33)

- [ ] 5 ft 8 in : : 173 cm (34)
- [ ] 5 ft 9 in : : 175 cm (35)
- [ ] 5 ft 10 in : : 178 cm (36)
- [ ] 5 ft 11 in : : 180 cm (37)
- [ ] 6 ft 0 in : : 183 cm (38)
- [ ] 6 ft 1 in : : 185 cm (39)
- [ ] 6 ft 2 in : : 188 cm (40)
- [ ] 6 ft 3 in : : 191 cm (41)
- [ ] 6 ft 4 in : : 193 cm (42)
- [ ] 6 ft 5 in : : 196 cm (43)
- [ ] 6 ft 6 in : : 198 cm (44)
- [ ] 6 ft 7 in : : 201 cm (45)
- [ ] 6 ft 8 in : : 203 cm (46)
- [ ] 6 ft 9 in : : 206 cm (47)
- [ ] 6 ft 10 in : : 208 cm (48)
- [ ] 6 ft 11 in : : 211 cm (49)
- [ ] 7 ft 0 in : : 213 cm (50)

☐ above 7 ft 0 in : : above 213 cm (51)

Q6 How much control do you have over your weight?

- ○ Complete control (1)
- ○ A lot of control (2)
- ○ Some control (3)
- ○ A little control (4)
- ○ No control (5)

Q7 Do most people prefer Fat people or Thin people

- ○ Most people strongly prefer Fat people to Thin people (1)
- ○ Most people somewhat prefer Fat people to Thin people (2)
- ○ Most people slightly prefer Fat people to Thin people (3)
- ○ Most people like Fat people and Thin people equally (4)
- ○ Most people slightly prefer Thin people to Fat people (5)
- ○ Most people somewhat prefer Thin people to Fat people (6)
- ○ Most people strongly prefer Thin people to Fat people (7)

Q8 How easy or difficult would it be for you to lose 5 to 10 pounds if you wanted to?

- ○ Very easy (1)
- ○ Moderately easy (2)
- ○ Somewhat easy (3)

- ○ Somewhat difficult (4)
- ○ Moderately difficult (5)
- ○ Very difficult (6)

Q9 How much control do people have over their weight?

- ○ Complete control (1)
- ○ A lot of control (2)
- ○ Some control (3)
- ○ A little control (4)
- ○ No control (5)

Q10 Other people would say that I am:

- ○ Very underweight (1)
- ○ Moderately underweight (2)
- ○ Slightly underweight (3)
- ○ Neither underweight nor overweight (4)
- ○ Slightly overweight (5)
- ○ Moderately overweight (6)
- ○ Very overweight (7)

Q11 How much do you feel similar to people who are fat?

- ○ Not at all similar (1)
- ○ Somewhat similar (2)
- ○ Moderately similar (3)
- ○ Very similar (4)
- ○ Extremely similar (5)

Q12 How much do you feel similar to people who are thin?

- ○ Not at all similar (1)
- ○ Somewhat similar (2)
- ○ Moderately similar (3)
- ○ Very similar (4)
- ○ Extremely similar (5)

Q13 Compared to most people I interact with, I am:

- ○ Much thinner (1)
- ○ Moderately thinner (2)
- ○ Slightly thinner (3)
- ○ About the same (4)
- ○ Slightly fatter (5)
- ○ Moderately fatter (6)
- ○ Much fatter (7)

Q14 Currently, I am:

- ○ Very underweight (1)
- ○ Moderately underweight (2)
- ○ Slightly underweight (3)
- ○ Neither underweight nor overweight (4)
- ○ Slightly overweight (5)
- ○ Moderately overweight (6)
- ○ Very overweight (7)

Q15 How important is your weight to your sense of who you are?

- ○ Not at all important (1)
- ○ Slightly important (2)
- ○ Moderately important (3)
- ○ Very important (4)
- ○ Extremely important (5)

Appendix J

Mental Illness Survey Questions

Q1 Although some mental patients may seem all right it is dangerous to forget for a moment that they are mentally ill.

- Strongly agree (1)
- Agree (2)
- Not sure, but probably agree (3)
- Not sure, but probably disagree (4)
- Disagree (5)
- Strongly disagree (6)

Q2 If a former mental patient applied for a job for a teaching position at a grade school and was qualified for the job I would recommend hiring them.

- Strongly agree (1)
- Agree (2)
- Not sure, but probably agree (3)
- Not sure, but probably disagree (4)
- Disagree (5)
- Strongly disagree (6)

Q3 If a former mental patient lived nearby I would not hesitate to allow young children under my care to play on the sidewalk.

- Strongly agree (1)
- Agree (2)
- Not sure, but probably agree (3)

- ○ Not sure, but probably disagree (4)
- ○ Disagree (5)
- ○ Strongly disagree (6)

Q4 If a former mental patient lived nearby, I would not allow my children to go to the movie theater alone.

- ○ Strongly agree (1)
- ○ Agree (2)
- ○ Not sure, but probably agree (3)
- ○ Not sure, but probably disagree (4)
- ○ Disagree (5)
- ○ Strongly disagree (6)

Q5 The main purpose of mental hospitals should be to protect the public form mentally ill people.

- ○ Strongly agree (1)
- ○ Agree (2)
- ○ Not sure, but probably agree (3)
- ○ Not sure, but probably disagree (4)
- ○ Disagree (5)
- ○ Strongly disagree (6)

Q6 If I know a person has been a mental patient, I will be less likely to trust them.

- ○ Strongly agree (1)
- ○ Agree (2)

- ○ Not sure, but probably agree (3)
- ○ Not sure, but probably disagree (4)
- ○ Disagree (5)
- ○ Strongly disagree (6)

Q7 One important thing about mental patients is that you cannot tell what they will do from one minute to the next.

- ○ Strongly agree (1)
- ○ Agree (2)
- ○ Not sure, but probably agree (3)
- ○ Not sure, but probably disagree (4)
- ○ Disagree (5)
- ○ Strongly disagree (6)

Q8 There should be a law forbidding a former mental patient the right to obtain a hunting license.

- ○ Strongly agree (1)
- ○ Agree (2)
- ○ Not sure, but probably agree (3)
- ○ Not sure, but probably disagree (4)
- ○ Disagree (5)
- ○ Strongly disagree (6)

Q9 To what extent do you think of mentally ill people as dangerous or harmless?

- ○ Extremely dangerous (1)

- ○ Very dangerous (2)
- ○ Moderately dangerous (3)
- ○ Slightly dangerous (4)
- ○ Neither harmless nor dangerous (5)
- ○ Slightly harmless (6)
- ○ Moderately harmless (7)
- ○ Very harmless (8)
- ○ Extremely harmless (9)

Q10 To what extent do you think of physically ill people as dangerous or harmless?

- ○ Extremely dangerous (1)
- ○ Very dangerous (2)
- ○ Moderately dangerous (3)
- ○ Slightly dangerous (4)
- ○ Neither harmless nor dangerous (5)
- ○ Slightly harmless (6)
- ○ Moderately harmless (7)
- ○ Very harmless (8)
- ○ Extremely harmless (9)

Appendix K

Demographic Questions

Q1 Where are you currently in Rhode Island College's Nursing Program

- ○ Nursing Intended Major (IM) (1)
- ○ 1st semester in the program (2)
- ○ 2nd semester in the program (3)
- ○ 3rd semester in the program (4)
- ○ 4th semester in the program (5)
- ○ 5th semester in the program (6)
- ○ 6th semester in the program (7)
- ○ 7+ semester in the program (8)

Q2 What sex were you assigned at birth, on your original birth certificate?

- ○ Male (1)
- ○ Female (2)

Q3 What is your current gender identity? (i.e. Female, Male, Non-Binary, Genderqueer)

_____

Q4 What is your age?

- ○ 18-24 years old (1)
- ○ 25-34 years old (2)
- ○ 35-44 years old (3)
- ○ 45-54 years old (4)
- ○ 55-64 years old (5)
- ○ 65-74 years old (6)
- ○ 75 years or older (7)

Q5 Please specify your ethnicity

- ☐ Asian/Pacific Islander (1)
- ☐ Black or African American (2)
- ☐ Hispanic or LatinX (3)
- ☐ Native American or American Indian (4)
- ☐ White (5)
- ☐ Other (6) _____

Appendix L

College Demographics Pertaining to Nursing and Nursing Intended Students

RHODE ISLAND COLLEGE

UNDERGRADUATE NURSING PROGRAM DEMOGRAPHICS
Fall 2019

Nursing Intended Students
(Includes students enrolled in Nursing Intended and RN to BSN Intended)
Total students: 652

Enrollment Status		Sex	
Full-time	510	Female	586
Part-time	142	Male	66

Race/ethnicity	
American Indian/Alaskan Native	5
Asian	20
Black/African American	102
Hispanic/LatinX	185
Native Hawaiian/Other Pacific Island	0
Nonresident alien	2
Two or more races	12
Race/ethnicity unknown	25
White	301

Age Range	
<=19	331
20-24	177
25-34	106
35-49	33
50+	5

Nursing Students
(Includes students enrolled in Nursing, Nursing RN: BSN)
Total students: 476

Enrollment Status		Sex	
Full-time	337	Female	416
Part-time	139	Male	60

Race/ethnicity	
American Indian/Alaskan Native	1
Asian	12
Black/African American	55
Hispanic/LatinX	68
Native Hawaiian/Other Pacific Island	2
Nonresident alien	2
Two or more races	11
Race/ethnicity unknown	24
White	301

Age Range	
<=19	35
20-24	285
25-34	105
35-49	48
50+	3

Office of Institutional Research & Planning February 14, 2020