

Impact of Experience in an Urban Social Service Agency on Social Justice Attitudes

Final Project Report – Doctorate in Nursing Practice Program

Beth Doyle

Oregon Health & Science University

School of Nursing

### **Introduction: The Clinical Problem**

In their January 2016 meeting at the Health Resources and Services Administration (HRSA), the National Advisory Council on Nurse Education and Practice (NACNEP) stated that nurses must play an increasing role in all three domains of population health: public health, clinical care, and community/social services. It was further stated that nursing education needs to augment its role in care coordination and data analysis, “with an eye towards decreasing disparities in health and taking on social injustice” (2016, p. 3). Three other national health organizations, The Institute of Medicine (IOM), The American Association of Colleges of Nursing (AACN) and the American Nurses Association (ANA) all support the need for nursing to be more engaged in population health and build a focus on social justice.

And yet, as Kirkham and Browne (2006) point out, while nurses are encouraged to look at broader health concerns such as homelessness or poverty, it is often left to the individual nurse to gain this awareness based on his/her own interests. Less emphasis, therefore, has been put on nursing to address the root causes of the social determinants of health or the impact those determinants can have on their clients' function and wellbeing. While the past decade has demonstrated a swing towards awareness of social justice in nursing education, clear studies on how best to impact change on nurses' attitudes towards social justice are few. Chinn (2014) states that nursing must focus, not predominantly on diagnosis and treatment of disease, but on “nurturing the capacity of all nurses to change conditions of social injustice” (p. 487). Nurses need to enter the workforce not only with skill in clinical procedures but also understanding of why a client might be ‘non-compliant’ due to social circumstances and barriers to health that have nothing to do with the clinical world or ‘lifestyle choices’.

Because it is so vitally important that nurses have the capacity to address the issues that vulnerable clients experience due to social injustice, the IOM recommends that nursing students “be oriented to the principles of social justice, particularly in advocating for the underserved” (Institute of Medicine, 2011, p. 561). In their list of nine Essentials of Baccalaureate Education for Nursing Practice, the AACN has named professionalism and professional values as a key ‘Essential’. They state that the inherent characteristics of professionalism include “altruism, autonomy, human dignity, integrity, and social justice” (American Association of Colleges of Nursing, 2008, p. 4; Groh, Stallwood, & Daniels, 2011). In the last of its nine provisions, the ANA’s Code of Ethics clearly states that nursing as a profession must “integrate principles of social justice into nursing and health policy” (American Nurses Association, 2015, p. 35). This mandate, that social justice education is critical to nursing, through reflection and action, is echoed repeatedly in the literature (Snyder, 2014; Vickers, 2008; Waite & Brooks, 2014). Fahrenwald (2005) goes so far as to refer to it as one of the core values to be taught for nurses. The ANA code of Ethics acknowledges that social justice must be enacted beyond human health, into public policy and the political process and that nurses should be united around these causes.

### **Description of the Problem**

Nurses working in community settings see first-hand the impact that the social determinants of health can have in undermining the best intentions of the health care system. Nursing has historically been a champion of the social justice and overcoming the inequities that lead to health disparities (Thurman & Pfitzinger-Lippe, 2016). Social justice is a concept that nurses have wrestled with since the profession began, and it permeates our code of ethics and our understanding of health equity. Striving for social justice causes us to look at those social

determinates of health with a critical lens and attempt to determine the barriers our clients, populations as well as individuals, face in achieving their health outcomes.

Why is social justice critical to nursing? The American Nurses Association (ANA) defines nursing as “the protection, promotion, and optimization of health and abilities, prevention of illness and injury, facilitation of healing, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, groups, communities, and populations” (American Nurses Association, 2016, para. 1). It might be easy to ignore vulnerable populations, those whom we do not mark as worth our time and effort to serve, yet ignoring social justice ignores the social determinants of health and the impact they have on the health of all our clients and their communities (Myllykoski, 2011). But why social justice is critical to nursing is mostly seen as a mandate for what nursing is – a profession where alleviation of suffering and advocacy define the profession itself. More than anything, it is an ethical consideration that drives to the very heart of nursing practice.

### **Population Affected by the Problem**

The following case study is presented as an illustration of how clients in community settings where there is a history of social injustices are impacted by these issues. The case introduces John, a resident in a very poor and vulnerable community, his struggles with his health care issues, and suggestions of where nursing can have an impact.

**Case presentation.** ‘John’ had lived in a tiny room in a single resident occupancy (SRO) building, with a bathroom down the hall and a communal kitchen that was rarely cleaned, for over 18 years. His parents were Russian immigrants, and though his little brother became a doctor, John’s childhood trauma (years in foster care as his parents’ immigration status was reviewed and rejected) and later mental illness made upward mobility out of his reach. The

biggest wall John faced was pain. He had severe degenerative changes in his spine: cervical, thoracic and lumbar. Some days it was more than he could do to walk a block without back spasms knocking him to his knees. He fought the good fight, practicing mindfulness learned from martial arts and getting acupuncture. His paranoia made trust difficult, but finally two nursing students were able to help him access counseling, a first step on the path to a pain management program through the local federally qualified health center (FQHC). He agreed to go, despite severe misgivings, as long as a nursing student would accompany him. The nursing instructor first met John in the fall, and as Christmas break drew near, she stepped into the client care role her students were preparing to vacate over the holidays. She took on the role of bolstering John's courage to attend his counselling appointments, reassuring him he had support, encouraging him to speak his mind, letting him vent when he felt they were getting nowhere.

Having spent so many years in the system, John had often been labeled a drug seeker – his history of heroin addiction did not help this, though at one time he had been clean for 11 years. He feared even mentioning pain to his counselor, believing he would be judged and doubting he would be given help. Even with the active advocacy of the nursing instructor and several groups of nursing students, we were unable to get him better housing or access to the pain relief he so clearly needed. During that time, his back pain grew notably worse. After losing his mattress to bedbugs, he had only a thin mat to sleep on. The voices in his head turned threatening, to the point that he sometimes spent entire nights huddled under the small table in his room. In pain and fear, he returned to the comfort of his old habit. The weekend after finally filling out the intake paper work that could lead to him accessing a suboxone program, John overdosed for the last time (Bernstein, 2015). He died alone, in his room, weeks from possibly getting the help he needed but only after years of trying and failing to find support.

His story is evidence that the system is broken. Nursing as a profession is positioned to be a buffer between the broken system and the clients we serve. Seeing a client through the lens of social justice, a nurse can combine knowledge of physiology, pathophysiology, and evidence based medicine with the passion to meet the client literally where they live, providing client centered care and advocacy to break down the barriers that slow access to a crawl, while a client's condition continues to deteriorate. In John's case, the nurses most involved with his care were students learning the realities of the barriers faced by marginalized populations. While only available two days per week, their care came too little too late, but they were still able to advocate for the care he needed to overcome both his pain and addiction.

John's case illustrates that, as a nurse, standing up for social justice means helping clients for their own sake, not because they can afford the best care but simply because they are human and deserve our compassion. It means taking a stand and making your voice heard when profits and rules are more important than people. It means running up against barriers on your clients behalf, such that they can achieve the outcomes they most desire and the best health and quality of life available to them. It means looking forward to, and working for, a society where no one has to die in pain, frightened, and alone.

**Linking Case to Practice and Project.** How then do we go about preparing nurses to meet that challenge? Nurses need to enter the workforce with an adequate understanding of social justice and the role nurses can play in making an impact on the social determinants of health. This project is designed to look at the impact of a clinical rotation, working with an inner city social service organization, on social justice attitudes of undergraduate nursing students. While the goal is to learn how to impact nurses to deliver care to vulnerable populations, focusing on nursing student education allows us to measure the attitude change in a group of

soon-to-be nurses and set a course for changing the attitudes of nurses both now and in the coming generations.

**Epidemiology of Poverty and Homelessness in Setting.** Undergraduate nursing students from a variety of nursing programs in Portland, Oregon, have rotations of five to twelve weeks in length and involving various activities related to care for those experiencing poverty and homelessness through social service agencies in Portland's 'Old Town' neighborhood. Despite a slight decline from its peak of 17.5% in 2011, the poverty rate in Oregon has remained nearly static and was 16.6% in 2014 (Oregon Center for Public Policy, 2015). An annual study that counts homeless individuals concluded there are over 3,800 people experiencing homelessness in Multnomah County, which includes the city of Portland (Smock, 2015). While poverty and homelessness are seen throughout the state, Portland's Old Town Neighborhood has historically been and still is a focused area of urban poverty. This setting provided an optimal location to explore the impact of service learning with a marginalized population on the social justice attitudes of nurses.

The project looks at two possible hypotheses: 1) there is a significant positive change in social justice attitudes in the majority of students after their clinical experiences, as evidenced by comparing pre- and post-testing scores on the "Social Justice Attitudes Scale" (Torres-Harding, Siers, & Olson, 2012); and 2) those students whose programs mandate more time and involvement in client care coordination have a greater change in Social Justice Attitudes score than those who do shorter rotations with less focus on intervention. The null hypothesis is that there is no change in social justice attitudes, comparing scores before and after a clinical rotation working in a social service agency with a vulnerable population.

### **Review of Literature**

A literature search was performed using the search terms “social justice” and “nursing education,” limited to publications in the last ten years published in English. Four separate search engines were accessed: CINAHL, PubMed, Nursing Reference Center, and Cochrane Review. After results were merged and duplicates removed, there were 97 results. After deleting those that only referred to simulation, international clinical experiences, or specific racial or ethnic groups, and those that simply did not seem to relate to the topic at all, the list was narrowed to 64. Continued thinning, by review of abstracts to narrow the focus to the topic, has shortened the list to 29, eight of which were of questionable applicability. Two articles were added to address the I-CAN program where the project will occur as well as several recommended articles on service learning and nursing definitions of social justice. In the end, a total of 37 articles, 5 books and two websites contributed to this review.

### **Social Justice in Nursing**

In addressing a definition of social justice from a nursing perspective, it is important to note one of the chief philosophers of social justice, John Rawls' idea that the structure of society “contains various social positions and that men born into different positions have different expectations in life determined, in part, by the political system as well as by economic and social circumstances” (1971, p. 7). Social justice in nursing means facing those systems, learning the ways social issues affect health, and gaining the ability to confront and change those circumstances.

While the nursing literature seems to lack a solid consensus on the definition of social justice, many authors consider it central to the professional practice of nursing (Belknap, 2008; Buettner-Schmidt & Lobo, 2012; Hutchison, 2015; Myllykoski, 2011; Shaw & Degazon, 2008;



Waite & Brooks, 2014). Buettner-Schmidt & Lobo (2012) argued that nurses acting on social justice can significantly impact equitable distribution of the social determinants of health, making a clear case for nursing to develop a social justice framework for professional practice. Others, though in a clear minority, contended that a concept without a clear definition cannot truly be a functional nursing value (Bekemeier & Butterfield, 2005), or in fact, observed that “nurses are not, on mass, consciously organized or organizing to achieve social justice” (Lipscomb, 2011, p. 7). Their arguments highlighted the need for nursing to have a clear definition for social justice if nurses are to be educated and act in ways to promote the concept in professional practice.

There was agreement by many authors on the major attributes of social justice: fairness; equitable distribution of power and resources; the minimization of structural, social and system inequities; and empowerment of disadvantaged or vulnerable populations (Buettner-Schmidt & Lobo, 2012; Fahrenwald et al., 2005; Myllykoski, 2011; Shaw & Degazon, 2008; Torres-Harding et al., 2012). While authors might have differed on whether social justice is an inherent nursing mandate, maximizing nurses' impact on the social determinants of health demands a social justice framework for nursing profession and practice.

In their concept analysis with their goal of “informing the nursing profession about the definition of social justice” (p. 953), Buettner-Schmidt and Lobo (2011) emphatically defended social justice as a concept for the nursing profession as a whole, though they admit nurses may be far from reaching that goal. The definition they came to fits well with the literature and the purpose of this project: “full participation in society and the balancing of benefits and burdens by all citizens, resulting in equitable living and a just ordering of society” (p. 955). Torres-Harding, et al. (2012), whose Social Justice Scale was used in this project, concurred with this and

emphasized that, as in nursing, “participation, collaboration and empowerment are key components of social justice work” (p. 78).

### **Rationale for Including Social Justice as a Critical Nursing Competency**

There has been a strong push in recent years to include social justice as a topic for nursing education. It is considered a competency for both teaching and practice. Schaffer et al. (2011) considered showing evidence of commitment to social justice a basic competency for entry level public health nurses while Fahrenwald, et. al. (2005) referred to it as both a core nursing and public health value that should be prioritized in the undergraduate curriculum. Waite and Brooks (2014) decried the neglect of social justice theory in both nursing education and professional practice. They looked at social justice learning in the broader curriculum sense and agreed with Belknap (2008) and Schaffer (2011) that health disparities, structural inequities (inequalities inherent in a societal system, requiring policy change), and advocacy for vulnerable populations must be principles taught to all students in professional nursing education. Nursing students and therefore by continuation, novice nurses, must “understand that it is their responsibility to be knowledgeable about population health issues and social factors ...that contribute disproportionately to disease and disability among populations” (Waite & Brooks, 2014, p. 890).

To start the process, Vickers (2008) suggested that we must create an awareness that makes social and health access differentials unacceptable in the classroom. She pointed out that students who have only had didactic experience with social justice may well have a false sense of competency in this area, when they unwittingly rely on social stereotypes as substitutes for actual experiences. Belknap (2008) argued for a ‘pedagogy of engagement’ that brings together an entire classroom – considering student preparation, established guidelines, and physical space –

to create an atmosphere that allows students to confront their biases and realize they have the ability to change themselves and the system. It is not enough for social justice theory to be taught, it must be practiced and internalized. It must be made clear that working to overcome social determinants of health is every nurse's responsibility.

Certainly, there is a moral and ethical imperative to teach social justice in the nursing classroom. However, teaching social justice concepts using a purely didactic approach can result in more rhetoric than operationalization of the skills (Fahrenwald et al., 2005; Groh et al., 2011; Mohammed, Cooke, Ezeonwu, & Stevens, 2014). Fahrenwald et al. (2007) argued that "it is imperative that social justice education be based on praxis: a unity of theory and action achieved by a balance of cognitive and affective reflection, research, and action" (p. 194). For this reason, clinical or service learning experience is recommended for imparting social justice concepts (Fahrenwald et al., 2007; Vickers, 2008). Clinical experiences seem to be the next logical step to building a nursing work force that has the demanded competency for understanding and acting on of social justice and impacting the social determinants of health.

### **Clinical Training to Promote Nurses Ability to Address Social Justice**

Because educating to social justice must prepare nurses to be committed to the concept regardless of their clinical role, classroom curriculum is critical to provide social justice context and preparation (Belknap, 2008; Fahrenwald, 2003). However, clinical experience with vulnerable populations presents as an excellent source of praxis for teaching social justice in nursing, providing students an opportunity to translate learning in to action. Service learning – providing a service to that population, not merely approaching the experience for observation and an educational benefit – fits well with the goal of operationalizing the nurses' knowledge. Service learning can be defined as "a teaching and learning strategy that integrates meaningful

community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities” (Groh et al., 2011, p. 400). Gillis and MacLellen (2010), in a comprehensive literature review of service learning data, provided descriptions of the key points of service learning for nursing education:

- a) An activity or service that responds to a need identified by the community members;
- b) A balancing of the service activity provided by students with the achievement of the student's academic objectives;
- c) Authentic community partnerships and reciprocal relationships between the school of nursing and the community;
- d) Structured time to reflect on the complexity inherent in the service issue, the context in which care is provided, the social meaning of the client or population served, and the link to academic objectives (p. 1).

These key points fit well with Nokes' (2005) definition of service learning, especially the emphasis on reciprocity and structured reflection. These activities also fit well with community based participatory research (CBPR) and several articles discuss tying students in with CBPR projects as part of their service learning experience (Gillis & Mac Lellan, 2010; Nokes, Nickitas, Keida, & Neville, 2005; Vickers, 2008).

A major benefit of service learning was presented across the literature as an increased sense of civic responsibility and seeing community service as a critical role for nurses across the nursing spectrum. Short term service learning (3 to 15 hours working with vulnerable communities) has been shown to impact students' views in areas such as respect for human dignity, pursuit of the common good, understanding of social determinants of health, and a sense of civic responsibility. (Barnes, 2016; Gillis & Mac Lellan, 2010; Granger, 2014; Groh et al.,

2011). Groh's work, while looking at a relatively short time span of service learning exposure (10 hours during a semester), had a very large sample over a six year period. For students who completed the program, Groh et al. (2011) demonstrated significant positive changes in leadership constructs such as listening, persuasion, conceptualization and commitment and the promotion of social justice interests such as their opinions of the poor. Service learning has also been shown to effect students' attitudes toward and awareness of the social determinants of health.

Several articles presented different views on service learning as a tool for student learning and to increase their social justice awareness. Granger's activity was a single exposure to a neighborhood with a hypothetical case of a vulnerable family preparing to relocate to the neighborhood and the services, or lack thereof, they find. Though students reported learning about social justice more than they would in the classroom, it seemed a brief and superficial introduction to the problem without real client interaction (Granger, 2014). Pennington's 2010 study went a step further, having their nursing students actually doing outreach to the homeless community in Denver. The stated goals of their project included encouraging nursing students towards lifelong advocacy for social justice. The students worked for 4-6 weeks in either street outreach (shadowing an outreach worker) or homeless shelters to provide warm clothing, minor wound care and referral. Students reported back their assessment of the community based on their encounters and report more positive attitudes and more holistic views of this population (Pennington, Kroh, & Coast, 2010). Only Mohammed, Cook, Ezeonwu & Stevens (2013) looked at the impact of 10 week rotations, but their classes were electives, and the focus was in classroom learning with minimal or no actual service learning.

Boutain (2008) discussed a focus on social justice throughout a curriculum and how that informs clinical learning for nursing students. She presented service learning as the final step in the process. The argument was made that while the American Nurses Association (ANA) sets social justice as an ethical standard, it is poorly defined and weakly supported – lacking any clinical framework for implementation. While Boutain did not describe specific teaching activities, she described three stages of teaching social justice: first, knowledge development – starting as a topic in the second quarter of the junior year; second, knowledge integration/issue identification – taught through the end of the junior and into the senior year throughout the medical/surgical rotations; and finally, action – with implementation taking them into their community health clinical and theory courses. This idea was based on the understanding that “the degree to which learning occurs does not automatically translate into future actions unless students are taught to use and act on social justice principles in clinical practice” (Boutain, 2008, p. 10). She also encouraged faculty development in social justice so that those who teach may never cease to learn.

One example of a service learning project that uses longer term exposure is the Interprofessional Care Access Network (I-CAN) – a collaborative project between Oregon Health & Science University (OHSU) School of Nursing and a number of community service organizations (Wros, Mathews, Voss, & Bookman, 2015). Faculty in the School of Nursing at OHSU have developed this community-academic partnership that brings junior and senior nursing students into a service learning project in the community for an entire quarter of the nursing curriculum (Voss, Mathews, Fossen, Scott, & Schaefer, 2015). I-CAN is based on both community based participatory research (CBPR) and service learning models. This project places nursing students within the partner agencies, working with specific underserved

populations. Student nurses work with vulnerable clients on care coordination, working toward client-centered health goals, attending appointments, and advocating for care. This provides a service learning platform that can promote education for social justice by including what Chinn (2014) describes as the characteristics of emancipatory nursing: facilitating humanization, disrupting social inequities, self-reflection, and engaging communities (Chinn, 2014; Kagan, Smith, & Chinn, 2014).

### **Gaps in the Literature**

While there is much in the literature about service-learning and the value it is for teaching poverty, cultural competence, leadership, policy social justice, and working with vulnerable populations (Barnes, 2016; Groh et al., 2011; O'Brien-Larivée, 2011), there was nothing found about using service learning for an entire quarter and the impact that could have on social justice attitudes. A gap exists in the literature around the impact from a multi-week service learning experience with marginalized populations on social justice attitudes. There was also no noted research on the differing impact of students actively involved in care coordination as opposed to programs that bring students in only for social interaction and observational experiences. For this reason, I focused my project on a comparison of differing lengths of clinical service learning rotations with an urban-centered social service agency and what the effects differing levels of client engagement have on social justice attitudes in nursing students.

### **Purpose**

The purpose of this DNP project was to evaluate the effects of a community based clinical rotation working with a marginalized urban population on nursing attitudes toward social justice. The goal is to better understand how working with a disadvantaged population affects

nurses' attitudes and intentions. By examining this issue among nursing students, the value of similar kinds of training for nurses in practice may be identified.

### **Approach to the Conduct of the Project**

#### **Settings and Participants**

Within the interdisciplinary setting of a social service agency, students are exposed to the role of professional nurses as well as a variety of other professions with whom to learn to collaborate in care coordination. A convenience sample was drawn from undergraduate nursing students from each of three facilities: a University Medical Center (UMC), a Private Liberal Arts University (PLAU), and a Public Community College (PCC). Each of these nursing programs has service learning rotations in Portland's Old Town neighborhood, and each work through the Maybelle Center for Community ("Maybelle Center for Community," 2016) as one of their sites. All participants had rotations with Maybelle Center between the summer of 2016 and winter of 2017.

#### **Project Implementation and Outcome Evaluation**

Each participant was given both the Social Justice Attitudes Survey (Torres-Harding et al., 2012) (Appendix A) and the Demographics Sheet (Appendix B) prior to beginning their clinical rotations. Each sheet was coded with a unique identifier such that pre-test, post-test, and demographic information could be matched by participant at the end of the project. Participants were then given the post-test survey either the week of, or the week after, their final day of clinical experience in Old Town. The UMC clinical groups from the summer 2016, fall of 2016 and winter of 2017 were included in the project. The PLAU rotations were in the fall of 2016 and winter/spring of 2017, and were surveyed those semesters. Two groups of students from the PCC rotated through in winter term of 2017, and both groups participated. While each clinical



group consisted of eight students, participation was voluntary and a few from each group opted out. The final sample size was 51, including 15 each from the PCC and the PLAU and 21 from the UMC.

**Measures/Outcomes Instrument.** The Social Justice Attitudes Survey was developed in Chicago by Dr. Susan Torres-Harding at Roosevelt University (2016). She published the development and evaluation of this scale in 2012. It was used here with her express permission and encouragement (Torres-Harding, personal communication, December 10, 2015), and she also was of assistance in selecting the questions for the demographic survey. It was based on Ajzen's (1991) model, that attitudes toward a behavior, subjective norms around that behavior and one's perceived ability to act ("in a social justice context [this] might involve the extent to which a person feels it is possible to 'make a difference'" (Torres-Harding, 2016, p. 79)) will lead to an intention to engage and finally engagement in that behavior.

The scale consists of four subscales, each designed to assess one aspect of the students' values around social justice, and all are designed with Likert scale measurements on a scale of 1 to 7 – from strongly disagree to strongly agree. Each subscale addresses one component of Ajzen's model: Subscale 1: Attitudes Towards Social Justice, includes eleven items that were developed to "elicit endorsements of social justice values, goals and behaviors" (p. 81); Subscale 2: Perceived Behavioral Control is a five item scale that assesses self-efficacy and confidence towards social justice related goals; Subscale 3: Subjective Norms consists of four items looking at how others support or discourage social justice activities; finally, Subscale 4: Intentions to Engage is four items that look at future intentions for participation in social justice activities. Internal consistency scores were high for each subscale. Cronbach's alpha was used as a measure of the extent to which the subscale items measure the same concept. An alpha ( $\alpha$ )

score of 0.7 or higher is usually acceptable in psychometric testing (Explorable.com, 2010). The score for the entire scale on the first sampling was very high,  $\alpha = 0.93$ . For the individual subscales, the “observed alphas were attitudes  $\alpha = .95$ ; subjective norms  $\alpha = .82$ , perceived behavioral control  $\alpha = .84$ , and intentions  $\alpha = .88$ , indicating strong internal consistency across the four factors” (Torres-Harding, 2016, p. 83). To establish validity, scores were correlated with external measures. All subscales were correlated with “motivation to engage in public service” (p. 83) and negatively correlated with scales evaluating sexism, racism and belief in a just world.

**Ethical Considerations/Participant Protection.** Institutional Review Board (IRB) consent was received from both the UMC and the PLAU and approval was received from the Nursing Program Director at the PCC. A total of 51 students completed both pre and post-test surveys – 15 from the PLAU, 15 from the PCC and 21 from the UMC. Assistance in facilitating the process was received by the clinical nursing faculty from both the PLAU and the PCC, as well as staff from the Maybelle Center for Community (“Maybelle Center for Community,” 2016), one of the partner agencies each group of students works with in Old Town.

Care has been taken to assure that participants in the project were protected. (See IRB Information Sheet – Appendix C). Participation in this project was voluntary and did not influence the students’ grade, clinical placement or standing in any class. Participants who were in courses taught by any one of the investigators were proctored while filling out the surveys by a staff member who was not a part of the investigation team. In this way, students chose whether or not to participate, without their classroom or clinical faculty being aware of their choice. The identifier on each survey, while unique, could not be traced back to the student. Originally, as noted in Appendix C, it was intended to use names as identifiers and then purge them. For better

transparency, a unique identifier was used instead. Undergraduate nursing students/participants were identified for participation by their clinical faculty based on where they have been placed for the clinical rotation, there is no other specific inclusion criteria. While demographic data were obtained, there were no inclusion or exclusion criteria based on student demographics.

**Accuracy of Data/Confidentiality.** Surveys and demographic data are stored in locked cabinets within a locked office. Electronic records are stored on an OHSU encrypted and secure computer. While data collection has been completed for the DNP project portion of this research, the intention is to continue with data collection for another year to have participant numbers more suitable for publication.

Data were entered into an excel spreadsheet as they were received. Comparisons have been made between schools, looking for differences in starting attitudes, changes in pre- and post-clinical survey scores and in length and type of engagement with the vulnerable population. Paired T-tests and analyses of variance were used to assess differences between students' scores from different schools, score changes before and after their clinical experiences – both in the entire scale and in each subscale of the Social Justice Attitudes tool. Demographic data were compared among schools and as a variable in pre-test to post-test changes in score.

### **Implementation of Project**

#### **Evolution of Project over Time**

Thanks to the willing cooperation of all agencies involved, this project was both inexpensive and easy to implement. Approval from IRB boards from both the UMC and the PLAU proved prompt, and the PCC accepted the approval from the UMC as adequate. Dr. Torres-Harding, the author of both the Social Justice Scale (SJS) and the paper documenting its reliability and validity (Torres-Harding et al., 2012), was gracious to allow that we “use the scale

as you see fit, and consider it as public domain” (Torres-Harding, personal communication, December 10, 2015). Nursing faculty from each participating program were both willing and flexible to meet with the investigating faculty and provide access to their student groups for both pre- and post-testing times. Data collection, data entry into spreadsheet and data analysis was done by the author as part of her DNP project hours.

### **Details of Missing Data or Information**

The data were examined for missing data and found to be remarkably complete. The only error that needed to be corrected was in one cohort that miscoded the post-test identification numbers, yet each was able to be matched with the pre-test based on two out of three of the unique identifiers. At least one potential participant from each school chose not to participate, but that still left a final number large enough to be robust for the statistical tests proposed for doing the analysis.

### **Key Findings**

There were two key hypotheses stated at the outset of this project: 1) there will be a significant positive change in social justice attitude in the majority of students after their clinical experiences, as evidenced by comparing pre-and post-testing scores on the SJS, and 2) those students whose programs mandate more time and involvement in client care coordination will have a greater change in score than those who do shorter rotations with less focus on intervention. Parametric tests (T-tests and ANOVAs) were used for analysis despite some notable skewing of the data. According to Frost (2017) these parametric tests are acceptable due to the number of groups and the sample size. The data was positively skewed in that, even in the pre-test, participants scored themselves consistently in the neutral to strongly agree categories with the social justice items in all 4 subscales. Out of 1224 individual data points, on a scale of

one (strongly disagree) to seven (strongly agree), there were only 52 (4.25%) in the pre-tests that were scored at a three or below. In the post-test, only 23 (less than 2%) were three or below.

**Hypothesis 1.** The first hypothesis, that there will be a significant positive change in social justice attitude in the majority of students, is supported. Looking at all 51 participants who completed both pre and post-tests of the SJS scale, the overall change, combining all four subscales, showed a significant increase in attitudes around social justice-related values, attitudes, perceived behavioral control, subjective norms, and intentions,  $t(50) = -5.64$ ,  $p = 0.00000039$ . Looking again at all 51 participants, significant increases in scores were also seen in each of the subscales between pre- and post-testing, with the changes in participants' perception of their own behavioral control to be the most significant: Subscale 1 – Attitudes Toward Social Justice,  $t(50) = -3.04$ ,  $p = 0.00187$ ; Subscale 2 – Perceived Behavioral Control,  $t(50) = -7.04$ ,  $p = 0.0000000027$ ; Subscale 3 – Subjective Norms,  $t(50) = -2.59$ ,  $p = 0.00624$ ; and Subscale 4 – Behavioral Intentions,  $t(50) = -2.91$ ,  $p = 0.00267$ . When looking at the full 24 item SJS, there were significant increases in post-test scores in each school sub-group: UMC,  $t(20) = -4.89$ ,  $p = 0.000043$ ; PLAU,  $t(14) = -2.34$ ,  $p = 0.01718$ ; and PCC,  $t(14) = -2.88$ ,  $p = 0.0061$ . While each group of participants showed clear positive increases in each subscale, when broken down by subscale, only the Perceived Behavioral Control subscale showed significant changes in participants from each of the three schools. See Appendix D for t-test score grid. Although these p-values must be interpreted in light of the fact that they are a small and selected subset of a larger group of p-values and a Bonferroni correction was not used, for the most part the original null hypothesis can be rejected.

**Hypothesis 2.** In considering the second hypothesis, that those whose programs mandate more time and involvement in client care coordination will have a greater change in score, we

must first review the differences in time and involvement with the community for each of the three groups. Both the PLAU and the PCC participated with the Maybelle Center's visitation program – providing home social visits to members living in low income and single resident occupancy buildings. Those participants from the UMC did this as well but also were a part of the I-CAN project. As described earlier, students in this project work closely with individual clients on care coordination, working toward client-centered health goals, attending appointments, and advocating for care. As for hours involved with the Old Town Community, the PLAU students were actively involved for 66 hours over the course of their 11 week semester (L. Presnall, personal communication, September 25, 2016). The PCC students' rotations lasted only five weeks, one half of one quarter, but they were active in the community 70 hours in that period of time (C. Dodson, personal communication, May 5, 2017). The UMC students spend 10 weeks in Old Town and are actively engaged in the community for over 100 hours during those weeks. Considering the higher number of hours and the more intervention focused activities of the UMC participants, if the power were greater, there is potential that the second hypothesis would also be supported. However, a one-way ANOVA was conducted to compare the changes in mean scores among the schools from the pre to post neighborhood experience, and there were no significant differences in change scores among the three different school programs:  $F(2,48) = .939, p = 0.398$ . A power analysis estimating the effect size for the learning experience at 0.25, calculated the power for the above analysis at less than 0.25 for detecting a significant difference. The plan is to collect more data from each school program in the coming year. By collecting data from an increased number of participants, it should be possible to more definitively answer the question as to whether or not increased time and involvement in the setting results in a significant difference among the programs in change in SJS.

**Other Findings.** There were other findings of note that, while not specifically addressed in the original proposal hypotheses, are worth describing here. There were notable differences in the groups' pre-clinical experience score. There were significant differences in their pre-test scores and in the demographic makeup of the different school groups. Some of the demographic variables also were related to the amount of change seen between pre- and post-test scores.

An analysis of variance (ANOVA) was used to compare mean pre-test scores across school groups, noting a statistically significant difference,  $F(2, 48) = 3.42, p = 0.04081$ . The UMC participants started with the highest mean pre-test scores  $M = 6.05(SD = 0.5)$ , followed by the PLAU  $M = 5.99(SD = 0.4)$ , and then the PCC  $M = 5.58(SD = 0.7)$ . A Tukey HSD post hoc test was conducted. The statistically significant difference in overall pre-test scores was only between the UMC and the PCC, (UMC vs PCC:  $p = 0.0421$ ). Similar to the one-way ANOVA testing differences in changes scores, an ANOVA showed no significant differences among the mean post-test scores of the three groups. See Appendix E.

### **Demographic Differences**

Comparisons with demographic groups were also interesting. ANOVA testing showed no significant differences between groups according to their perceived level of engagement in social justice activities or whether the participants considered themselves to be activists or members of a faith community. The ethnicity of the entire sample was 92% Caucasian, with only three students in the entire project identifying as something other than white. While disappointing, this is not unexpected for a sample from Portland, Oregon, which has limited ethnic and racial diversity compared to many other large urban centers.

There were significant differences among groups for age, ( $F(2, 48) = 5.06, p = 0.01$ ); with UMC significantly different from PLAU:  $p=0.03$  and PLAU and PCC significantly different

in years:  $p=0.014$ , again using Tukey HSD post hoc tests. A one-way ANOVA of years of education prior to their current nursing program ( $F(2, 48) = 11.35, p = 0.00000012$ ) demonstrated significant differences in years of education among all three groups with each Tukey Post Hoc test significant (UMC vs PLAU:  $p = 0.0000$ ; UMC vs PCC:  $p = 0.037$ ; PLAU vs PCC:  $p = 0.0009$ ). See also Appendix F.

**Age.** While the UMC students were, on the whole slightly younger than those from the PCC, both of those groups were significantly older than the students from the PLAU. When all participants were broken into groups by age under 30 and age over 30, using t tests separately each age group, both groups showed statistically significant changes in their mean overall attitude scores (Under 30:  $t(35) = -4.51, p = 0.0000068$ ; Over 30:  $t(14) = -3.35, p = 0.00477$ ). Again, using exploratory t tests to examine pre- and post-test changes, those in the under 30 group showed significant changes in every subscale except the Intention to Engage. Here, the younger participants' pre- to post-test changes in scores were not significant ( $t(35) = -1.58, p = 0.122$ ) while the older participants' scores were ( $t(14) = -3.42, p = 0.004$ .) See Appendix G.

**Education.** There were significant differences among all schools on the level of education of their participants at the time of this project. The UMC's participants had the highest levels of education, with more than 70% of their group having a bachelor's degree or higher. The PCC participants were fairly evenly split between those with no prior college degrees up to those with a bachelor's degree, with one participant in that group having a master's degree. The group from the PLAU, along with being the youngest, was also the group with the least education prior to entering this project. Fully 80% of their participants had no prior college degree. Interestingly, while the PLAU students showed significant change in the overall pre-test



post-test scores, theirs was the smallest overall change, and when the results were broken into subscales, their only significant difference was in the Perceived Control scale.

**Activist.** Another interesting finding was the large difference between those who stated at the outset that they considered themselves to be activists and those who did not. The difference in mean pre-test scores in the overall SJS was statistically significant,  $t(49) = -3.52$ ,  $p = 0.00047$  between these two categories. The change in mean scores, as might have been expected, were insignificant for those who already considered themselves to be activists, but highly significant for those who did not,  $t(38) = -5.5$ ,  $p = 0.000000138$ .

## **Outcomes**

### **Comparison to Literature/Expected Results**

There is a clear gap in the literature on the impact of either having long term (five or more weeks) experiences with or providing direct care coordination for marginalized populations on the social justice attitudes of nurses. While nurses' attitudes towards people living in poverty and civic service have been shown to be impacted by service learning, attitudes toward social justice have not, nor has there been a comparison looking at what impact length of service or degree of interaction has on those attitudes and responses. From anecdotal student reports of the changes in their views of their nursing practice after a term working in Portland's Old Town, it was anticipated that they would have more favorable attitudes toward social justice after their rotations were complete. The data in this project show this to be supported. It is hoped that, when published, this project's findings will prompt nurses' interest in doing further research.

### **Difference between Expected and Observed**

The first hypothesis, that experience in the neighborhood would result in significant changes in SJS attitudes, was supported. However, the second hypothesis, that more time in the

neighborhood would result in significant differences among school program participants' change in SJS scores, was not supported. This was probably due to inadequate power to detect a change. The analysis will be repeated once more data has been collected. It was unexpected that there would be such a difference between age groups and that the impact of the service learning would seem to be so much greater in the 30 and under group than it was on those over 30. This should be explored using additional multivariate methods. It was also unexpected how, while pre-test scores were significantly different among schools, post-test scores were not. This again, was probably due to lack of power.

### **Impact on Systems**

While most schools of nursing have a community rotation of one sort or another, practicing nurses rarely are offered an opportunity to be a part of an extended, hands on training opportunity such as this. With the current uncertainties of our health care system and the ever widening wealth gap, nurses need an understanding of social justice and the impact social inequities have on their clients. Having a program such as this available to practicing nurses has the potential to change attitudes toward care of indigent clients even in inpatient settings. Anecdotally, students have reported a huge impact on their approach to discharge planning after having been in clients' homes and seeing first-hand the barriers that are faced to health care access and compliance with proscribed plans. The cost barrier would be time. Finding time for practicing nurses to participate in a service learning experience in the community while working is a challenge yet to be faced. It is entirely possible this will remain only an educational practice, in which case, expanding the time and degree of interaction with clients would clearly expand the impact on the nurses of the next generation.

### **Practice-related Implications/Recommendations**

#### **Practice Implications**

Considering the increased attention on social justice by nursing organizations at the national level, these data are timely for nurses looking for ways to increase awareness and internalize social justice understanding in order to focus on decreasing health disparities. There is strong indication that nurses' attitudes towards social justice and intentions to act on social justice issues increase significantly with work amongst urban, marginalized populations. The first implication is that programs that expose nurses to caring for the underserved populations in their own community be considered not only in pre-licensure nursing education, but across practice sites that care for marginalized clients. While difficult to assign time for an extended experience for non-community-based nurses, working with established community agencies on plans for shorter term service learning may well result in attitude change both in the nurses and positive partnerships for future volunteering by staff now motivated to act on social justice.

The OHSU I-CAN program has found many willing community partner agencies; each refers clients to the program for intensive care coordination. If hospital and clinical practices were to partner more with community social service agencies, opportunities for staff service learning could be developed. While the students in this project worked with the population two days per week during their rotation, volunteer opportunities could be established and encouraged by employers who wished to see a greater civic responsibility and social justice awareness developed in their nursing staff. Social service agencies are notoriously short staffed, and adding a nursing perspective to social worker care coordination could mean better managed care and improved outcomes.

### **Implications for Education**

This project used a convenience sample of undergraduate nursing students. While education may not be the focus for a DNP project, the results show implications for changing social justice attitudes in those moving into a nursing career. Participants observing and interacting with marginalized populations has a significant impact on social justice attitudes, those with prolonged exposure to, developing authentic relationships with, and actively advocating for individuals in this population have the potential to show a greater change. This project has shown that significant changes in nurses' attitudes come by actively engaging in care coordination and experiencing for themselves the barriers their clients face in care access, transportation, and compliance with expected care and discharge plans. Education based in praxis – exercising the art of nursing – and seeing the impact on the lives of their clients, can make a more significant impact on nurses' intentions to act on social justice than merely observing or visiting.

### **Recommended Follow Up**

It is hoped the results of this project can be used in the following four ways. First, it can serve as a platform for dialog among the nursing schools around the types and length of service learning that show the most promise towards impacting students' attitudes around social justice. Already there is some talk between the UMC and the PLAU faculty and staff at the Maybelle Center to discuss what it would take for the PLAU to develop a program similar to I-CAN to more fully engage their students. Second, the project offers a quantitative look at the impact on social justice attitudes that comes from nurses being actively involved in care coordination at the community level. It is hopeful that these data may be used to support grant funding to further the service learning in the I-CAN project at OHSU. The third use is to 'give back' to the Maybelle

Center for Community, whose staff and facilities support the service learning of nurses from many of Portland's schools of nursing without charge. As one of their specific missions is to "educate for social change" ("Educating for Social Change," 2016), the data in this report can contribute to their ability to leverage funding by being able to quantify the impact they are having on future nurses who learn from their experience with Maybelle Center programs, staff, and members. The fourth and final goal is to use the findings to develop a publication, disseminating the impact longer term service learning on nurses' social justice awareness at a time when social justice is being acknowledged as a basic ethical responsibility of nurses in all areas of practice.

### **Limitations**

Certainly there are many factors impacting the lives of nurses or students during a five to ten week period. To say all the change that was measured can be accounted for only by their experiences in the clinical setting is an assumption. There could be impact from didactic coursework (different among the schools) and other life experiences not captured in this project. However, the significant changes seen in each groups' score seem to indicate that the common experience of interaction on a personal level with those living in poverty did have a significant impact on their attitudes and intentions toward social justice.

### **Conclusion**

If nurses are to practice social justice, we must understand how best to teach those values and impact those attitudes. This project addressed the growing need for nurses to be prepared to address issues of social justice and presented programs that give nurses a better understanding of social justice in nursing care. By surveying both baseline and post-clinical student attitudes, we hope to offer some insight into service learning's influence on the social justice attitudes of

nursing students, setting a standard for preparing the nurses of the next decade and beyond. As Matwick and Woodgate (2016) conclude, social justice in nursing is a focus on bringing a better quality of life for all and an integral aspect of nursing ethics. This needs to be presented not only to practicing nurses but to those approaching nursing for the first time, integrated into their education.

Social justice is a nursing value and ethic. It must be a part of how nurses think and inform their approach to client centered care. As experienced nurses or educators, it is our obligation to find the most effective ways to instill this value in the nurses of the next generation. Providing those new nurses with opportunities to interact with, advocate for, and learn from those living in poverty can be a very effective way to impact those attitudes for the better.

### References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- American Association of Colleges of Nursing. (2008, October 20). The Essentials of Baccalaureate Education for Professional Nursing Practice. Retrieved from <http://www.aacn.nche.edu/education-resources/BaccEssentials08.pdf>
- American Nurses Association. (2015). *Code of Ethics for Nurses: with Interpretive Statements*.
- American Nurses Association. (2016). What is Nursing? Retrieved from <http://www.nursingworld.org/EspeciallyForYou/What-is-Nursing>
- Barnes, M. (2016). Impact of service-learning on leadership and an interest in social justice. *The Journal of Nursing Education*, 55(1), 24–30. <https://doi.org/10.3928/01484834-20151214-07>
- Bekemeier, B., & Butterfield, P. (2005). Unreconciled inconsistencies: A critical review of the concept of social justice in 3 national nursing documents. *Advances in Nursing Science*, 28(2), 152–162.
- Belknap, R. A. (2008). Teaching social justice using a pedagogy of engagement: *Nurse Educator*, 33(1), 9–12. <https://doi.org/10.1097/01.NNE.0000299499.24905.39>
- Bernstein, M. (2015, September 4). Portland police arrest two men, seize heroin after drug overdose death. Retrieved from [http://www.oregonlive.com/portland/index.ssf/2015/09/portland\\_police\\_arrest\\_two\\_men\\_3.html](http://www.oregonlive.com/portland/index.ssf/2015/09/portland_police_arrest_two_men_3.html)

- Boutain, D. M. (2008). Social justice as a framework for undergraduate community health clinical experiences in the United States. *International Journal of Nursing Education Scholarship*, 5(1), 1–12.
- Buettner-Schmidt, K., & Lobo, M. L. (2012). Social justice: A concept analysis. *Journal of Advanced Nursing*, 68(4), 948–958. <https://doi.org/10.1111/j.1365-2648.2011.05856.x>
- Chinn, P. L. (2014). Educating for social justice. *Journal of Nursing Education*, 53(9), 487–487. <https://doi.org/10.3928/01484834-20140821-10>
- Educating for Social Change. (2016). Retrieved May 5, 2017, from <http://www.maybellecenter.org/our-work/educating-for-social-change/>
- Explorable.com. (2010, May 7). Cronbach's Alpha - Measurement of Internal Consistency. Retrieved October 16, 2015, from <https://explorable.com/cronbachs-alpha>
- Fahrenwald, N. L. (2003). Teaching social justice. *Nurse Educator*, 28(5), 222–226.
- Fahrenwald, N. L., Bassett, S. D., Tschetter, L., Carson, P. P., White, L., & Winterboer, V. J. (2005). Teaching core nursing values. *Journal of Professional Nursing*, 21(1), 46–51. <https://doi.org/10.1016/j.profnurs.2004.11.001>
- Fahrenwald, N. L., Taylor, J. Y., Kneipp, S. M., & Canales, M. K. (2007). Academic freedom and academic duty to teach social Justice: A perspective and pedagogy for public health nursing faculty. *Public Health Nursing*, 24(2), 190–197. <https://doi.org/10.1111/j.1525-1446.2007.00624.x>
- Frost, J. (2017). Choosing between a nonparametric test and a parametric test. Retrieved from <http://blog.minitab.com/blog/adventures-in-statistics-2/choosing-between-a-nonparametric-test-and-a-parametric-test>



- Gillis, A., & Mac Lellan, M. (2010). Service learning with vulnerable populations: Review of the literature. *International Journal of Nursing Education Scholarship*, 7(1). Retrieved from <http://www.degruyter.com/view/j/ijnes.2010.7.1/ijnes.2010.7.1.2041/ijnes.2010.7.1.2041.xml>
- Granger, T. (2014). Teaching social justice principles in nursing: An active learning community assessment exercise. *Journal of Nursing Education*, 53(9), 544–544.  
<https://doi.org/10.3928/01484834-20140821-11>
- Groh, C. J., Stallwood, L. G., & Daniels, J. J. (2011). Service-learning in nursing education: Its impact on leadership and social justice. *Nursing Education Perspectives*, 32(6), 400–405.
- Hutchison, J. S. (2015). Anti-oppressive practice and reflexive lifeworld-led approaches to care: A framework for teaching nurses about social justice. *Nursing Research and Practice*, 2015, 187508. <https://doi.org/10.1155/2015/187508>
- Institute of Medicine. (2011). *The future of nursing: Leading change, advancing health - committee on the Robert Wood Johnson Foundation Initiative on the Future of Nursing, at the Institute of Medicine*.
- Kagan, P. N., Smith, M. C., & Chinn, P. L. (Eds.). (2014). *Philosophies and Practices of Emancipatory Nursing: Social Justice as Praxis* (1 edition). New York: Routledge.
- Kirkham, S. R., & Browne, A. J. (2006). Toward a critical theoretical interpretation of social justice discourses in nursing. *Advances in Nursing Science*, 29(4), 324–339.
- Lipscomb, M. (2011). Challenging the coherence of social justice as a shared nursing value. *Nursing Philosophy*, 12(1), 4–11.
- Matwick, A. L., & Woodgate, R. L. (2016). Social justice: A concept analysis. *Public Health Nursing*. <https://doi.org/10.1111/phn.12288>

Maybelle Center for Community: Building Community and Connections. (2016). Retrieved from <http://www.maybellecter.org/>

Mohammed, S. A., Cooke, C. L., Ezeonwu, M., & Stevens, C. A. (2014). Sowing the seeds of change: Social justice as praxis in undergraduate nursing education. *Journal of Nursing Education, 53*(9), 488–493. <https://doi.org/10.3928/01484834-20140805-03>

Mylykoski, H. (2011). Social justice: Who cares? *Alberta RN, 67*(4), 28–29 2p.

National Advisory Council on Nurse Education and Practice. (2016). National Advisory Council on Nurse Education and Practice: January 2016 meeting minutes. Retrieved from <http://www.hrsa.gov/advisorycommittees/bhpradvisory/nacnep/Meetings/minutes011216.pdf>

Nokes, K. M., Nickitas, D. M., Keida, R., & Neville, S. (2005). Does service-learning increase cultural competency, critical thinking, and civic engagement? *The Journal of Nursing Education, 44*(2), 65–70.

O'Brien-Larivée, C. (2011). A service-learning experience to teach baccalaureate nursing students about health policy. *The Journal of Nursing Education, 50*(6), 332–336. <https://doi.org/10.3928/01484834-20110317-02>

Oregon Center for Public Policy. (2015, October 22). Poverty in Oregon in six charts. Retrieved from <http://www.ocpp.org/2015/10/22/fs20151022-poverty-oregon-charts/>

Pennington, K., Kroh, M., & Coast, M. J. (2010). Health care for the homeless: A partnership between a city and a school of nursing. *Journal of Nursing Education, 49*(12), 700–703. <https://doi.org/10.3928/01484834-20100930-02>

Rawls, J. (1971). *A Theory of Justice* (Revised).

- Shaw, H. K., & Degazon, C. (2008). Integrating the core professional values of nursing: A profession, not just a career. *Journal of Cultural Diversity, 15*(1), 44.
- Smock, K. (2015, June). 2015 Point-in-Time Count of Homelessness in Portland/Gresham/Multnomah County, Oregon. Retrieved from <https://www.portlandoregon.gov/phb/article/532833>
- Snyder, M. (2014). Emancipatory knowing: Empowering nursing students toward reflection and action. *Journal of Nursing Education*. <https://doi.org/10.3928/01484834-20140107-01>
- Thurman, W., & Pfitzinger-Lippe, M. (2016). Returning to the Profession's Roots: Social Justice in Nursing Education for the 21st Century. *Advances in Nursing Science, 1*. <https://doi.org/10.1097/ANS.0000000000000140>
- Torres-Harding, S. (2016). Social Justice Scale | Susan Torres-Harding @ Roosevelt University. Retrieved April 30, 2017, from <http://blogs.roosevelt.edu/storresharding/socialjusticescale/>
- Torres-Harding, S., Siers, B., & Olson, B. D. (2012). Development and psychometric evaluation of the social justice scale (SJS). *American Journal of Community Psychology, 50*(1–2), 77–88. <https://doi.org/10.1007/s10464-011-9478-2>
- Vickers, D. A. (2008). Social justice: a concept for undergraduate nursing curricula? *Southern Online Journal of Nursing Research, 8*(1), 18p–18p 1p.
- Voss, H. C., Mathews, L. R., Fossen, T., Scott, G., & Schaefer, M. (2015). Community-academic partnerships: Developing a service-learning framework. *Journal of Professional Nursing: Official Journal of the American Association of Colleges of Nursing, 31*(5), 395–401. <https://doi.org/10.1016/j.profnurs.2015.03.008>

Waite, R., & Brooks, S. (2014). Cultivating social justice learning & leadership skills: A timely endeavor for undergraduate student nurses. *Nurse Education Today*, 34(6), 890–893. <https://doi.org/10.1016/j.nedt.2014.02.009>

Wros, P., Mathews, L. R., Voss, H., & Bookman, N. (2015). An academic-practice model to improve the health of underserved neighborhoods. *Family & Community Health*, 38(2), 195–203. <https://doi.org/10.1097/FCH.0000000000000065>

**Appendix A**

**Social Justice Attitudes Scale**

1) Create a unique Identifier that will be used to link your surveys from the start and end of the term:

\_\_\_\_\_ School of Nursing (circle one) OHSU CCC CU  
First 2 letters of Mothers' Maiden Name    Month number of birth (for Jan 01 for Feb 02, etc.)    First and Last of SSN

**Social Justice Attitudes Scale**

This following statements ask you to indicate **how important or how much you value** the following activities. Please answer these questions based, not on whether you actually engage in these activities, but whether you feel that these activities are important and worthwhile.

Please indicate the degree to which you either agree to disagree with the following value statements on a 7-point scale, with 1 = strongly disagree, and 7 = strongly agree.

| I believe that it is important to....                                                                                                              | <i>Strongly Disagree</i> |   | <i>Neutral</i> |   |   | <i>Strongly Agree</i> |   |
|----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---|----------------|---|---|-----------------------|---|
| Make sure that all individuals and groups have a chance to speak and be heard, especially those from traditionally ignored or marginalized groups. | 1                        | 2 | 3              | 4 | 5 | 6                     | 7 |
| Allow individuals and groups to define and describe their problems, experiences, and goals in their own terms.                                     | 1                        | 2 | 3              | 4 | 5 | 6                     | 7 |
| Talk to others about societal systems of power, privilege, and oppression.                                                                         | 1                        | 2 | 3              | 4 | 5 | 6                     | 7 |
| Try to change larger social conditions that cause individual suffering and impede well-being.                                                      | 1                        | 2 | 3              | 4 | 5 | 6                     | 7 |
| Help individuals and groups to pursue their chosen goals in life.                                                                                  | 1                        | 2 | 3              | 4 | 5 | 6                     | 7 |
| Promote the physical and emotional well-being of individuals and groups.                                                                           | 1                        | 2 | 3              | 4 | 5 | 6                     | 7 |

|                                                                                                        |   |   |   |   |   |   |   |
|--------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|
| Respect and appreciate people's diverse social identities.                                             | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Allow others to have meaningful input into decisions affecting their lives.                            | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Support community organizations and institutions that help individuals and groups achieve their aims.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Promote fair and equitable allocation of bargaining powers, obligations, and resources in our society. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Act for social justice.                                                                                | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

In the following set of questions, please indicate the extent to which you agree or disagree with each statement on a 1-7 scale, with 1 = strongly disagree, and 7 = strongly agree.

| <b>Perceived Behavioral Control around Social Justice</b>                                                                              | <i>Strongly Disagree</i> |   |   | <i>Neutral</i> |   | <i>Strongly Agree</i> |   |
|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---|---|----------------|---|-----------------------|---|
| I am confident that I can have a positive impact on others' lives.                                                                     | 1                        | 2 | 3 | 4              | 5 | 6                     | 7 |
| I am certain that I possess an ability to work with individuals and groups in ways that are empowering.                                | 1                        | 2 | 3 | 4              | 5 | 6                     | 7 |
| If I choose to do so, I am capable of influencing others to promote fairness and equality.                                             | 1                        | 2 | 3 | 4              | 5 | 6                     | 7 |
| I feel confident in my ability to talk to others about social injustices and the impact of social conditions on health and well-being. | 1                        | 2 | 3 | 4              | 5 | 6                     | 7 |
| I am certain that if I try, I can have a positive impact on my community.                                                              | 1                        | 2 | 3 | 4              | 5 | 6                     | 7 |

| <b>Subjective Norms around Social Justice</b>                                                          | <i>Strongly Disagree</i> |   |   | <i>Neutral</i> |   | <i>Strongly Agree</i> |   |
|--------------------------------------------------------------------------------------------------------|--------------------------|---|---|----------------|---|-----------------------|---|
| Other people around me are engaged in activities that address social justice issues.                   | 1                        | 2 | 3 | 4              | 5 | 6                     | 7 |
| Other people around me feel that it is important to engage in dialogue around societal injustices.     | 1                        | 2 | 3 | 4              | 5 | 6                     | 7 |
| Other people around me are supportive of efforts that promote social justice.                          | 1                        | 2 | 3 | 4              | 5 | 6                     | 7 |
| Other people around me are aware of issues of social injustices and power inequalities in our society. | 1                        | 2 | 3 | 4              | 5 | 6                     | 7 |

| <b>Intentions to Engage in Social Justice</b>                                                                                                             | <i>Strongly Disagree</i> |   | <i>Neutral</i> |   |   | <i>Strongly Agree</i> |   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---|----------------|---|---|-----------------------|---|
| In the future, I will do my best to ensure that all individuals and groups in my community have a chance to speak and be heard.                           | 1                        | 2 | 3              | 4 | 5 | 6                     | 7 |
| In the future, I intend to talk with others about social power inequalities, social injustices, and the impact of social forces on health and well-being. | 1                        | 2 | 3              | 4 | 5 | 6                     | 7 |
| In the future, I intend to engage in activities that will promote social justice.                                                                         | 1                        | 2 | 3              | 4 | 5 | 6                     | 7 |
| In the future, I intend to work collaboratively with others so that they can define their own problems and build their own capacity to solve problems.    | 1                        | 2 | 3              | 4 | 5 | 6                     | 7 |

Torres-Harding, S.R., Siers, B., & Olson, B. (2012). Development and Psychometric Evaluation of the Social Justice

Scale (SJS). *American Journal of Community Psychology*, 59 (1-2), 77-88. doi: 10.1007/s10464-0111-9478-2

**Appendix B**

**Demographic Data**

1) Create a unique Identifier that will be used to link your surveys from the start and end of the term:

\_\_\_\_\_ School of Nursing (circle one) OHSU CCC CU  
 First 2 letters of Mothers' Maiden Name    Month number of birth (for Jan 01 for Feb 02, etc.)    First and Last of SSN

| CATEGORY                                                      | CIRCLE THE MOST APPROPRIATE DESCRIPTION FOR YOURSELF |                          |                 |                             |                   |                   |
|---------------------------------------------------------------|------------------------------------------------------|--------------------------|-----------------|-----------------------------|-------------------|-------------------|
| <b>2) AGE</b>                                                 | Under 20                                             | 21-30                    | 31-40           | 41-50                       | 51 and over       |                   |
| <b>3) GENDER YOU IDENTIFY AS</b>                              | Male                                                 | Female                   | Trans           | Decline to answer           |                   |                   |
| <b>4) ETHNICITY (mark as many as are appropriate for you)</b> | Caucasian                                            | African American / Black | Asian           | Hawaiian / Pacific Islander | Native American   | Hispanic / Latino |
| <b>5) EDUCATIONAL BACKGROUND</b>                              | High School and pre-requisites only                  | Some College – no degree | College degree  | Bachelors                   | Masters or Higher |                   |
| <b>6) CURRENT PERSONAL FINANCIAL SECURITY</b>                 | Very Secure                                          | Secure                   | Somewhat Secure | Somewhat Insecure           | Insecure          | Very Insecure     |

7) Do you consider yourself part of a faith community (circle one)?    YES    NO

8) Are you currently engaged in any activities that you feel promote social justice, or did you engage in any social justice activities sometime during the past 6 months? YES    NO  
 If you answered "YES", what are you doing? (brief but specific): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

9) Do you identify yourself as an activist?    YES    NO



**Appendix C**

OREGON  
HEALTH & SCIENCE  
UNIVERSITY

**Information Sheet**

IRB#15647

---

**TITLE:** Effects of a Clinical Rotation in an Urban Social Service Agency on Social Justice Attitudes of Undergraduate Nursing Students

**PRINCIPAL INVESTIGATOR:** Deborah Messecar (503) 494-3573

**CO-INVESTIGATORS:** Beth Doyle (503) 494-6823,  
Kathie Lasater (503) 494-8325

**PURPOSE:**

You have been invited to be in this study because you are an undergraduate nursing student participating in a rotation at Macdonald Center in Portland, OR. The purpose of this study is to evaluate the effects of a clinical rotation working out of a social service agency on nursing student attitudes toward social justice. Our goal is to better understand how a rotation working with a disadvantaged population affects students' attitudes and intentions.

**PROCEDURES:**

Your participation in this study is voluntary. In the course of the study you will be asked to fill out a series of 3 brief questionnaires, two before starting your rotation and one after. Demographic data collected in the questionnaires will be summarized across individuals and not reported by person. There may be a focus group or some follow up questions at the end of the study for a selected number of participants. If you were requested to participate in either of these, you would be contacted through your clinical faculty at your institution.

The duration of your participation in this project (should you decide to participate) will last from just prior to starting your rotation (1 week prior at the most) until the completion of your rotation. The focus group interview will be between 2 and 4 weeks after the completion of the post-survey.

You will be asked to be true to your own self as possible when answering these questions. There are no right or wrong answers so please do not seek others' opinions, just answer from your own experience and feelings. Participation (or declining to participate) will in no way effect your participation or grade in your course. Your data will be kept confidential, your names only used to assure your pre- and post-questionnaires can be linked. After that is accomplished your name will be removed.

If you have any questions, concerns, or complaints regarding this study now or in the future, or you think you may have been injured or harmed by the study, contact Beth Doyle @ 503-494-6823.

**RISKS:**

Although we have made every effort to protect your identity, there is a minimal risk of loss of confidentiality.

**BENEFITS:**

You may or may not benefit from being in this study. However, by serving as a subject, you may help us learn how to benefit students in the future.

**CONFIDENTIALITY:**

In this study you will be completing questionnaires that you will turn in with your name on them. The names will only be used to match pre and post and demographic questionnaire to an individual respondent. After a number has been assigned to make sure individual responses are matched names will be removed from all responses to the questionnaires.

**COSTS:** It will not cost you anything to participate in this study.

**PARTICIPATION:**

This research is being overseen by an Institutional Review Board ("IRB"). You may talk to the IRB at (503) 494-7887 or [irb@ohsu.edu](mailto:irb@ohsu.edu) if:

- Your questions, concerns, or complaints are not being answered by the research team.
- You want to talk to someone besides the research team.
- You have questions about your rights as a research subject.
- You want to get more information or provide input about this research.

You may also submit a report to the OHSU Integrity Hotline online at <https://secure.ethicspoint.com/domain/media/en/gui/18915/index.html> or by calling toll-free (877) 733-8313 (anonymous and available 24 hours a day, 7 days a week).

You do not have to join this or any research study. If you do join, and later change your mind, you may quit at any time. If you refuse to join or withdraw early from the study, there will be no penalty or loss of any benefits to which you are otherwise entitled.

Should you choose to participate, but then want or need to withdraw from the study, we ask you to inform your clinical faculty member so that he/she may then inform the study team. You will be free to withdraw at any time, but it will assist the faculty doing the study to know why you withdrew (though you will not be required to disclose that).

The participation of OHSU students or employees in OHSU research is completely voluntary and you are free to choose not to serve as a research subject in this protocol for any reason. If you do elect to participate in this study, you may withdraw from the study at any time without affecting your relationship with OHSU, the investigator, the investigator's department, or your grade in any course. If you would like to report a concern with regard to participation of OHSU students or employees in OHSU research, please call the OHSU Integrity Hotline at 1-877-733-8313 (toll free and anonymous).

Appendix D

Note – Throughout these appendices, two tailed test are highlighted but one tail statistics were most frequently cited.

| All schools combined                          |              |             | OHSU                                             |              |             | Concordia                                           |              |             | Clackamas                                     |              |             |
|-----------------------------------------------|--------------|-------------|--------------------------------------------------|--------------|-------------|-----------------------------------------------------|--------------|-------------|-----------------------------------------------|--------------|-------------|
| T-Test - overall means for pre and post tests |              |             | T-Test - overall means for pre and post tests    |              |             | T-Test - overall means for pre and post tests       |              |             | T-Test - overall means for pre and post tests |              |             |
| t-Test: Paired Two Sample for Means           |              |             | t-Test: Paired Two Sample for Means              |              |             | t-Test: Paired Two Sample for Means                 |              |             | t-Test: Paired Two Sample for Means           |              |             |
|                                               | Variable 1   | Variable 2  |                                                  | Variable 1   | Variable 2  |                                                     | Variable 1   | Variable 2  |                                               | Variable 1   | Variable 2  |
| Mean                                          | 5.897875817  | 6.284313725 | Mean                                             | 6.047619048  | 6.452380952 | Mean                                                | 5.997222222  | 6.25        | Mean                                          | 5.588888889  | 6.083333333 |
| Variance                                      | 0.328702342  | 0.345535131 | Variance                                         | 0.24952877   | 0.25890377  | Variance                                            | 0.164302249  | 0.159970238 | Variance                                      | 0.50666336   | 0.617311508 |
| Observations                                  | 51           | 51          | Observations                                     | 21           | 21          | Observations                                        | 15           | 15          | Observations                                  | 15           | 15          |
| Pearson Correlation                           | 0.645059287  |             | Pearson Correlation                              | 0.717682991  |             | Pearson Correlation                                 | 0.462003292  |             | Pearson Correlation                           | 0.608445456  |             |
| Hypothesized Mean                             | 0            |             | Hypothesized Mean                                | 0            |             | Hypothesized Mean                                   | 0            |             | Hypothesized Mean                             | 0            |             |
| df                                            | 50           |             | df                                               | 20           |             | df                                                  | 14           |             | df                                            | 14           |             |
| t Stat                                        | -5.639719303 |             | t Stat                                           | -4.894747105 |             | t Stat                                              | -2.343813336 |             | t Stat                                        | -2.875781126 |             |
| P(T<=t) one-tail                              | 3.9506E-07   |             | P(T<=t) one-tail                                 | 4.37898E-05  |             | P(T<=t) one-tail                                    | 0.017183084  |             | P(T<=t) one-tail                              | 0.006106261  |             |
| t Critical one-tail                           | 1.675905025  |             | t Critical one-tail                              | 1.724718243  |             | t Critical one-tail                                 | 1.761310136  |             | t Critical one-tail                           | 1.761310136  |             |
| P(T<=t) two-tail                              | 7.90119E-07  |             | P(T<=t) two-tail                                 | 8.75795E-05  |             | P(T<=t) two-tail                                    | 0.034366167  |             | P(T<=t) two-tail                              | 0.012212522  |             |
| t Critical two-tail                           | 2.008559112  |             | t Critical two-tail                              | 2.085963447  |             | t Critical two-tail                                 | 2.144786688  |             | t Critical two-tail                           | 2.144786688  |             |
| T-Test - Intention to Engage Means            |              |             | T-Test - Intention to Engage Means               |              |             | T-Test - Intention to Engage Means                  |              |             | T-Test - Intention to Engage Means            |              |             |
| t-Test: Paired Two Sample for Means           |              |             | t-Test: Paired Two Sample for Means              |              |             | t-Test: Paired Two Sample for Means                 |              |             | t-Test: Paired Two Sample for Means           |              |             |
|                                               | Variable 1   | Variable 2  |                                                  | Variable 1   | Variable 2  |                                                     | Variable 1   | Variable 2  |                                               | Variable 1   | Variable 2  |
| Mean                                          | 5.906862745  | 6.284313725 | Mean                                             | 6.047619048  | 6.452380952 | Mean                                                | 6.1          | 6.283333333 | Mean                                          | 5.516666667  | 6.05        |
| Variance                                      | 0.957401961  | 0.73504902  | Variance                                         | 0.728869048  | 0.553869048 | Variance                                            | 0.578571429  | 0.605952381 | Variance                                      | 1.566666667  | 1.126785714 |
| Observations                                  | 51           | 51          | Observations                                     | 21           | 21          | Observations                                        | 15           | 15          | Observations                                  | 15           | 15          |
| Pearson Correlation                           | 0.498586852  |             | Pearson Correlation                              | 0.441482791  |             | Pearson Correlation                                 | 0.265397548  |             | Pearson Correlation                           | 0.604133198  |             |
| Hypothesized Mean                             | 0            |             | Hypothesized Mean                                | 0            |             | Hypothesized Mean                                   | 0            |             | Hypothesized Mean                             | 0            |             |
| df                                            | 50           |             | df                                               | 20           |             | df                                                  | 14           |             | df                                            | 14           |             |
| t Stat                                        | -2.913574808 |             | t Stat                                           | -2.183348417 |             | t Stat                                              | -0.761146087 |             | t Stat                                        | -1.980208419 |             |
| P(T<=t) one-tail                              | 0.002665292  |             | P(T<=t) one-tail                                 | 0.020548828  |             | P(T<=t) one-tail                                    | 0.229599683  |             | P(T<=t) one-tail                              | 0.033841344  |             |
| t Critical one-tail                           | 1.675905025  |             | t Critical one-tail                              | 1.724718243  |             | t Critical one-tail                                 | 1.761310136  |             | t Critical one-tail                           | 1.761310136  |             |
| P(T<=t) two-tail                              | 0.005330583  |             | P(T<=t) two-tail                                 | 0.041097656  |             | P(T<=t) two-tail                                    | 0.459199367  |             | P(T<=t) two-tail                              | 0.067682688  |             |
| t Critical two-tail                           | 2.008559112  |             | t Critical two-tail                              | 2.085963447  |             | t Critical two-tail                                 | 2.144786688  |             | t Critical two-tail                           | 2.144786688  |             |
| T-Test - Subjective Norms Means               |              |             | T-Test - Subjective Norms Means                  |              |             | T-Test - Subjective Norms Means                     |              |             | T-Test - Subjective Norms Means               |              |             |
| t-Test: Paired Two Sample for Means           |              |             | t-Test: Paired Two Sample for Means              |              |             | t-Test: Paired Two Sample for Means                 |              |             | t-Test: Paired Two Sample for Means           |              |             |
|                                               | Variable 1   | Variable 2  |                                                  | Variable 1   | Variable 2  |                                                     | Variable 1   | Variable 2  |                                               | Variable 1   | Variable 2  |
| Mean                                          | 5.06372549   | 5.509803922 | Mean                                             | 5.285714286  | 5.880952381 | Mean                                                | 5.083333333  | 5.1         | Mean                                          | 4.733333333  | 5.4         |
| Variance                                      | 1.294607843  | 1.224901961 | Variance                                         | 1.226785714  | 0.760119048 | Variance                                            | 1.068452381  | 1.471428571 | Variance                                      | 1.611309524  | 1.417857143 |
| Observations                                  | 51           | 51          | Observations                                     | 21           | 21          | Observations                                        | 15           | 15          | Observations                                  | 15           | 15          |
| Pearson Correlation                           | 0.400519087  |             | Pearson Correlation                              | 0.587124955  |             | Pearson Correlation                                 | 0.580353233  |             | Pearson Correlation                           | 0.072657653  |             |
| Hypothesized Mean                             | 0            |             | Hypothesized Mean                                | 0            |             | Hypothesized Mean                                   | 0            |             | Hypothesized Mean                             | 0            |             |
| df                                            | 50           |             | df                                               | 20           |             | df                                                  | 14           |             | df                                            | 14           |             |
| t Stat                                        | -2.59176177  |             | t Stat                                           | -2.953465562 |             | t Stat                                              | -0.06198332  |             | t Stat                                        | -1.540415968 |             |
| P(T<=t) one-tail                              | 0.006242343  |             | P(T<=t) one-tail                                 | 0.003927879  |             | P(T<=t) one-tail                                    | 0.475726168  |             | P(T<=t) one-tail                              | 0.07287647   |             |
| t Critical one-tail                           | 1.675905025  |             | t Critical one-tail                              | 1.724718243  |             | t Critical one-tail                                 | 1.761310136  |             | t Critical one-tail                           | 1.761310136  |             |
| P(T<=t) two-tail                              | 0.012484686  |             | P(T<=t) two-tail                                 | 0.007855758  |             | P(T<=t) two-tail                                    | 0.951452335  |             | P(T<=t) two-tail                              | 0.14575294   |             |
| t Critical two-tail                           | 2.008559112  |             | t Critical two-tail                              | 2.085963447  |             | t Critical two-tail                                 | 2.144786688  |             | t Critical two-tail                           | 2.144786688  |             |
| T-Test - Perceived Control Means              |              |             | T-Test - Perceived Control Means                 |              |             | T-Test - Perceived Control Means                    |              |             | T-Test - Perceived Control Means              |              |             |
| t-Test: Paired Two Sample for Means           |              |             | t-Test: Paired Two Sample for Means              |              |             | t-Test: Paired Two Sample for Means                 |              |             | t-Test: Paired Two Sample for Means           |              |             |
|                                               | Variable 1   | Variable 2  |                                                  | Variable 1   | Variable 2  |                                                     | Variable 1   | Variable 2  |                                               | Variable 1   | Variable 2  |
| Mean                                          | 5.231372549  | 6.078431373 | Mean                                             | 5.180952381  | 6.114285714 | Mean                                                | 5.4          | 6.16        | Mean                                          | 5.133333333  | 5.946666667 |
| Variance                                      | 0.704596078  | 0.68172549  | Variance                                         | 0.711619048  | 0.766285714 | Variance                                            | 0.462857143  | 0.475428571 | Variance                                      | 0.992380952  | 0.836952381 |
| Observations                                  | 51           | 51          | Observations                                     | 21           | 21          | Observations                                        | 15           | 15          | Observations                                  | 15           | 15          |
| Pearson Correlation                           | 0.467329208  |             | Pearson Correlation                              | 0.561023187  |             | Pearson Correlation                                 | 0.578614666  |             | Pearson Correlation                           | 0.293648263  |             |
| Hypothesized Mean                             | 0            |             | Hypothesized Mean                                | 0            |             | Hypothesized Mean                                   | 0            |             | Hypothesized Mean                             | 0            |             |
| df                                            | 50           |             | df                                               | 20           |             | df                                                  | 14           |             | df                                            | 14           |             |
| t Stat                                        | -7.039005456 |             | t Stat                                           | -5.307775862 |             | t Stat                                              | -4.680855117 |             | t Stat                                        | -2.76905181  |             |
| P(T<=t) one-tail                              | 2.60718E-09  |             | P(T<=t) one-tail                                 | 1.7008E-05   |             | P(T<=t) one-tail                                    | 0.000176889  |             | P(T<=t) one-tail                              | 0.007535137  |             |
| t Critical one-tail                           | 1.675905025  |             | t Critical one-tail                              | 1.724718243  |             | t Critical one-tail                                 | 1.761310136  |             | t Critical one-tail                           | 1.761310136  |             |
| P(T<=t) two-tail                              | 5.21435E-09  |             | P(T<=t) two-tail                                 | 3.4016E-05   |             | P(T<=t) two-tail                                    | 0.000353778  |             | P(T<=t) two-tail                              | 0.015070273  |             |
| t Critical two-tail                           | 2.008559112  |             | t Critical two-tail                              | 2.085963447  |             | t Critical two-tail                                 | 2.144786688  |             | t Critical two-tail                           | 2.144786688  |             |
| T-Test - Social Justice Attitudes Means       |              |             | T-Test - Social Justice Attitudes Means          |              |             | T-Test - Social Justice Attitudes Means             |              |             | T-Test - Social Justice Attitudes Means       |              |             |
| t-Test: Paired Two Sample for Means           |              |             | t-Test: Paired Two Sample for Means              |              |             | t-Test: Paired Two Sample for Means                 |              |             | t-Test: Paired Two Sample for Means           |              |             |
|                                               | Variable 1   | Variable 2  |                                                  | Variable 1   | Variable 2  |                                                     | Variable 1   | Variable 2  |                                               | Variable 1   | Variable 2  |
| Mean                                          | 6.500891266  | 6.659536542 | Mean                                             | 6.718614719  | 6.813852814 | Mean                                                | 6.563636364  | 6.696969697 | Mean                                          | 6.133333333  | 6.406060606 |
| Variance                                      | 0.327726462  | 0.262427483 | Variance                                         | 0.129673357  | 0.078905943 | Variance                                            | 0.140731995  | 0.118850846 | Variance                                      | 0.624399843  | 0.599606454 |
| Observations                                  | 51           | 51          | Observations                                     | 21           | 21          | Observations                                        | 15           | 15          | Observations                                  | 15           | 15          |
| Pearson Correlation                           | 0.769547408  |             | Pearson Correlation                              | 0.632803933  |             | Pearson Correlation                                 | 0.401672135  |             | Pearson Correlation                           | 0.833300673  |             |
| Hypothesized Mean                             | 0            |             | Hypothesized Mean                                | 0            |             | Hypothesized Mean                                   | 0            |             | Hypothesized Mean                             | 0            |             |
| df                                            | 50           |             | df                                               | 20           |             | df                                                  | 14           |             | df                                            | 14           |             |
| t Stat                                        | -3.041104849 |             | t Stat                                           | -1.537672189 |             | t Stat                                              | -1.308755613 |             | t Stat                                        | -2.337183721 |             |
| P(T<=t) one-tail                              | 0.001873536  |             | P(T<=t) one-tail                                 | 0.069899988  |             | P(T<=t) one-tail                                    | 0.105847115  |             | P(T<=t) one-tail                              | 0.017401377  |             |
| t Critical one-tail                           | 1.675905025  |             | t Critical one-tail                              | 1.724718243  |             | t Critical one-tail                                 | 1.761310136  |             | t Critical one-tail                           | 1.761310136  |             |
| P(T<=t) two-tail                              | 0.003747073  |             | P(T<=t) two-tail                                 | 0.139799976  |             | P(T<=t) two-tail                                    | 0.211694231  |             | P(T<=t) two-tail                              | 0.034802754  |             |
| t Critical two-tail                           | 2.008559112  |             | t Critical two-tail                              | 2.085963447  |             | t Critical two-tail                                 | 2.144786688  |             | t Critical two-tail                           | 2.144786688  |             |
|                                               |              |             | Highlighted in Green - Statistically Significant |              |             | Highlighted in Pink - Not Statistically Significant |              |             |                                               |              |             |

Appendix E

| Pretest Overall Means |           |       | Posttest Overall Means |           |       | Overall Differences |           |        | Anova: Single Factor Comparison of pre-post change between groups |            |           |          |          |          |          |  |
|-----------------------|-----------|-------|------------------------|-----------|-------|---------------------|-----------|--------|-------------------------------------------------------------------|------------|-----------|----------|----------|----------|----------|--|
| OHSU                  | Concordia | CCC   | OHSU                   | Concordia | CCC   | OHSU                | Concordia | CCC    |                                                                   |            |           |          |          |          |          |  |
| 5.917                 | 6.042     | 5.292 | 6.417                  | 6.375     | 4.667 | 0.500               | 0.333     | -0.625 |                                                                   |            |           |          |          |          |          |  |
| 5.417                 | 5.208     | 4.542 | 6.333                  | 5.583     | 6.333 | 0.916               | 0.375     | 1.791  |                                                                   |            |           |          |          |          |          |  |
| 5.750                 | 6.250     | 3.958 | 6.292                  | 5.917     | 4.083 | 0.542               | -0.333    | 0.125  |                                                                   |            |           |          |          |          |          |  |
| 5.625                 | 6.042     | 5.625 | 6.083                  | 6.542     | 6.667 | 0.458               | 0.500     | 1.042  |                                                                   |            |           |          |          |          |          |  |
| 5.375                 | 5.500     | 5.167 | 4.833                  | 6.375     | 6.417 | -0.542              | 0.875     | 1.250  |                                                                   |            |           |          |          |          |          |  |
| 5.792                 | 6.083     | 5.708 | 6.250                  | 6.250     | 5.917 | 0.458               | 0.167     | 0.209  |                                                                   |            |           |          |          |          |          |  |
| 5.833                 | 6.000     | 5.208 | 6.125                  | 5.833     | 6.292 | 0.292               | -0.167    | 1.084  |                                                                   |            |           |          |          |          |          |  |
| 5.708                 | 6.542     | 6.458 | 5.875                  | 6.667     | 6.542 | 0.167               | 0.125     | 0.084  |                                                                   |            |           |          |          |          |          |  |
| 5.958                 | 5.792     | 5.083 | 6.708                  | 6.000     | 5.917 | 0.750               | 0.208     | 0.834  |                                                                   |            |           |          |          |          |          |  |
| 6.375                 | 6.542     | 5.875 | 7.000                  | 6.958     | 6.042 | 0.625               | 0.416     | 0.167  |                                                                   |            |           |          |          |          |          |  |
| 6.000                 | 5.833     | 6.208 | 6.000                  | 6.500     | 6.375 | 0.000               | 0.667     | 0.167  |                                                                   |            |           |          |          |          |          |  |
| 6.292                 | 6.625     | 6.292 | 6.708                  | 6.208     | 5.667 | 0.416               | -0.417    | -0.625 |                                                                   |            |           |          |          |          |          |  |
| 5.708                 | 5.708     | 6.167 | 6.458                  | 5.583     | 6.792 | 0.750               | -0.125    | 0.625  |                                                                   |            |           |          |          |          |          |  |
| 6.125                 | 6.208     | 6.000 | 6.792                  | 6.333     | 6.542 | 0.667               | 0.125     | 0.542  |                                                                   |            |           |          |          |          |          |  |
| 6.625                 | 5.583     | 6.250 | 6.958                  | 6.625     | 7.000 | 0.333               | 1.042     | 0.750  |                                                                   |            |           |          |          |          |          |  |
| 6.625                 |           |       | 6.833                  |           |       | 0.208               |           |        |                                                                   |            |           |          |          |          |          |  |
| 5.125                 |           |       | 6.417                  |           |       | 1.292               |           |        |                                                                   |            |           |          |          |          |          |  |
| 6.333                 |           |       | 6.625                  |           |       | 0.292               |           |        |                                                                   |            |           |          |          |          |          |  |
| 6.750                 |           |       | 6.792                  |           |       | 0.042               |           |        |                                                                   |            |           |          |          |          |          |  |
| 6.875                 |           |       | 7.000                  |           |       | 0.125               |           |        |                                                                   |            |           |          |          |          |          |  |
| 6.792                 |           |       | 7.000                  |           |       | 0.208               |           |        |                                                                   |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | ANOVA                                                             |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Source of Variation                                               | SS         | df        | MS       | F        | P-value  | F crit   |  |
|                       |           |       |                        |           |       |                     |           |        | Between Groups                                                    | 0.45087    | 2         | 0.225435 | 0.939122 | 0.398036 | 3.190727 |  |
|                       |           |       |                        |           |       |                     |           |        | Within Groups                                                     | 11.52234   | 48        | 0.240049 |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Total                                                             | 11.97321   | 50        |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | SUMMARY                                                           |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Groups                                                            | Count      | Sum       | Average  | Variance |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | OHSU                                                              | 21         | 8.499     | 0.404714 | 0.143625 |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Concordia                                                         | 15         | 3.791     | 0.252733 | 0.174531 |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | CCC                                                               | 15         | 7.42      | 0.494667 | 0.443315 |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Starting Point Differences                                        |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Anova: Single Factor Comparison of PRETEST means for all 3 groups |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | OSHU - Concordia                                                  |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | t-Test: Two-Sample Assuming Unequal Variances                     |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | SUMMARY                                                           |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Groups                                                            | Count      | Sum       | Average  | Variance |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | OHSU                                                              | 21         | 127       | 6.047619 | 0.249551 |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Concordia                                                         | 15         | 89.958    | 5.9972   | 0.164413 |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | CCC                                                               | 15         | 83.833    | 5.588867 | 0.506684 |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | ANOVA                                                             |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Source of Variation                                               | SS         | df        | MS       | F        | P-value  | F crit   |  |
|                       |           |       |                        |           |       |                     |           |        | Between Groups                                                    | 2.05116295 | 2         | 1.025581 | 3.421842 | 0.040809 | 3.190727 |  |
|                       |           |       |                        |           |       |                     |           |        | Within Groups                                                     | 14.3863771 | 48        | 0.299716 |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Total                                                             | 16.43754   | 50        |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Concordia - CCC                                                   |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | t-Test: Two-Sample Assuming Unequal Variances                     |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | SUMMARY                                                           |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Groups                                                            | Count      | Sum       | Average  | Variance |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | OHSU                                                              | 21         | 135.499   | 6.452333 | 0.258942 |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Concordia                                                         | 15         | 93.749    | 6.249933 | 0.160036 |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | CCC                                                               | 15         | 91.253    | 6.083533 | 0.617421 |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | ANOVA                                                             |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Source of Variation                                               | SS         | df        | MS       | F        | P-value  | F crit   |  |
|                       |           |       |                        |           |       |                     |           |        | Between Groups                                                    | 1.215264   | 2         | 0.607632 | 1.81572  | 0.173719 | 3.190727 |  |
|                       |           |       |                        |           |       |                     |           |        | Within Groups                                                     | 16.06323   | 48        | 0.334651 |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Total                                                             | 17.2785    | 50        |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | OSHU - CCC                                                        |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | t-Test: Two-Sample Assuming Unequal Variances                     |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | SUMMARY                                                           |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Variable 1                                                        | Variable 2 | Count     | Sum      | Average  | Variance |          |  |
|                       |           |       |                        |           |       |                     |           |        | Mean                                                              | 6.04761905 | 5.5888667 |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Variance                                                          | 0.24955105 | 0.5066836 |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Observations                                                      | 21         | 15        |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Hypothesized Mean Difference                                      | 0          |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | df                                                                | 24         |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | t Stat                                                            | 2.14683913 |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | P(T<=t) one-tail                                                  | 0.02106048 |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | t Critical one-tail                                               | 1.71088208 |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | P(T<=t) two-tail                                                  | 0.04212096 |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | t Critical two-tail                                               | 2.06389856 |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Concordia - CCC                                                   |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | t-Test: Two-Sample Assuming Unequal Variances                     |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | SUMMARY                                                           |            |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Variable 1                                                        | Variable 2 | Count     | Sum      | Average  | Variance |          |  |
|                       |           |       |                        |           |       |                     |           |        | Mean                                                              | 5.9972     | 5.588867  |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Variance                                                          | 0.164413   | 0.506684  |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Observations                                                      | 15         | 15        |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | Hypothesized Mean Difference                                      | 0          |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | df                                                                | 22         |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | t Stat                                                            | 1.930491   |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | P(T<=t) one-tail                                                  | 0.033268   |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | t Critical one-tail                                               | 1.717144   |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | P(T<=t) two-tail                                                  | 0.066536   |           |          |          |          |          |  |
|                       |           |       |                        |           |       |                     |           |        | t Critical two-tail                                               | 2.073873   |           |          |          |          |          |  |

Highlighted in Green - Statistically Significant  
 Highlighted in Pink - Not Statistically Significant

Appendix F

| AGE ANOVA            |         |     |         |          |  | OHSU/CCC                                          |           | OHSU/Concordia |           | CCC/Concordia       |           |            |           |           |
|----------------------|---------|-----|---------|----------|--|---------------------------------------------------|-----------|----------------|-----------|---------------------|-----------|------------|-----------|-----------|
| Anova: Single Factor |         |     |         |          |  | Age t-Test: Two-Sample Assuming Unequal Variances |           |                |           |                     |           |            |           |           |
| SUMMARY              |         |     |         |          |  | Variable 1                                        |           | Variable 2     |           | Variable 1          |           | Variable 2 |           |           |
| Groups               | Count   | Sum | Average | Variance |  | Mean                                              |           | Mean           |           | Mean                |           | Mean       |           |           |
| CCC                  | 15      | 39  | 2.6     | 0.68571  |  | Variance                                          | 0.6857143 | 2.4761905      | 0.4619048 | Variance            | 1.8666667 | 2.4761905  | 0.2666667 | 0.4619048 |
| Concordia            | 15      | 28  | 1.86667 | 0.26667  |  | Observations                                      |           | 15             | 21        | Observations        |           | 15         |           | 15        |
| OHSU                 | 21      | 52  | 2.47619 | 0.4619   |  | Hypothesized Mean                                 |           | 0              |           | Hypothesized Mean   |           | 0          |           | 0         |
|                      |         |     |         |          |  | df                                                |           | 26             |           | df                  |           | 34         |           | 23        |
|                      |         |     |         |          |  | t Stat                                            |           | 0.4758044      |           | t Stat              |           | -3.056294  |           | -2.910326 |
|                      |         |     |         |          |  | P(T<=t) one-tail                                  |           | 0.3190937      |           | P(T<=t) one-tail    |           | 0.0021709  |           | 0.0039401 |
|                      |         |     |         |          |  | t Critical one-tail                               |           | 1.7056179      |           | t Critical one-tail |           | 1.6909243  |           | 1.7138715 |
|                      |         |     |         |          |  | P(T<=t) two-tail                                  |           | 0.6381873      |           | P(T<=t) two-tail    |           | 0.0043418  |           | 0.0078803 |
|                      |         |     |         |          |  | t Critical two-tail                               |           | 2.0555294      |           | t Critical two-tail |           | 2.0322445  |           | 2.0686576 |
|                      |         |     |         |          |  |                                                   |           |                |           |                     |           |            |           |           |
| Total                | 27.3333 | 50  |         |          |  |                                                   |           |                |           |                     |           |            |           |           |

  

| Education ANOVA      |         |     |         |          |  | OHSU/CCC                                                  |           | OHSU/Concordia                              |           | CCC/Concordia       |           |                                                |           |           |
|----------------------|---------|-----|---------|----------|--|-----------------------------------------------------------|-----------|---------------------------------------------|-----------|---------------------|-----------|------------------------------------------------|-----------|-----------|
| Anova: Single Factor |         |     |         |          |  | Education - t-Test: Two-Sample Assuming Unequal Variances |           |                                             |           |                     |           |                                                |           |           |
| SUMMARY              |         |     |         |          |  | Variable 1                                                |           | Variable 2                                  |           | Variable 1          |           | Variable 2                                     |           |           |
| Groups               | Count   | Sum | Average | Variance |  | Mean                                                      |           | Mean                                        |           | Mean                |           | Mean                                           |           |           |
| CCC                  | 15      | 48  | 3.2     | 0.74286  |  | Variance                                                  | 0.7428571 | 3.2                                         | 3.8095238 | Variance            | 0.4571429 | 3.8095238                                      | 0.4571429 | 0.7428571 |
| Concordia            | 15      | 33  | 2.2     | 0.45714  |  | Observations                                              |           | 15                                          | 21        | Observations        |           | 15                                             |           | 15        |
| OHSU                 | 21      | 80  | 3.80952 | 0.3619   |  | Hypothesized Mean                                         |           | 0                                           |           | Hypothesized Mean   |           | 0                                              |           | 0         |
|                      |         |     |         |          |  | df                                                        |           | 23                                          |           | df                  |           | 28                                             |           | 26        |
|                      |         |     |         |          |  | t Stat                                                    |           | -2.359071                                   |           | t Stat              |           | -7.36875                                       |           | -3.535534 |
|                      |         |     |         |          |  | P(T<=t) one-tail                                          |           | 0.0135942                                   |           | P(T<=t) one-tail    |           | 2.519E-08                                      |           | 0.0007748 |
|                      |         |     |         |          |  | t Critical one-tail                                       |           | 1.7138715                                   |           | t Critical one-tail |           | 1.7011309                                      |           | 1.7056179 |
|                      |         |     |         |          |  | P(T<=t) two-tail                                          |           | 0.0271884                                   |           | P(T<=t) two-tail    |           | 5.039E-08                                      |           | 0.0015496 |
|                      |         |     |         |          |  | t Critical two-tail                                       |           | 2.0686576                                   |           | t Critical two-tail |           | 2.0484071                                      |           | 2.0555294 |
|                      |         |     |         |          |  |                                                           |           |                                             |           |                     |           |                                                |           |           |
| Total                | 46.7451 | 50  |         |          |  |                                                           |           | Green Highlight - Statistically Significant |           |                     |           | Pink Highlight - Not Statistically Significant |           |           |

Appendix G

| Overall Scale Pre-Post by Age                    |              |             | Social Justice Attitudes Subscale Pre-Post by Age   |              |             | Perceived Behavioral Control Subscale Pre-Post by Age |              |             |
|--------------------------------------------------|--------------|-------------|-----------------------------------------------------|--------------|-------------|-------------------------------------------------------|--------------|-------------|
| <b>Age 30 and Under</b>                          |              |             | <b>Age 30 and Under</b>                             |              |             | <b>Age 30 and Under</b>                               |              |             |
| t-Test: Paired Two Sample for Means              |              |             | t-Test: Paired Two Sample for Means                 |              |             | t-Test: Paired Two Sample for Means                   |              |             |
|                                                  | Variable 1   | Variable 2  |                                                     | Variable 1   | Variable 2  |                                                       | Variable 1   | Variable 2  |
| Mean                                             | 5.893518519  | 6.239583333 | Mean                                                | 6.48989899   | 6.661616162 | Mean                                                  | 5.277777778  | 5.972222222 |
| Variance                                         | 0.283079806  | 0.337537202 | Variance                                            | 0.315597534  | 0.269946215 | Variance                                              | 0.615492063  | 0.750063492 |
| Observations                                     | 36           | 36          | Observations                                        | 36           | 36          | Observations                                          | 36           | 36          |
| Pearson Correlation                              | 0.661939286  |             | Pearson Correlation                                 | 0.791278482  |             | Pearson Correlation                                   | 0.543199701  |             |
| Hypothesized Mean Difference                     | 0            |             | Hypothesized Mean Difference                        | 0            |             | Hypothesized Mean Difference                          | 0            |             |
| df                                               | 35           |             | df                                                  | 35           |             | df                                                    | 35           |             |
| t Stat                                           | -4.516121699 |             | t Stat                                              | -2.930287944 |             | t Stat                                                | -5.260385838 |             |
| P(T<=t) one-tail                                 | 3.42649E-05  |             | P(T<=t) one-tail                                    | 0.002963857  |             | P(T<=t) one-tail                                      | 3.64697E-06  |             |
| t Critical one-tail                              | 1.689572458  |             | t Critical one-tail                                 | 1.689572458  |             | t Critical one-tail                                   | 1.689572458  |             |
| P(T<=t) two-tail                                 | 6.85297E-05  |             | P(T<=t) two-tail                                    | 0.005927714  |             | P(T<=t) two-tail                                      | 7.29394E-06  |             |
| t Critical two-tail                              | 2.030107928  |             | t Critical two-tail                                 | 2.030107928  |             | t Critical two-tail                                   | 2.030107928  |             |
| <b>Age over 30</b>                               |              |             | <b>Age over 30</b>                                  |              |             | <b>Age over 30</b>                                    |              |             |
| t-Test: Paired Two Sample for Means              |              |             | t-Test: Paired Two Sample for Means                 |              |             | t-Test: Paired Two Sample for Means                   |              |             |
|                                                  | Variable 1   | Variable 2  |                                                     | Variable 1   | Variable 2  |                                                       | Variable 1   | Variable 2  |
| Mean                                             | 5.908333333  | 6.391666667 | Mean                                                | 6.527272727  | 6.654545455 | Mean                                                  | 5.12         | 6.333333333 |
| Variance                                         | 0.466071429  | 0.372718254 | Variance                                            | 0.380401417  | 0.262337662 | Variance                                              | 0.958857143  | 0.460952381 |
| Observations                                     | 15           | 15          | Observations                                        | 15           | 15          | Observations                                          | 15           | 15          |
| Pearson Correlation                              | 0.631421288  |             | Pearson Correlation                                 | 0.724300821  |             | Pearson Correlation                                   | 0.41686814   |             |
| Hypothesized Mean Difference                     | 0            |             | Hypothesized Mean Difference                        | 0            |             | Hypothesized Mean Difference                          | 0            |             |
| df                                               | 14           |             | df                                                  | 14           |             | df                                                    | 14           |             |
| t Stat                                           | -3.348897357 |             | t Stat                                              | -1.145643924 |             | t Stat                                                | -5.051103282 |             |
| P(T<=t) one-tail                                 | 0.002387214  |             | P(T<=t) one-tail                                    | 0.135574502  |             | P(T<=t) one-tail                                      | 8.84787E-05  |             |
| t Critical one-tail                              | 1.761310136  |             | t Critical one-tail                                 | 1.761310136  |             | t Critical one-tail                                   | 1.761310136  |             |
| P(T<=t) two-tail                                 | 0.004774428  |             | P(T<=t) two-tail                                    | 0.271149004  |             | P(T<=t) two-tail                                      | 0.000176957  |             |
| t Critical two-tail                              | 2.144786688  |             | t Critical two-tail                                 | 2.144786688  |             | t Critical two-tail                                   | 2.144786688  |             |
| <b>Subjective Norms Subscale Pre-Post by Age</b> |              |             | <b>Intention to Engage Subscale Pre-Post by Age</b> |              |             | Highlight Green - Statistically Significant           |              |             |
| <b>Age 30 and Under</b>                          |              |             | <b>Age 30 and Under</b>                             |              |             | Highlight Pink - Not Statistically Significant        |              |             |
| t-Test: Paired Two Sample for Means              |              |             | t-Test: Paired Two Sample for Means                 |              |             |                                                       |              |             |
|                                                  | Variable 1   | Variable 2  |                                                     | Variable 1   | Variable 2  |                                                       |              |             |
| Mean                                             | 4.965277778  | 5.444444444 | Mean                                                | 5.951388889  | 6.208333333 |                                                       |              |             |
| Variance                                         | 1.207688492  | 1.350396825 | Variance                                            | 0.942212302  | 0.780357143 |                                                       |              |             |
| Observations                                     | 36           | 36          | Observations                                        | 36           | 36          |                                                       |              |             |
| Pearson Correlation                              | 0.424931206  |             | Pearson Correlation                                 | 0.453644051  |             |                                                       |              |             |
| Hypothesized Mean Difference                     | 0            |             | Hypothesized Mean Difference                        | 0            |             |                                                       |              |             |
| df                                               | 35           |             | df                                                  | 35           |             |                                                       |              |             |
| t Stat                                           | -2.369030764 |             | t Stat                                              | -1.586236951 |             |                                                       |              |             |
| P(T<=t) one-tail                                 | 0.011741578  |             | P(T<=t) one-tail                                    | 0.06084013   |             |                                                       |              |             |
| t Critical one-tail                              | 1.689572458  |             | t Critical one-tail                                 | 1.689572458  |             |                                                       |              |             |
| P(T<=t) two-tail                                 | 0.023483157  |             | P(T<=t) two-tail                                    | 0.121680259  |             |                                                       |              |             |
| t Critical two-tail                              | 2.030107928  |             | t Critical two-tail                                 | 2.030107928  |             |                                                       |              |             |
| <b>Age over 30</b>                               |              |             | <b>Age over 30</b>                                  |              |             |                                                       |              |             |
| t-Test: Paired Two Sample for Means              |              |             | t-Test: Paired Two Sample for Means                 |              |             |                                                       |              |             |
|                                                  | Variable 1   | Variable 2  |                                                     | Variable 1   | Variable 2  |                                                       |              |             |
| Mean                                             | 5.3          | 5.666666667 | Mean                                                | 5.8          | 6.466666667 |                                                       |              |             |
| Variance                                         | 1.519642857  | 0.961309524 | Variance                                            | 1.046428571  | 0.623809524 |                                                       |              |             |
| Observations                                     | 15           | 15          | Observations                                        | 15           | 15          |                                                       |              |             |
| Pearson Correlation                              | 0.321343001  |             | Pearson Correlation                                 | 0.681846077  |             |                                                       |              |             |
| Hypothesized Mean Difference                     | 0            |             | Hypothesized Mean Difference                        | 0            |             |                                                       |              |             |
| df                                               | 14           |             | df                                                  | 14           |             |                                                       |              |             |
| t Stat                                           | -1.087829988 |             | t Stat                                              | -3.424580075 |             |                                                       |              |             |
| P(T<=t) one-tail                                 | 0.147521883  |             | P(T<=t) one-tail                                    | 0.002053552  |             |                                                       |              |             |
| t Critical one-tail                              | 1.761310136  |             | t Critical one-tail                                 | 1.761310136  |             |                                                       |              |             |
| P(T<=t) two-tail                                 | 0.295043766  |             | P(T<=t) two-tail                                    | 0.004107103  |             |                                                       |              |             |
| t Critical two-tail                              | 2.144786688  |             | t Critical two-tail                                 | 2.144786688  |             |                                                       |              |             |