

The Effects of Gender on Perceptions of Nurses Addicted to Opioids

By

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Abstract

The purpose of this study is to understand the perceptions of future healthcare workers and perceptions of the general public on nurses who become addicted to opioids while working. Participants in the study read one of two vignettes that tell the same story but have different main characters (one male nurse and one female nurse) who become addicted to opioids while at work. The perceptions of the reader were then measured to determine the level of stigma regarding addiction, perception of addiction, and perception of the addicted nurse. A sample size of 32 future healthcare workers participated in Part A and 93 individuals from the general community completed Part B. A series of independent sample *t*-tests were run to analyze differences between groups based upon their responses to the survey questions. The results of Part A of the study revealed that there were significant differences between conditions on the *Stigma Scale* and Factor 4 of *The Perceptions of Nursing Impairment Inventory (PNII)* among future nurses. Part B of the study revealed that there were no significant differences observed between conditions when testing the general population. These findings suggest that among nursing students the gender of the nurse that engaged in opioid diversion influenced the level of stigma and awareness of peers who engage in opioid diversion that participants felt towards the nurse in the vignette.

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Introduction, Intellectual Context, Framework and Theory

The trend of drug addiction and the negative stigma, or mark of shame held by a group of individuals, associated with it has affected many within the United States and sparked a national health crisis (“Merriam-Webster,” n.d.). The abuse of various substances, such as marijuana and cocaine, has increased among the general population, with the largest increase of substance abuse represented by opioid drug abuse. (*Substance Abuse and Mental Health Services Administration (SAMHSA)*, 2018). Opioids are defined as a “natural, synthetic, or semi-synthetic chemical that interacts with opioid receptors on nerve cells in the body and brain, and reduce the intensity of pain signals and feelings of pain” (Centers for Disease and Control, 2020.) A drastic escalation in access to opioids in the market has manifested through an approximate 30% rise in opioid-related visits to the Emergency Department spanning between 2016 to 2018 (Vivolo-Kantor, Seth, Gladden, Mattson, Baldwin, Kite-Powell & Coletta, 2018).

The trend of drug addiction affects healthcare professionals in the same manner as the general population, however, the onset differs (Kunyk, 2015). The need to understand and treat addictive behaviors in healthcare professionals has become increasingly relevant related to the rise in opioid availability (*SAMHSA*, 2018). As healthcare professionals continue to report addictive tendencies, direct negative impacts on patient care have ensued (Tanga, 2011). In response to these trends, hospitals have begun to implement new methods of controlling addiction and developed many recovery programs aimed to benefit addicted healthcare professionals (*American Society of Addiction Medicine*, 2011).

As healthcare professionals and the general population battle addiction, a growth in negative perceptions has followed. The application of addiction-related labels prevents many individuals from seeking the help that they desire (Wakeman & Rich, 2016). Patients designated

as addicts are less likely to seek resources that benefit their direct care and rehabilitation (Wakeman & Rich, 2016). The increase of this stigma is recognized in particularly vulnerable populations and has spread to include altered perceptions of healthcare professionals (Mittal, Drummond, Blevins, Curran, Corrigan & Sullivan, 2013). As these stigmas are alleviated and eventually eliminated, healthcare institutions can begin to implement early identification strategies and new rehabilitation strategies to break down barriers between perception and reality (Monroe, Vandoren, Smith, Cole, & Kenaga, 2011).

There is research aligned with the view that there may be increased substance abuse disorders among healthcare workers, however much of the research is outdated and exists in far fewer numbers compared to general population drug abuse research. This lack of current research necessitates the development of new data collection strategies. Vignettes, factual or fictional stories for research participants to read and consider, are a useful tool to elicit data, such as specific thoughts, feelings, and emotions from individuals as they relate to the research question. In order to understand specific perceptions of healthcare professionals and the general population on opioid addiction, two unique vignettes have been created: Vignette A and Vignette B. Distinct participants in the study from the healthcare field and the general population will be presented one of the two vignettes and then asked to respond to questions. The survey questions aim to test the exposure participants have to drug abuse as well as stigmas associated with drug abuse.

Review of Literature

Demographics of Addiction

Substance abuse has expanded to manifest as a national health concern across the country. Substance Abuse Disorder is an addiction to a specific substance that leads to

dependence (*American Psychiatric Association*, 2013). Overall addiction trends among the general population within the United States must be considered with a specific focus of addiction placed specifically on prescription opioids and the nonmedical use of opioids. Furthermore, gender differences that exist within the current trends of addiction will be examined and analyzed.

The rate of addiction within the United States has grown substantially over the years. Among individuals 12 and older, substance use has risen from 51% in 1999 to approximately 59% in 2015 (*SAMHSA*, 2018; Kantor, Rehm, Haas, Chan, & Giovannucci, 2015). It has been reported that in 2008-09, approximately 10.88 million individuals were addicted to marijuana; this number increased to approximately 14.5 million individuals in 2016-17, accounting for a 33.27% increase in marijuana abuse (*SAMHSA*, 2018). Additionally, approximately 2.01 million individuals were addicted to cocaine in 2008-09 and rose to approximately 2.03 million individuals in 2016-17; this accounts for a 0.99% increase in cocaine abuse (*SAMHSA*, 2018). Notably, the abuse of opioid pain relievers in 2008-09 was approximately 8.50 million individuals and that number rose to approximately 11.50 million individuals in 2016-17; this growth accounts for a 35.29% increase in opioid abuse during that period (*SAMHSA*, 2018). As the rate of substance abuse increases within the United States, many researchers have shifted their focus on understanding the various elements that influence addiction. Substance abuse currently affects approximately 1 in 10 Americans, or about 10.6% of the total population aged 12 and older (Ahrnsbrak, Bose, Hedden, Lipari & Park-Lee, 2016). Similarly, addiction rates among nurses mirrors the general population (Kunyk, 2015).

The overall use of substances has increased among the general population; however, the greatest increase has been tied to the prescription and nonprescription abuse of opioids (Saha,

Kerridge, Goldstein, Chou, Zhang, Jung, Pickering ... Grant, 2016). Non-Medical Prescription Opioid Use (NMPOU) and Non-Medical Prescription Opioid Use Disorders (NMPOUD) have risen dramatically from 2002-2012; NMPOU had risen by 161% and NMPOUD had risen by 125% (Saha et al, 2016). The number of opioids being prescribed in hospitals rose related to increases in dosages, as well as increases in advocacy for opioid-related pain management (Saha et al., 2016). The influx of opioid use does not come without consequence. The total number of opioid-related deaths in the United States in 2014 accounted for 61% of all overdose-related deaths that year, or approximately 28,647 (Rudd, Seth, David & Scholl, 2016). In 2015, the number of opioid-related overdoses increased to 33,091, constituting approximately 63% of all 52,404 overdose-related deaths that year (Rudd et al., 2016).

Opioid use has risen among the general population and the differences that exist between male and female addiction is critical. As of 2016, it has been reported that 5.2% of males and 4.0% of females abuse opioids within the United States (*SAMHSA*, 2016). The rate of opioid use ranks slightly higher in Indiana than the national average, with a 5.7% prevalence rate for males and 4.5% prevalence rate for females (*SAMHSA*, 2016). Both nationally and locally, males are reported to have a slightly higher incidence of opioid misuse than females. When examining the addictive natures of males and females, the chemical dependence concerning long-term addiction must be considered. It has been discovered that females are more likely to exhibit long-term use and escalation of drug use (Becker, McClellan, & Reed, 2016). Further, females are reported to have increased sensitivity and long-term addiction to the use of drugs and response to stress (Bobzean, DeNobrega, & Perrotti, 2014). It has been shown that increased levels of estrogen in the body made it more susceptible to producing a larger reward. Thus, if drugs are introduced into a system with a high amount of estrogen, the individual will experience a larger reward and

the likelihood of addiction will increase (Bobzean, DeNorbrega, & Perrotti, 2014). Stigma and negative attitudes towards women can make seeking treatment difficult for those who are caught in the addiction cycle (Becker, McClellan & Reed, 2016). Furthermore, a review of the national labor statistics finds that female registered nurses outnumber male registered nurses 9:1 (Angeles, 2018). Gender differences among the general population are important to recognize. It is also of great importance to note that the growing population of healthcare workers is not immune to addictive behavior.

Prevalence in Healthcare

Drug addiction has negatively affected healthcare workers and the general population alike, but how addiction manifests is unique to the healthcare setting. First, it is important to establish the prevalence of addiction among healthcare professionals, as well as the increase in the availability of opioids within the American healthcare system. This increase in opioid abuse among healthcare professionals leads to negative impacts on direct patient care. In response, institutions are pressured to develop new methods to control substances and create recovery programs for healthcare professionals with addiction.

Despite their expertise in human health, healthcare professionals are not immune to addiction on the national, state, or local level. The prevalence of substance abuse among physicians and nurses has been documented: ranging from 1999 to 2018, approximately 99,367 physicians and nurses nationwide received a reprimand for substance and alcohol abuse ("Drug and Alcohol," 2018). Between 1999 and 2017, there were more than 2,450 disciplinary actions taken by the Indiana state medical and nursing disciplinary boards. Indiana ranks below 15 other states that report a higher incidence of adverse actions taken ("Drug and Alcohol," 2018). All healthcare professionals are affected by addiction, but nurses are reportedly five times more

likely than physicians to abuse opioids on the job, largely because of their direct access to medications (“Drug and Alcohol,” 2018). This is further explained by the fact that nurses who work in the hospital generally outnumber physicians 3:1 (“Drug and Alcohol,” 2018). Despite the prevalence of reported cases, hospitals nationwide are not required by law to report nurses who have committed an offense, which can skew the results of data that is currently available (“Drug and Alcohol,” 2018).

To understand how the prevalence of addiction has increased among healthcare workers, it is important to note the rise of opioids in the American healthcare system. A comparison of the opioid prescriptions within the United States and Japan revealed that physicians in the United States were far more likely to prescribe opioids to satisfy and please their patients (Onishi, Kobayashi, Dexter, Marino, Maeno & Devo, 2017). Physicians who practice in the United States are more likely to prescribe opioids for both chronic and acute pain and do so at a rate higher than Japanese doctors, leading to an influx of opioids in the market (Onishi et al., 2017). Japan, however, only prescribes opioids for cancer pain, which allows for an informative comparison of opioid prescription practices and their subsequent effects in each country (Onishi et al., 2017).

With the increase in opioid abuse among healthcare professionals, there is a direct negative impact on patient care (Tanga, 2011). Nurses who are addicted tend to be less alert to their patients’ needs and tend to spend most of their time away from the unit (Tanga, 2011). When nurses are away from the unit, they fail to acknowledge the needs of their patients which can potentially reveal other underlying medical conditions or developments (Tanga, 2011). Nurses who use opioids in the clinical setting place their patient care and assessments on other coworkers, which leads to an increase in the workloads of other nurses (Tanga, 2011).

Drug diversion, or the illegal transfer of prescription medications to someone other than the patient they were prescribed to, has increased among hospital staff (Wood, 2015). With harm befalling patients, healthcare institutions have responded by developing new methods to help curb the growing rate of addiction. The interaction nurses have with medications within the hospital has been limited by the development of new medication dispensers (Vrabel, 2010). In addition, hospitals have begun to implement barcode scanning of medications to both limit medication errors and ensure that medication reaches the patient (Strudwick, Reisdorfer, Warnock, Kalia, Sulkers, Clark, & Booth, 2018). Nurses, however, still possess direct access to a patient's medication records, which means they are more aware of prescriptions and have a higher likelihood of being able to find a way to divert those medications (Ross, Berry, Smye & Goldner, 2017). As a result of this practice, nurses are under scrutiny and face backlash and repercussions for engaging in any type of drug diversion that may benefit their own drug seeking behaviors. (American Society of Addiction Medicine, 2011). Since these rates of drug diversion still exist, administrators and staff are being proactive in monitoring for drug diversion (Vrabel, 2010).

Healthcare institutions have also responded to the opioid crisis among its workers by developing programs to better treat their addiction. Many institutions and state boards of nursing are adopting alternative-to-discipline approaches to handle cases when nurses become addicted (Worley, 2017). These types of approaches are better aimed to get nurses the help they need in recovery and then reintroduce them back into the workforce (Worley, 2017). Many of these programs offered are funded by the state boards of nursing and include a three- to five-year commitment to the program to avoid discreditation by the board (Worley, 2017). Additionally, it has been reported that 81% of nurses would still work with a coworker who enters recovery and

76% of those nurses said they do not think nurses should be subjected to disciplinary actions for addiction (Cook, 2013). Recovery programs and other help with addiction continues to be refined to better serve nurses who become addicts, but the process is limited in growth and popularity because many nurses do not utilize the available resource (Juergens, 2019). Many of the negative approaches to these programs are related to the stigma that becomes associated with addiction and the subsequent fear that members of the general public will not be accepting of them (Wakeman & Rich, 2016).

Stigma and Addiction

The growth of opioid use has allowed for many negative labels to be applied and as such has affected the way addicted Americans can seek care. Stigma is defined as a mark of shame or discredit and often refers to a set of negative or unfair beliefs that a group has about something, typically associated with mental illness (“Merriam-Webster,” n.d.) Many patients who have been given a label of addiction are unable to seek the necessary care and the resources they desire. Additionally, an inability to reach out for aid has been noted in veterans and is associated with an increase in addiction and mental illness. Likewise, this type of attitude affects healthcare workers who attempt to seek help for any addictive behaviors. By working to eliminate these labels, more focus can be placed on creating awareness and decreasing the stigmatization of addiction.

A negative view of addiction nationwide has affected the way many patients seek medical attention. Stigma is often a factor that prevents individuals from seeking treatment options beneficial to their well-being (Wakeman & Rich, 2016). Reports have revealed that 44% of Americans find opioid addiction to be the result of a lack of will-power and discipline (*Associated Press National Opinion Research Center*, 2018). The application of these negative

views has affected addicted individuals with a history of intravenous (IV) use. Many of these patients seeking care are denied treatment to receive vital IV antibiotic therapy, with many hospitals citing the belief that they will use the IV catheter to inject illicit substances (Jewell, Weaver, Sgroi, Anderson, & Sayeed, 2016). Many users with this type of history will not seek treatment due to the stereotypes that have become associated with their addiction (Wakeman & Rich, 2016).

An inability to reach out for help when addiction is prevalent makes it difficult for many addicted Americans to seek out necessary resources (Johnson, 2018). One example of this negative association was reported with Post-Traumatic Stress Disorder in veterans. Researchers discovered that many veterans were unlikely to seek help for their mental disorder because they did not want to discuss the illness or perceived attitudes they felt others held against them (Mittal et al, 2013). This type of self-stigma was affecting the way veterans were seeking treatment; they felt other veterans suffering from the same disorder best understood what they were experiencing (Mittal et al., 2013). The use of such labels as mental illness will reduce the ability of the user to seek help, especially when they are unable to gain access to the resources they need (Jewell et al., 2013).

The negative association of stigma and mental illness affects the manner in which veterans seek treatment, but these same types of attitudes affect how healthcare professionals seek help and report suspected individuals as well. Individuals within the clinical setting hesitate to seek help because of the stigma and fear of what will happen to them in both their professional and personal lives (DesRoches, Rao, Fromson, Birnbaum, Iezzoni, Vogeli & Campbell, 2010). The number one reason that physicians failed to report impaired colleagues occurred when the label of an addiction was associated (DesRoches et al., 2010). It has been reported that

approximately 19% of healthcare workers failed to report an impaired colleague because they believed that someone else within their profession was handling the situation (DesRoches et al., 2010). Additionally, 12% of healthcare workers failed to report impaired colleagues for fear of retribution and 10% of physicians failed to report impaired colleagues because they felt it was not their responsibility (DesRoches et al., 2010). This lack of intuition to report impaired healthcare workers contributes to unsafe environments for their patients and is detrimental to their own ability to seek necessary resources (DesRoches et al., 2010)

Since hospital workers are not immune to the negative associations of addiction, many institutions are working to eliminate the necessary associations of addiction among their staff. Education of staff is a vital step toward early identification of addictive behaviors in users (Worley, 2017). These early identification strategies are being implemented at the nursing school level and work directly with students who are or are suspected of being addicted (Monroe et al, 2011). As a result of these strategies, many hospitals can reform their policies to accept suspected users and break down the barriers that prevent them from seeking proper care (Wakeman & Rich, 2016). The types of labels used, such as addict, need to be eliminated to promote awareness and divert more attention to the addiction process while also decreasing the stigmatization that becomes associated with it (Goodyear, Haass-Koffler, & Chayanne, 2019).

The Use of Vignettes and the Proposed Study

A vignette is a carefully constructed description of a person, place, or event that is written in such a way that thoughts and feelings can be evoked within a reader (Atzmülle & Steiner, 2010). Additionally, the use of vignettes is a way to briefly stimulate the thoughts and feelings of the participants in a way that does not directly influence their opinion on a subject (Hughes & Huby, 2004). Because vignettes are used frequently in research, it is imperative to look at the

validity surrounding the use of vignettes in experimental methodological design. A vignette is constructed by asking specifically what resources, expert advice, and review was utilized to ensure that vignettes contained the validity necessary to meet the end goal: what thoughts and feelings are being elicited (Gould, 1996). To construct a vignette capable of evoking the necessary thoughts and feelings, all goals must be met in construction. By maintaining validity and a legitimate construction, the vignette becomes a valuable tool that can be used to invoke thoughts and feelings in a participant to ask questions surrounding nearly any area of interest (Hughes & Huby, 2004).

To better understand how addiction has influenced the perception by both the general population and healthcare professionals, researchers could utilize vignettes. By utilizing these data collection methods, researchers can better understand where current perception lies. The use of vignettes in this proposed study will test the participants' perceptions of drug use among nurses and stigma associated with it. Through the careful construction of two nearly identical vignettes, the reader will be presented with either a male nurse (Vignette A) or a female nurse (Vignette B) and be asked to respond to questions.

Careful consideration was placed in the creation of the vignettes to meet the necessary goals of the proposed study. Stereotypes become associated with the difference between male and female nurses. Many non-hospitalized patients view the female nurse with more positive feminine qualities and view the male nurse with more negative qualities (Aranda, Castillo-Mayén & Montes-Berges, 2015). By utilizing the social dominance orientation, a scale testing feminine qualities in a population, it was reported that individuals scoring high on the scale were more likely to have greater stereotypes towards male and female nurses (Aranda, Castillo-Mayén & Montes-Berges, 2015). Therefore, the results of these studies further the need to understand

the view of the general population and other healthcare professionals hold against addicted nurses.

The introduction of two unique populations allows for the creation of a study to focus on perceptions of two distinct groups. The proposed study aims to understand how the perceptions each population has concerning opioid addiction among nurses may vary depending on the gender of the nurse. Two versions (male and female subject) of a vignette will be utilized to tell the story of a nurse who has fallen victim to opioid addiction. The first vignette will involve John, a male nurse (see Appendix A) and the second vignette will involve Sarah, a female nurse (see Appendix B). Besides sex and name of the nurse, everything else in the vignette is identical. The participants in the proposed study will read one of the two vignettes and be asked to respond to multiple questions from four different surveys: *The Exposure to Drug Users Index*, *The Stigma of Drug Users Scale*, *The Drug Use Stigmatization Scale*, and *The Perceptions of Nursing Impairment Inventory (PNII)*. The results of these surveys will be subject to a series of *t*-tests which will test the results for significance.

Methods

Participants

The current study was composed of two parts: Part A measured perceptions of an addicted nurse featured in a vignette among undergraduate students at the University of Indianapolis School of Nursing and Part B was an identical study using participants who are not healthcare workers recruited through Amazon's Mechanical Turk (mTurk), an online recruit-for-work service. The G*Power calculator indicated that a sample size of 102 participants should be recruited for each part of the study to reach a power of 0.8, with an effect size of 0.5, and a significance level set at .05 (see Appendix C).

Materials

Data was collected utilizing a quantitative experimental research design method to analyze how stereotypes associated with gender and nursing can influence individuals' perceptions of male and female nurses who are struggling with addiction. Qualtrics, an online survey platform, was used to conduct the experiment and to collect and store raw data. Participants were able to access the study through a link that was included in an email they received (nursing students) or through mTurk (non-healthcare workers). The vignettes, written in 3rd person perspective, were created compiling the results of several articles written on the legal and ethical considerations associated with reporting nurses who are thought to be impaired while working (see Appendixes A and B).

The following scales were utilized to measure the perception of participants:

1. The *Exposure to Drug Users Index* (see Appendix D) was developed to assess exposure to working or engaging with someone who has previously used an illicit drug (Palamar & Klang, 2011). The index allowed for the researcher to fill in what substance was being

referenced to. For the current experiments, non-medical opioid use was filled in. The measure allows participants to respond to each question with "Yes," "No," or "Not Sure" (Palamar & Klang, 2011).

2. The *PNII* (see Appendix E) was developed to analyze the perceptions of nurses and nursing supervisors on drug addiction in the workplace (Hendrix, Sabritt, McDaniel, & Field, 1987). Responses to each question were scored on a 4-point Likert-type scale ranging from 1 (strongly agree) to 4 (strongly disagree). Several distinct factors related to impairment and perception of illness were analyzed through the questions included in the *PNII* (Hendrix et al, 1987). The validity and reliability of this scale were determined through a pilot study in which a Cronbach Alpha of .82 was achieved. The scale was determined to fit the criteria needed to achieve an accurate response rate when implemented in a clinical setting (Hendrix et al, 1987).
3. The *Stigma of Drug Users Scale* (see Appendix F) has previously been used to assess clinicians' views towards opioid drug users (Palamar & Klang, 2011). Responses to each question were scored on a 5-point Likert-type scale ranging from 1 (strongly agree) to 5 (strongly disagree).
4. The *Drug Use Stigmatization Scale* (see appendix G) was used to assess an individual's views on using opioids (Palamar & Klang, 2011). Responses to each question were scored on a 5-point Likert-type scale ranging from 1 (strongly agree) to 5 (strongly disagree).

The Stigma of Drug Users Scale and Drug Use Stigmatization Scale have been tested for validity in assessing the relationship between stigma and stigmatization of drug users (Palamar &

Klang, 2011). Upon completion of testing, the scales were narrowed to their respective forms as they currently exist (Palamar & Klang, 2011)

Design and Procedure

Part A. All participants were told that the study was optional, completely anonymous and that they could quit the study at any point. On the first page of the Qualtrics survey, participants were asked to read the informed consent form. Consent was obtained when they clicked to continue, which allowed the participant to begin the study. Qualtrics then randomly assigned participants to read one of the two vignettes (one featuring a male nurse and the other featuring a female nurse) and then asked them to consider the vignette as they responded to several questions. The survey format was divided into two parts. Part I of the survey included a randomized combination of questions from the *Stigma of Drug Users Scale*, *The Drug Use Stigmatization Scale* and the *Perceptions of Nursing Impairment Inventory*. There were a handful of simple questions related to the vignette itself to serve as attention checks throughout Part I. This helped to ensure that the participant actually read the vignette and was paying attention to the questions. Part II collected information using the *Exposure to Drug Users Index*. Finally, participants who completed the survey were asked to submit their responses and were thanked for their time and participation. Participants through the University of Indianapolis School of Nursing then had the option to enter for a drawing (through a separate form, unlinked to their study responses) for one of five \$50 Amazon gift cards. The entire survey took approximately 20-25 minutes to complete.

Part B. Participants recruited through mTurk went through the same steps as the University of Indianapolis School of Nursing participants (see above). However, they were

recruited through mTurk and at the end of the survey were given a code to be paid \$1.00 as compensation for completion of the survey.

Results

Part A: University of Indianapolis School of Nursing Participants

Stigma Scale. An independent samples *t*-test was conducted to compare participants' perceptions of drug use depending on whether a male nurse or a female nurse was the subject of the vignette. There was a significant difference between the *Stigma Scale* scores for the male nurse ($M = 34.75, SD = 3.59$) and the female nurse ($M = 31.94, SD = 7.33$) conditions; $t(30) = 1.38, p = 0.02$. These results reveal that among nursing students, the vignette featuring the male nurse led to significantly higher stigma levels than the vignette featuring the female nurse.

Drug Use Stigmatization Scale. An independent samples *t*-test was conducted to compare the perception of drug use stigmatization depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Drug Use Stigmatization Scale* scores for the male nurse ($M = 14.31, SD = 3.61$) and the female nurse ($M = 16.56, SD = 4.38$) conditions; $t(30) = -1.59, p = 0.49$. These results suggest that the sex of the nurse in the vignette had no effect on the stigma attributed to drug use.

Factor 1: Disciplinary Orientation. An independent samples *t*-test was conducted to compare the disciplinary orientation depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 1: Disciplinary Orientation* scores for the male nurse ($M = 17.44, SD = 2.36$) and the female nurse ($M = 18.44, SD = 1.41$) conditions; $t(30) = -1.45, p = 0.07$. These results suggest that the sex of the nurse in the vignette had no effect on the disciplinary orientation when the nurse was caught abusing drugs.

Factor 2: Orientation to Helping Responsibility. An independent samples *t*-test was conducted to compare the orientation to helping responsibly depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 2: Orientation to Helping Responsibility* scores for the male nurse ($M = 16.00$, $SD = 1.51$) and the female nurse ($M = 16.25$, $SD = 1.44$) conditions; $t(29) = -0.47$, $p = 0.89$. These results suggest that the sex of the nurse in the vignette had no effect on the orientation to helping responsibly when the nurse was caught abusing drugs.

Factor 3: Distinctiveness to Nursing. An independent samples *t*-test was conducted to compare the distinctiveness to nursing depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 2: Distinctiveness to Nursing* scores for the male nurse ($M = 10.38$, $SD = 1.09$) and female the nurse ($M = 11.19$, $SD = 1.38$) conditions; $t(30) = -1.85$, $p = 0.49$. These results suggest that the sex of the nurse in the vignette had no effect on the distinctiveness to nursing when the nurse was caught abusing drugs.

Factor 4: Orientation to the Need to Know. An independent samples *t*-test was conducted to compare the orientation to the need to know about drug abuse depending on whether a male nurse or a female nurse was the subject of a vignette. There was a significant difference between the *Factor 4: Orientation to the Need to Know* scores for the male nurse ($M = 10.06$, $SD = 0.85$) and the female nurse ($M = 9.75$, $SD = 1.48$) conditions; $t(30) = 0.73$, $p = 0.01$. These results suggest that among future nurses, the vignette featuring the male nurse led to a significantly higher level of orientation to suspected drug abuse as compared to the vignette featuring the female nurse. This factor is a measure of the amount of awareness to peers who engage in diversion and other drug related behavior.

Factor 5: Treatability Orientation. An independent samples *t*-test was conducted to compare the treatability orientation depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 5: Treatability Orientation* scores for the male nurse ($M = 8.81, SD = 0.66$) and the female nurse ($M = 8.63, SD = 1.09$) conditions; $t(30) = 0.59, p = 0.09$. These results suggest that the sex of the nurse in the vignette had no effect on the treatability orientation when the nurse was caught abusing drugs.

Factor 6: Orientation to Nurse's Ability to Help. An independent samples *t*-test was conducted to compare the orientation to the nurse's ability to help depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 6: Orientation to the Nurse's Ability to Help* scores for the male nurse ($M = 11.00, SD = 1.37$) and the female nurse ($M = 10.44, SD = 1.26$) conditions; $t(30) = 1.20, p = 0.98$. These results suggest that the sex of the nurse in the vignette had no effect on the nurse's ability to help when the nurse was caught abusing drugs.

Factor 7: Perception of Prevalence. An independent samples *t*-test was conducted to compare the perception of prevalence depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 7: Perception of Prevalence* scores for the male nurse ($M = 4.13, SD = 0.81$) and the female nurse ($M = 3.75, SD = 0.77$) conditions; $t(30) = 1.34, p = 0.80$. These results suggest that the sex of the nurse in the vignette had no effect on the perception of prevalence when the nurse was caught abusing drugs.

Factor 8: Orientation to Impairment as Illness. An independent samples *t*-test was conducted to compare the orientation to impairment as an illness depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 8: Orientation to Impairment as Illness* scores for the male nurse ($M = 4.33,$

$SD = 0.98$) and the female nurse ($M = 4.75, SD = 0.77$) conditions; $t(29) = -1.32, p = 0.40$. These results suggest that the sex of the nurse in the vignette had no effect on the orientation to impairment as an illness when the nurse was caught abusing drugs.

Factor 9: Perception of Recognizability. An independent samples t -test was conducted to compare the perception of recognizability depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 9: Perception of Recognizability* scores for the male nurse ($M = 5.06, SD = 1.00$) and the female nurse ($M = 4.44, SD = 0.73$) conditions; $t(30) = 2.02, p = 0.88$. These results suggest that the sex of the nurse in the vignette had no effect on the perception of recognizability when the nurse was caught abusing drugs.

Part B: mTurk Participants

Stigma Scale. An independent samples t -test was conducted to compare participants' perceptions of drug use depending on whether a male nurse or a female nurse was the subject of the vignette. There was not a significant difference between the *Stigma Scale* scores for the male nurse ($M = 34.51, SD = 5.65$) and the female nurse ($M = 33.14, SD = 5.89$) conditions; $t(90) = 1.13, p = 0.91$. These results suggest that the sex of the nurse in the vignette does not have an effect on the stigma attributed to drug use.

Drug Use Stigmatization Scale. An independent samples t -test was conducted to compare the perception of drug use depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Drug Use Stigmatization Scale* scores for the male nurse ($M = 16.07, SD = 5.97$) and the female nurse ($M = 15.53, SD = 4.78$) conditions; $t(91) = .48, p = 0.21$. These results suggest that the sex of the nurse in the vignette had no effect on the stigma attributed to drug use.

Factor 1: Disciplinary Orientation. An independent samples *t*-test was conducted to compare the disciplinary orientation depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 1: Disciplinary Orientation* scores for the male nurse ($M = 17.95, SD = 2.79$) and the female nurse ($M = 17.53, SD = 3.32$) conditions; $t(91) = 0.66, p = 0.11$. These results suggest that the sex of the nurse in the vignette had no effect on the disciplinary orientation when the nurse was caught abusing drugs.

Factor 2: Orientation to Helping Responsibility. An independent samples *t*-test was conducted to compare the orientation to helping responsibly depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 2: Orientation to Helping Responsibility* scores for the male nurse ($M = 15.57, SD = 1.92$) and the female nurse ($M = 15.96, SD = 1.84$) conditions; $t(91) = -1.00, p = 0.35$. These results suggest that the sex of the nurse in the vignette had no effect on the orientation to helping responsibly when the nurse was caught abusing drugs.

Factor 3: Distinctiveness to Nursing An independent samples *t*-test was conducted to compare the distinctiveness to nursing depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 3: Distinctiveness to Nursing* scores for the male nurse ($M = 10.35, SD = 1.49$) and female the nurse ($M = 10.41, SD = 1.62$) conditions; $t(90) = -0.18, p = 0.66$. These results suggest that the sex of the nurse in the vignette had no effect on the distinctiveness to nursing when the nurse was caught abusing drugs.

Factor 4: Orientation to the Need to Know. An independent samples *t*-test was conducted to compare the orientation to the need to know depending on whether a male nurse or

a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 4: Orientation to the Need to Know* scores for the male nurse ($M = 9.26, SD = 1.20$) and the female nurse ($M = 9.35, SD = 1.15$) conditions; $t(90) = -0.37, p = 0.63$. These results suggest that the sex of the nurse in the vignette does not have an effect on the orientation to the need to know when the nurse was caught abusing drugs.

Factor 5: Treatability Orientation. An independent samples *t*-test was conducted to compare the treatability orientation depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 5: Treatability Orientation* scores for the male nurse ($M = 8.39, SD = 1.10$) and the female nurse ($M = 8.39, SD = 0.98$) conditions; $t(91) = -0.01, p = 0.39$. These results suggest that the sex of the nurse in the vignette had no effect on the treatability orientation when the nurse was caught abusing drugs.

Factor 6: Orientation to Nurse's Ability to Help. An independent samples *t*-test was conducted to compare the orientation to the nurse's ability to help depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 6: Orientation to the Nurse's Ability to Help* scores for the male nurse ($M = 10.41, SD = 1.44$) and the female nurse ($M = 10.48, SD = 1.37$) conditions; $t(90) = -0.24, p = 0.68$. These results suggest that the sex of the nurse in the vignette had no effect on the nurse's ability to help when the nurse was caught abusing drugs.

Factor 7: Perception of Prevalence. An independent samples *t*-test was conducted to compare the perception of prevalence depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 7: Perception of Prevalence* scores for the male nurse ($M = 4.70, SD = 1.21$) and the female nurse ($M = 4.80, SD = 1.02$) conditions; $t(91) = -0.40, p = 0.13$. These results suggest that the sex of the nurse in

the vignette had no effect on the perception of prevalence when the nurse was caught abusing drugs.

Factor 8: Orientation to Impairment as Illness. An independent samples *t*-test was conducted to compare the orientation to impairment as an illness depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 8: Orientation to Impairment as Illness* scores for the male nurse ($M = 5.29$, $SD = 0.97$) and the female nurse ($M = 4.96$, $SD = 0.82$) conditions; $t(91) = 1.78$, $p = 0.08$. These results suggest that the sex of the nurse in the vignette had no effect on the orientation to impairment as an illness when the nurse was caught abusing drugs.

Factor 9: Perception of Recognizability. An independent samples *t*-test was conducted to compare the perception of recognizability depending on whether a male nurse or a female nurse was the subject of a vignette. There was not a significant difference between the *Factor 9: Perception of Recognizability* scores for the male nurse ($M = 5.14$, $SD = 0.90$) and the female nurse ($M = 5.12$, $SD = 0.93$) conditions; $t(91) = 0.07$, $p = 0.77$. These results suggest that the sex of the nurse in the vignette had no effect on the perception of recognizability when the nurse was caught abusing drugs.

Discussion

The purpose of this study was to examine the impact that the gender of nurses may have on healthcare worker and non-healthcare worker perceptions of opioid abuse among nurses on the job. Two vignettes were created in which either a male or female nurse was the subject of opioid diversion. The study consisted of two parts: Part A examined the perception of nursing students enrolled at the University of Indianapolis School of Nursing while Part B examined the perception of non-healthcare workers in the general public through Amazon's mTurk.

Part A of the current study revealed that among the University of Indianapolis School of Nursing students, there were some significant differences observed depending on whether the nurse in the vignette was male or female. Findings from the *Stigma Scale* suggest that the gender of the nurse that engaged in opioid diversion influenced the level of stigma participants felt towards the nurse in the vignette. Findings from Factor 4 of the *PNII* suggest that the gender of the nurse that engaged in diversion influenced the awareness of the peers to this behavior.

While there were significant differences observed between conditions for the *Stigma Scale* and Factor 4 of the *PNII* among the University of Indianapolis nursing students, there were not enough participants to feel fully confident in these results. If it had been possible to recruit the appropriate number of participants, there is a chance that these results may have been more in line with what was observed among non-healthcare workers in Part B of the study.

However, if this remained significant upon collection of the ideal number of participants, the results that were seen in Part A of the study may be explained by the age of the participants in the study and the types of exposure that they may have had to opioid addiction. The results that were seen with Part A of the study are surprising as they do not align with the recent research that has been aligned with gender stereotypes among younger generations. The University of Indianapolis School of Nursing Students are within a generation of younger minds where gender, equity, and role definition within society are prevalent (Schroth, 2019). Based on this study, the results of the study should have been more aligned with being open-minded and containing less stigma towards the gender of the nurse (Schroth, 2019). When the gender of the nurse was changed in relation to the situation, the stigma towards the nurse changed. This may be explained by the gender stereotypes that tend to be associated with various occupations. Male nurses are viewed as a low stereotyped profession (less males in the field) and females are

viewed in a highly stereotyped profession (more females in the field) (Dawar & Anand, 2018). Again, the results that were seen with Part A of the study do not align with what is being seen in current literature and research. The difference in findings may indicate that the smaller sample size is to blame for the results seen. Future exploration of male and female job stereotypes is worth conducting to determine whether the results are consistent with findings of this study and whether they are in line with current research.

Based on the lack of significant results in Part B of the study, it seems that at the very least, non-healthcare workers appear to not be affected by the gender of the nurse who is diverting drugs. The results that were seen are not consistent with research that has been done in the past which has found that males were more likely to be reported for addictive tendencies or opioid misuse (Silver & Hur, 2020). The results that were seen with Part B suggest that drug diversion on the job may be a significant enough action that the sex of the individual does not make a difference in the perception of diversion among individuals. Further studies would need to reexamine this finding to determine if the results gathered from Part B are deviating from the current research or if there were limitations that were encountered.

Limitations

One of the limitations to the current study could be the population that was surveyed. The data collected through mTurk could be skewed as a result of mTurk workers attempting to make money by moving through surveys like these as quickly as possible, leading to a lack of full consideration of the vignette and the questions. In past research, mTurk participants have been shown to attempt to guess what the researcher wishes to find in the study and focuses less on the questions themselves (MacInnis, Boss, & Bourdage, 2020). Even so, many mTurk participants may view this position as more a part of their full-time job and care less about the actual results

(Almaatouq, Krafft, Dunham, Rand, & Pentland, 2020). Participants in this study were paid \$1.00 for completion of the survey; however, a larger payment may have been needed for a to ensure quality responses. Workers through mTurk may need to be compensated or have procedures explained to a higher degree in an effort to reduce any sort of in-group bias that may exist when results are collected (Almaatouq, Krafft, Dunham, Rand, & Pentland, 2020). To expand these efforts, future researchers may need to look at the platform being used and to make the necessary adjustments to better encompass the results needed from the workers, especially when using mTurk for data collection.

One the potential limitation with the results were the length of the survey in general. The total predicted time to complete was approximately 25-30 minutes. Such a significant time could deter the participant from remaining focused throughout the course of the study. Attention checks were included but they were broad, more specific checks may be needed to determine the focus of the participant throughout the entirety of the study. Another potential limitation was an influx of information that was given in the vignette. The vignette was not pilot tested, which indicated that there was no way to determine if the information provided was beneficial or harmful. Pilot testing the vignette would have revealed any flaws and limitations that could have hindered results when answering the survey questions. In addition, one of the survey questions from the stigma of drug users index was left off when copying over to the survey platform. While this was one question, there may have been an impact in the results of the survey answers.

Conclusion

The results of this study revealed significance in the stigma of drug use and the willingness to intervene when misuse was suspected among nursing students in Part A. The results from Part B found no significance and suggest that the perception related to drug use remains even when the

gender of the nurse is changed in the vignette. The access to medication within the hospital has decreased significantly in recent years. Exposure to medication and practices to divert medication largely remain shadowed in teaching current nurses and future nurses. Continuing to place a focus on diversion and access will ensure that these detrimental practices are decreased. By promoting rehabilitation and exposure, the next generation of healthcare providers can be educated and understand what will happen if engaged in such practices.

Reflection and Future Directions

One area that was changed during the study was the switch from using members within the Community Health Network to using members within the University of Indianapolis School of Nursing. This was a change that was approved through the Honors College with a submission of a justification for change document (see appendix H). It is important to note that Appendix H only includes the justification for the change, the methods section that was included in the original document is now reflected in the methods section of this manuscript. One of the biggest reasons for this change was how slow the process was in gaining approval to conduct the study through Community Health Network. Several colleagues at the University of Indianapolis had voiced their concerns and worry for completion of the project if we continued to seek Community employee responses. Since the University of Indianapolis had a large nursing school, it was determined that gathering data through them would be more sensible and therefore, the change was proposed and approved.

One of the significant challenges that was faced when collecting data for this study was the limited number of participants that were recruited for Part A of the study. While 32 participants were recruited, it was difficult in spreading the word and recruiting the desired number of students to participate in the study. This may have been less of an issue if nursing

students were the population of interest from the start of the experiment. Throughout the conduction of the study, several emails were sent to the nursing students in the University of Indianapolis School of Nursing and several faculty members reached out who were willing to spread the word to their classes. Despite these continued efforts, we were still only able to recruit 32 participants. If more time to collect data was permitted, more participants could have been recruited which would have played an effect and could have potentially led to more areas of significance.

A future project would need to be shifted to focus more on the impact that drug diversion and opioid addiction could have when caring for patients. A much greater focus should be placed on the amount of access and the wasting practices that are implemented in the hospital. Many times, nurses are exposed directly to the medication and have the moral obligation to waste the medication in the presence of another nurse, however, this may not always be the case. Hospital managers and nursing schools in general, should place a greater focus on ensuring that what is taught and what is implemented in practice are in line.

One other future project can look at the amount of exposure nursing students have to treatment and reporting addiction within their institution and how that may affect perceptions of addiction. Nursing students and college students in general may receive input from their university on exposure to drug use and the education received regarding drug abuse. Many college campuses have received and developed tailored programs that focus on specific genders and how information is tailored and presented regarding drug abuse (Wolfson, Stinson & Poole, 2020). The types of programs that have been implement on college campuses work to decrease the negative side-effects of seeking treatment and better integrate gender and equality into making rational decisions (Wolfson, Stinson & Poole, 2020). These views and practices can

influence the manner in which the individual perceives the addict and how they appropriately respond to the possibility of intervening on a situation.

Future vignettes used for this type of study may benefit from being pilot tested to determine the quality of the information and whether it would impact the decisions made when compared to the survey questions. Future studies in this area should continue to focus on the impact that diversion and addiction has on new and future nurses. Access to medication has become more limited, but the exposure within the healthcare system is still great.

References

- Almaatouq, A., Krafft, P., Dunham, P., Rand, D., & Pentland, A. (2020). Turkers of the world unite: Multilevel in-group bias among crowdworkers on Amazon Mechanical Turk. *Social Psychological and Personality Science, 11*(2), 151-159.
doi:10.1177/194855061983002
- Ahrnsbrak, R., Bose, J., Hedden, S. L., Lipari, R. N., & Park-Lee, E. (2017). Key substance use and mental health indicators in the United States: Results from the 2016 National Survey on Drug Use and Health. Retrieved from <https://www.samhsa.gov/data/report/key-substance-use-and-mental-health-indicators-united-states-results-2016-national-survey>
- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington, VA: American Psychiatric Publishing.
- American Society of Addiction Medicine. (2011). Public policy statement on healthcare and other licensed professionals with addictive illness - an overview. 1-8. Retrieved from <http://www.asam.org>
- Angeles, Domingo. (2018). Share of women in occupations with many projected openings, 2016–26. Career Outlook, U.S. Bureau of Labor Statistics. Retrieved from <https://www.bls.gov/careeroutlook/2018/data-on-display/dod-women-in-labor-force.htm>
- Aranda, M., Castillo-Mayén, M. R., Montes-Berges, B. (2015). Has the traditional social perception of nurses changed? Attribution of stereotypes and gender roles. *Acción Psicológica, 12*(1) 103-112.
- Associated Press National Opinion Research Center. (2018). Americans recognize the growing problem of opioid addiction. Retrieved from

<http://www.apnorc.org/projects/Pages/Americans-Recognize-the-Growing-Problem-of-Opioid-Addiction.aspx>

Atzmüller, C., & Steiner, P. M. (2010). Experimental vignette studies in survey research.

Methodology, 6(3), 128-138. doi:10.1027/1614-2241/a000014

Becker, J. B., McClellan, M. L., & Reed, B. G. (2016). Sex difference, gender and addiction.

Journal of Neuroscience Research, 95(1-2). doi: <https://doi.org/10.1002/jnr.23963>

Bobzean, S. A., DeNobrega, A. K., & Perrotti, L. I. (2014). Sex differences in the neurobiology of drug addiction. *Experimental Neurology*, 259, 64-74.

doi:<http://dx.doi.org/10.1016/j.expneurol.2014.01.022>

Centers for Disease and Control. (2020) Commonly used terms. Retrieved from

<https://www.cdc.gov/drugoverdose/opioids/terms.html>

Cook, L.M. (2013). Can nurses trust nurses in recovery reentering the workplace?

Nursing, 43(3), 21-24. doi:10.1097/01.NURSE.0000427092.87990.86

Dawar, T., & Anand, S. (2018). Occupational stereotypes amongst children: A gender perspective. *The Indian Journal of Home Science* 30(1). 10-21. Retrieved from

<https://www.homescienceassociationofindia.com/uploads/journals/HSAI%20Journal%20January%202018.pdf#page=16>

DesRoches, C. M., Rao, S. R., Fromson, J. A., Birnbaum, R. J., Iezzoni, L., Vogeli, C., &

Campbell, E. G. (2010). *JAMA*, 304(2), 187-193. doi:10.1001/jama.2010.921

Drug and Alcohol Abuse Among Healthcare Professionals in the U.S. (2018). Retrieved from

<https://www.anapolweiss.com/substance-abuse-healthcare-professionals/>

Emergency Nurses Association. (2017). Substance use among nurses and nursing students.

Retrieved from <https://www.ena.org/docs/default-source/resource-library/practice-resources/position-statements/joint-statements/substanceuseamongnurses>

Goodyear, K., Haass-Koffler, C. L., & Chavanne, D. (2018). Opioid use and stigma: the role of gender, language and precipitating events. *Drug Alcohol Depend.*, 185. 339-346.

doi:10.1016/j.drugalcdep.2017.12.037

Gould, D. (1996) Using vignettes to collect data for nursing research studies: How valid are the findings? *Journal of Clinical Nursing*, 5, 207-212.

doi:10.1111/j.13652702.1996.tb00253.x

Hendrix, M. J., Sabritt, D., McDaniel, A., & Field, B. (1987). Perceptions and attitudes toward nursing impairment. *Research in Nursing & Health*, 10, 323-333.

doi:10.1002/nur.4770100506

Hughes, R., & Huby, M. (2004). The construction and interpretation of vignettes in social research. *Social Work & Social Sciences Review*, 11(1), 36-51.

doi:10.1921/swssr.v11i1.428

Jewell, C., Weaver, M., Sgroi, C., Anderson, K., & Sayeed, Z. (2013). Residential addiction treatment for injection drug users requiring intravenous antibiotics: A cost-reducing strategy. *J Addict Med*, 7(4), 271-276. doi:10.1097/ADM.0b013e318294b1eb

doi:10.1097/ADM.0b013e318294b1eb

Johnson, S. R. (2018). Public perception is tough to overcome in battle against opioid addiction.

Retrieved from

<https://www.modernhealthcare.com/article/20180526/NEWS/180529957/public-perception-is-tough-to-overcome-in-battle-against-opioid-addiction>

- Juergens, J. (2019). Addiction in medical professionals. Retrieved from <https://www.addictioncenter.com/addiction/medical-professionals/>
- Kantor, E.D., Rehm, C. D., Haas, J. S., Chan, A. T., & Giovannucci, E. L. (2015). Trends in prescription drug use among adults in the United States from 1999-2012. *JAMA* 314(17). 1818-1831. doi:10.1001/jama.2015.13766
- Kunyk, D. (2015). Substance use disorders among registered nurses: Prevalence, risks, and perceptions in a disciplinary jurisdiction. *Journal of Nursing Management*, 23, 54-64. doi:10.1111/jonm.12081
- MacInnis, C. C., Boss, H. C.D., & Bourdage, J. S. (2020). More evidence of participant misrepresentation on mTurk and investigating who misrepresents. *Personality and Individual Differences*, 152. doi: <https://doi.org/10.1016/j.paid.2019.109603>
- Macrae, C. N., Schloerscheidt, A. M., Bodenhausen, G. V., & Milne, A. B. (2002). Creating memory illusions: Expectancy-based processing and the generation of false memories. *Memory*, 10(1), 63-80.
- Merriam-Webster. (n.d.). In *Merriam-Webster.com dictionary*. Retrieved April 16, 2020 from <https://www.merriam-webster.com/dictionary/stigma#other-words>
- Mittal, D., Drummond, K.L., Blevins, D., Curran G., Corrigan, P., & Sullivan., G., (2013) Stigma associated with PTSD: Perceptions of treatment-seeking combat veterans. *Psychiatr Rehabil J*. 26(2). 86-92. doi:10.1037/h0094976
- Monroe, T., Vandoren, M., Smith, L., Cole, J., & Kenaga, H. (2011). Nurses recovering from substance use disorders: A review of policies and position statements. *Journal of Nursing Administration*, 41, 415-421. doi:10.1097/ NNA.0b013e31822edd5f

- Onishi, E., Kobayashi, T., Dexter, E., Marino, M., Maeno, T., & Deyo, R. A. (2017). Comparison of opioid prescribing patterns in the United States and Japan: Primary care physicians' attitudes and perceptions. *JABFM*, 30(2), 248-254. Doi: 10.3122/jabfm.2017.02.160299
- Palamar, J., & Klang, M.V. (2011). *Exposure to Drug Users Index*. doi: 10.3109/10826084.2011.596606
- Palamar, J., & Klang, M.V. (2011). *Stigma of Drug Users Scale*. doi: 10.3109/10826084.2011.596606
- Palamar, J., & Klang, M. V. (2011). *Drug Use Stigmatization Scale*. doi: 10.3109/10826084.2011.596606
- Ross, C. A., Berry, N. S., Smye, V., & Goldner, E. M. (2017). A critical review of knowledge on nurses with problematic substance use: The need to move from individual blame to awareness of structural factors. *Nursing Inquiry*, 25(2), 1-9. doi:10.1111/nin.12215
- Rudd, R. A., Seth, P., David, F., & Scholl, L. (2016) Increases in drug and opioid overdose deaths – United States, 2010-2015. *MMWR* 65(50-51). 1445-1452. doi.http://dx.doi.org/10.15585/mmwr.mm655051e1.
- Saha T. D., Kerridge, B. T., Goldstein, R. B., Chou, S. P., Zhang, H., Jung, J., Pickering, R. P., ... Grant, B. F. (2016) Nonmedical prescription opioid use and DSM-5 nonmedical prescription opioid use disorder in the United States. *J Cline Psychiatry*. 77(6). 772-780. doi.10.4088/JCP.15m10386
- Schroth, H. (2019). Are you ready for Gen Z in the workplace? *California Management Review* 00(0). 1-14. doi: 10.1177/0008125619841006

- SAMHSA. (2016). Past Year Opioid Misuse by Region, State, Age Group, Gender and County Type: Numbers in Thousands, Percentages, 95% CI and P-values of Tests of Differences: Annual Averages Based on 2015-2016. Retrieved from [https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/Supplemental NSDUH Opioid Tables/past year use by state by age and gender-inh coc meth opi.xlsx](https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/Supplemental%20NSDUH%20Opioid%20Tables/past%20year%20use%20by%20state%20by%20age%20and%20gender-inh%20coc%20meth%20opi.xlsx)
- SAMHSA. (2018). National Survey on Drug Use and Health: Comparison of 2008-2009 and 2014-2015 Population Percentages (50 States and the District of Columbia). Retrieved from <https://www.samhsa.gov/data/sites/default/files/NSDUHsaeLongTermCHG2015/NSDUHsaeLongTermCHG2015.htm#topofpage>
- Schroth, H. (2019). Are you ready for Gen Z in the workplace? *California Management Review*, 00(0), 1-14. doi: 10.1177/0008125619841006
- Silver, E. R., & Hur, C. (2020). Gender differences in prescription opioid use and misuse: Implications for men's health and the opioid epidemic. *Preventive Medicine*, 131. doi: <https://doi.org/10.1016/j.ypmed.2019.105946>
- Strudwick, G., Reisdorfer, E., Warnock, C., Kalia, K., Sulkers, H., Clark, C., & Booth, R. (2018). Factors associated with barcode medication administration technology that contribute to patient safety. *Journal of Nursing Care Quality*, 33(1), 79-85. doi: 10.1097/NCQ.0000000000000270
- Tanga, H. Y. (2011). Nurse drug diversion and nursing leaders' responsibilities: Legal, regulatory, ethical, humanistic, and practical considerations. *JONA*, 13(1), 13-16. Retrieved from <https://pdfs.semanticscholar.org/45c7/f0d6ec9c26e3407a17eabadd42cf7c7afd48.pdf>.

- Vivolo-Kantor, A. M., Seth, P., Gladden, M., Mattson, C. L., Baldwin, G. T., Kite-Powell, A., Coletta, M. A. (2018) Vital signs: Trends in emergency department visits for suspected opioid overdoses – United States. *Morb Mortal Wkly Rep*, 67, 279-285. doi: <http://dx.doi.org/10.15585/mmwr.mm6709e1>
- Vrabel, R. (2010). Identifying and dealing with drug diversion. *Health Management Technology*, 31(12), 18-19. Retrieved from <https://europepmc.org/abstract/med/21197899>.
- Wakeman, S. E., & Rich, J. D. (2016). Barriers to post-acute care for patients on opioid agonist therapy; an example of systematic stigmatization of addiction. *J Gen Intern Med*, 32(1), 17-19. doi:10.1007/s11606-016-3799-7
- Wolfson, L., Stinson, J., & Poole, N. (2020). Gender informed or gender ignored? Opportunities for gender transformative approaches in brief alcohol interventions on college campuses. *International Journal of Environmental Research and Public Health*, 17. 1-17. doi:10.3390/ijerph17020396
- Wood, D. (2015). Drug diversion. *Australian Prescriber*, 38(5). 164-166. doi: 10.18773/austprescr.2015.058
- Worley, J., (2017). Nurses with substance use disorders: Where we are and what needs to be done. *Journal of Psychosocial Nursing*, 55(12), 11-14. doi:10.3928/02793695-20171113-02

Appendix A

John is a nurse on a Medical-Surgical unit with a significant shortage of staff. This shortage has put a strain on nurses and has required him to pick up extra shifts and work overtime. The increasing demand for high-quality patient care combined with increased workload has created a high-stress environment.

John's coworkers have begun to take notice of his behavior. Specifically, they have noticed changes in John's rounding accuracy and decreased quality of patient care in John's day-to-day interactions with patients. Patient complaints have increased when interacting with John. He also seems to be away from the floor more often than usual. When confronted by coworkers about increased breaks, John says that he needs breaks from the high-stress environment.

Recently, there has been a miscount of controlled substances in the automatic medication dispenser. At first, the miscount was subtle, but in recent weeks it has increased to several vials of an opioid analgesic every week. Floor managers have investigated the recent issues and have noticed a pattern of missing medication when John is working. The nursing supervisor has been made aware of the situation and is investigating diverted medication records.

After several weeks of odd behavior, John is found acting strange and secretive in the bathroom by a coworker, who is aware of the diverted medication. When asked if everything is okay, John brushes them off and rushes out of the bathroom. The coworker, after noticing this behavior, is suspicious that John may be the one diverting and using the medication.

A floor meeting is called to discuss the recently discovered diversion and the protocol for reporting an impaired colleague. Supervisors discuss the treatment options that are available for healthcare workers who are addicted and using controlled substances while working. They clarify the implications of licensing and reprimands if they report themselves before being discovered of diverting medication. Many programs are in place to aide an impaired nurse if they are diverting medication and addicted.

A coworker who has noticed the erratic and strange behavior of John reports them to the nursing supervisor several days after the floor meeting. They are concerned about the safety of patients and were worried that if they failed to report their colleague that they would be reprimanded.

John is called in for a meeting with the nursing supervisor and he confesses to diverting controlled opioid analgesics from the medication room for personal use. *He admits that he has been addicted to opioid analgesics for the past year but has only recently begun to use while on the job.* He is recommended to begin treatment immediately at an inpatient rehabilitation facility. Upon successful completion, he will be closely monitored and reinstated back into his role on the floor with a restriction to workload and the number of shifts worked.

All underlined words will be adjusted depending on which condition the participant is assigned to. John and Sarah will be used as the male and female forenames, (Macrae et al., 2002).

Appendix B

Sarah is a nurse on a Medical-Surgical unit with a significant shortage of staff. This shortage has put a strain on nurses and has required her to pick up extra shifts and work overtime. The increasing demand for high-quality patient care combined with increased workload has created a high-stress environment.

Sarah's coworkers have begun to take notice of her behavior. Specifically, they have noticed changes in Sarah's rounding accuracy and decreased quality of patient care in Sarah's day-to-day interactions with patients. Patient complaints have increased when interacting with Sarah. She also seems to be away from the floor more often than usual. When confronted by coworkers about increased breaks, Sarah says that she needs breaks from the high-stress environment.

Recently, there has been a miscount of controlled substances in the automatic medication dispenser. At first, the miscount was subtle, but in recent weeks it has increased to several vials of an opioid analgesic every week. Floor managers have investigated the recent issues and have noticed a pattern of missing medication when Sarah is working. The nursing supervisor has been made aware of the situation and is investigating diverted medication records.

After several weeks of odd behavior, Sarah is found acting strange and secretive in the bathroom by a coworker, who is aware of the diverted medication. When asked if everything is okay, Sarah brushes them off and rushes out of the bathroom. The coworker, after noticing this behavior, is suspicious that Sarah may be the one diverting and using the medication.

A floor meeting is called to discuss the recently discovered diversion and the protocol for reporting an impaired colleague. Supervisors discuss the treatment options that are available for healthcare workers who are addicted and using controlled substances while working. They clarify the implications of licensing and reprimands if they report themselves before being discovered of diverting medication. Many programs are in place to aide an impaired nurse if they are diverting medication and addicted.

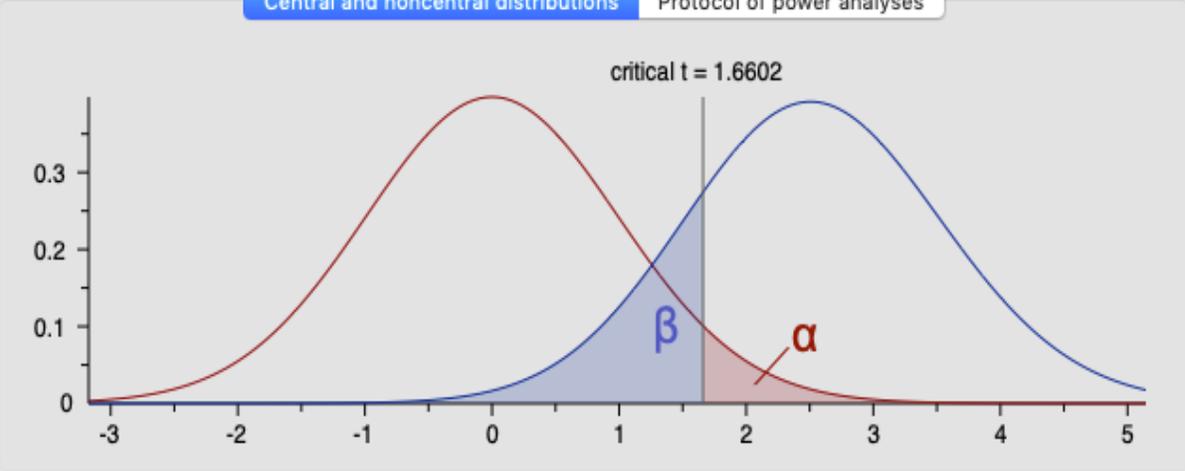
A coworker who has noticed the erratic and strange behavior of Sarah reports them to the nursing supervisor several days after the floor meeting. They are concerned about the safety of patients and were worried that if they failed to report their colleague that they would be reprimanded.

Sarah is called in for a meeting with the nursing supervisor and he confesses to diverting controlled opioid analgesics from the medication room for personal use. *She admits that she has been addicted to opioid analgesics for the past year but has only recently begun to use while on the job.* She is recommended to begin treatment immediately at an inpatient rehabilitation facility. Upon successful completion, she will be closely monitored and reinstated back into her role on the floor with a restriction to workload and the number of shifts worked.

Appendix C

G*Power 3.1

Central and noncentral distributions Protocol of power analyses



critical t = 1.6602

Test family:

Statistical test:

Type of power analysis:

Input parameters

Determine

Tail(s):

Effect size d:

α err prob:

Power (1- β err prob):

Allocation ratio N2/N1:

Output parameters

Noncentrality parameter δ	2.5248762
Critical t	1.6602343
Df	100
Sample size group 1	51
Sample size group 2	51
Total sample size	102
Actual power	0.8058986

X-Y plot for a range of values Calculate

Appendix D

Exposure to Drug Users Index (3-Point Likert Scale: Yes, No, Not Sure)

1. I have observed people who use opioids frequently.
2. I have worked with a person that uses opioids.
3. I have a friend who uses opioids.
4. I have been in class with a person that uses opioids.
5. I have a family member or relative who uses opioids.
6. I have lived with a person who uses opioids.
7. People in my neighborhood use opioids.

Appendix E

PNII (4-Point Likert Scale: Strongly Disagree, Disagree, Agree, Strongly Agree)

A. Factor 1: Disciplinary Orientation

1. As a rule, impaired nurses should not be allowed to work as registered nurses until they have successfully completed a treatment program.
2. When a nursing supervisor has concrete evidence that a nurse is impaired, the supervisor has a responsibility to suspend that individual pending investigation of the charges.
3. While receiving treatment, most impaired nurses are capable of continuing to work as registered nurses.

Palamar, J., & Klang, M.V. (2011). *Exposure to Drug Users Index*. doi: 10.3109/10826084.2011.596606

4. When a nursing supervisor has concrete evidence that a nurse is impaired, the supervisor has a responsibility to dismiss that individual immediately and report the case to the State Board of Nursing.
5. In most cases, public safety should require that impaired nurses' licenses be revoked.
6. For purposes of public protection, the State Board of Nursing should continue to publish the names of all nurses found to be impaired.

B. Factor 2: Orientation to Helping Responsibility Within the Profession

1. The State Board of Nursing's responsibility should include offering the impaired nurse referral to sources of assistance.
2. The State Board of Nursing should provide resources to support research on the prevention and treatment of impairment.
3. Major health care agencies should be required to provide employee assistance programs which could serve the impaired nurse.
4. When a nurse has reason to believe that a co-worker is impaired, he/she has a responsibility to help that person receive assistance.
5. The State Board of Nursing has a responsibility to provide nurses suspected of impairment with specific information about their legal and due process rights in all disciplinary procedures.

C. Factor 3: Distinctiveness to Nursing.

1. In most cases, the problems of impaired nurses stem from difficulties which those individuals has already encountered before becoming nurses.
2. The problems of impaired nurses are often a reflection of stressful situations on the job.
3. Becoming impaired is something that could happen to any nurse.
4. Problems of impaired nurses are basically not very different than those of other individuals with substance abuse or emotional problems.

D. Factor 4: Orientation to the Need to Know.

1. If a nurse is impaired and receiving treatment, it is important for his/her supervisor to be aware of that fact.

2. If an impaired nurse is receiving treatment, it is important for his/her coworkers to be aware of that fact.
 3. Nurses have an obligation to notify their supervisor when they suspect impairment in a coworker.
- E. Factor 5: Treatability Orientation.
1. Even after treatment it is unusual for an impaired nurse to be productive and trustworthy.
 2. There is little that can be done to help nurses who are impaired.
 3. In most cases, public safety can be assured by placing a probationary period on the license of the impaired nurse.
- F. Factor 6: Orientation to the Nurse's Ability to Help.
1. The help needed by impaired nurses usually requires types of insight which only other nurses are likely to provide.
 2. When made aware of a coworker's impairment, fellow nurses are usually able to offer assistance.
 3. Most impaired nurses could be helped in a support group with other nurses.
 4. When suspecting impairment in a coworker, the nurse's first response should be to confront that individual.
- G. Factor 7: Perception of Prevalence.
1. Impairment is a widespread problem among nurses.
 2. Impairment occurs less frequently in nursing than in other health-related fields.
- H. Factor 8: Orientation to Impairment as Illness.
1. Impaired nurses can best be understood as people who suffer from an illness.
 2. Impairment is generally the result of a weakness in the nurse's personality.
- I. Factor 9: Perception of Recognizability.
1. I could probably recognize an impaired nurse in the work setting by his/her behavior.
 2. Impairment, when it occurs, is more likely to be reported in nursing than in other health-related fields.

Appendix F

Stigma of Drug Users Scale (5- Point Likert Scale: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree)

1. Most people believe opioid users cannot be trusted.
2. Most people believe that opioid users are dangerous.
3. Most people would not accept an opioid user as a close friend.
4. Most people feel that opioid use is a sign of personal failure.
5. Most people will take a known opioid user's opinions less seriously.
6. Most people think less of a person that uses opioids.
7. Most people would treat an opioid user just as they would treat anyone else.
8. Most employers will not hire a person uses opioids.
9. Most people would not accept an opioid user as a teacher of young children in a public school.

Hendrix, M. J., Sabritt, D., McDaniel, A., & Field, B. (1987) Perceptions and attitudes toward nursing impairment. *Research in Nursing & Health*, 10, 323-333. doi:/10.1002/nur.4770100506

Palamar, J., & Klang, M.V. (2011). *Stigma of Drug Users Scale*. doi: 10.3109/10826084.2011.596606

Appendix G

A. Drug Use Stigmatization Scale (5- Point Likert Scale: Strongly Disagree, Disagree, Neutral, Agree, Strongly Agree)

1. Using opioids is morally wrong.
2. Opioid users should go to prison.
3. Opioid users are weak minded.
4. Opioid users have no future.
5. Most opioid users are not well educated.
6. Opioid users are dishonest.
7. Opioid users make me angry.

Appendix H

Note from Melissa Loria

I have recently learned that working with Community Health to collect data from their employees has been a serious issue for students in the past. This coupled with the significant number of revisions this proposal required is leading us to request permission to collect data from nursing students at UIndy in place of Community employees. The mTurk portion of the

Palamar, J., & Klang, M. V. (2011). <i>Drug Use Stigmatization Scale</i> . doi: 10.3109/10826084.2011.596606
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study will remain the same.

The original research question is almost entirely unaffected by this change, as using nursing students instead of healthcare professionals allows us to measure individuals' perceptions who are being trained as healthcare professionals and who plan to be employed as healthcare professionals. Further, Mark has done an excellent job highlighting the similarities between healthcare workers and nursing students below.

The biggest concern at this point is that Mark will not have enough time to collect the Community data if we run into issues that students have been limited by in the past. I am very concerned that if we do not make this adjustment for Mark, he will not be able to graduate with honors on time simply due to possibly hang-ups with Community Health and not because of anything he's done wrong.

Mark's Justification for Change

The trend of drug addiction affects healthcare professionals and nursing students in the same manner as the general population (Emergency Nurses Association, 2017). The need to understand and treat the addictive behaviors in nursing students has become increasingly

relevant, especially as the rise in opioids and opioid use continues (SAMHSA, 2018). While treatment options are limited for registered nurses, they are even more limited for nursing students. Many nursing schools are zero-tolerance programs and when students are found to be addicted to substances, they are removed from the program (Worley, 2019). Students who are dismissed from one nursing program can then apply to another without disclosing the incident that occurred at the previous institution (Worley, 2019). This type of cycle can potentially compromise patient safety, but more importantly, the nursing student is not able to receive the help they may need for fear of punishment (Worley, 2019).

As future healthcare professionals (nursing students) and the general population battle addiction, a growth in negative perceptions has followed. The application of addiction-related labels prevents many individuals from seeking the help that they desire (Wakeman & Rich, 2016). Patients designated as addicts are less likely to seek resources that benefit their direct care and rehabilitation (Wakeman & Rich, 2016). The increase of this stigma is recognized in particularly vulnerable populations and has spread to include altered perceptions of healthcare professionals (Mittal, Drummond, Blevins, Curran, Corrigan & Sullivan, 2013). As these stigmas are alleviated and eventually eliminated, many nursing schools can begin to look at other treatment options, without the outright dismissal of the student in general (Monroe, Vandoren, Smith, Cole, & Kenaga, 2011). The early identification and screening of drug use among nursing students is needed in order to prevent long-term career addiction and potential complications to patient safety (Monroe, Vandoren, Smith, Cole, & Kenaga, 2011).

Appendix I



Completion Date 21-Nov-2018
 Expiration Date 20-Nov-2023
 Record ID 29312376

This is to certify that:

Mark Jones

Has completed the following CITI Program course:

Responsible Conduct of Research (RCR) (Curriculum Group)
Group 8: Responsible Conduct of Research (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

University of Indianapolis

CITI
 Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w7bb7719b-2f07-4047-afd6-1255887efbaf-29312376



Completion Date 31-Mar-2019
 Expiration Date 30-Mar-2021
 Record ID 31112393

This is to certify that:

Mark Jones

Has completed the following CITI Program course:

Human Subjects Research (HSR) (Curriculum Group)
Group 2: Health Related Research (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

University of Indianapolis

CITI
 Collaborative Institutional Training Initiative