JNDSS

JOURNAL OF NURSING DOCTORAL STUDENTS SCHOLARSHIP

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Mission

The Journal of Nursing Doctoral Students Scholarship (JNDSS) is a scholarly publication dedicated to the development of nursing doctoral student scholarship and the advancement of nursing science. This journal is peer-reviewed by doctoral students, edited by doctoral students and targeted towards health practitioners, educators, scientists and students. This journal has both a professional and an educational mission. First, to serve the profession, each issue features articles that represent diverse ideas, spark intellectual curiosity, and challenge existing paradigms. Doctoral students will have an opportunity to explore and analyze issues and ideas that shape healthcare, the nursing profession and research around the world. Second, to fulfill its educational mission, doctoral students will be trained in the editorial and administrative tasks associated with the journal's publication and assisted in preparing original manuscripts for professional publication. This journal will be evidence of the scholarly development of nurse scientists.

Cover Art: Get Well Soon by SHIRO,
with artists Demer and Meres

Thank You

The editorial staff of the JNDSS extends our sincere thanks to the following doctoral student peer-reviewers for their rigorous reviews, thoughtful suggestions and contributions to nursing science:

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Contents

Marta Bruce, BSN, MS, RN
Editor-in-Chief

Marta earned her BA in Political Economy, Public Health, and Languages from The Evergreen State College, and her BSN from the University of Pennsylvania. As a Hillman Scholar in Nursing Innovation, and Jonas Nurse Leader Scholar, Marta studies disparities in trauma injuries and outcomes, trauma-informed care, and ethics of nursing care and research with vulnerable populations. Her clinical background includes firefighting and emergency medical services, as well as trauma, orthopedic, and neuroscience nursing. Marta's dissertation work uses GIS (Geographic Information Systems) to examine how geography and the social environment impact post-injury PTSD and depression in a cohort of seriously-injured Black patients.

Sydney Axson, MPH, BSN, RN
Editor Elect

Sydney A. Axson is a Hillman Scholar of Nursing Innovation at the School of Nursing and a Leadership Education in Adolescent Health (LEAH) Fellow at the Children's Hospital of Philadelphia. Her dissertation work focuses on opioid prescribing in adolescence and her larger body of work spans public health, nursing, and ethics. She earned her MPH from the University of Pennsylvania and completed her undergraduate education at Syracuse University.

Editorial Board Members

Susan K. Keim PhD, MSN, MS, CRNP

Susan K. Keim PhD, MSN, MS, CRNP is currently the Program Director for the US News & World #1 ranked Nursing & Healthcare Administration and Health Leadership graduate programs, and serves as Vice Chair of the Biobehavioral Health Sciences Department in the School of Nursing at the University of Pennsylvania. She is also a Senior Fellow in the Leonard Davis Institute of Health Economics. Spurred by previous work as a hospital administrator and later as a nurse practitioner in primary care, her research interests center on clinical systems, emerging technologies and care delivery models that promote care coordination. Through the examination of factors correlated with post-hospital discharge acute healthcare utilization, she hopes to design care delivery systems aimed at reducing fragmentation in care and promoting patient safety in the community. Her doctoral dissertation work was awarded the Nursing Informatics Student Paper award at the American Medical Informatics Association conference in 2017.

Prior to Penn, Dr. Keim worked in clinical and progressive management positions at Johns Hopkins Hospital for 13 years. In addition to a PhD from Penn, she holds a MSN from Penn's Adult and Gerontology Nurse Practitioner Program, is board-certified as an Adult Gerontological Nurse Practitioner by the American Nurses Credentialing Center, and has a MS in Nursing Administration from the University Of Maryland.

Darina Petrovsky, PhD, RN

Darina Petrovsky, PhD, RN first received her Bachelors of Musical Arts from the University of Michigan, and then pursued her Masters in Nursing (MN) from the Frances Payne Bolton School of Nursing (FPB) at Case Western Reserve University (CWRU). At graduation Darina was awarded the Dean's Legacy Award for her academic excellence, service to the larger community and the capacity for leadership and innovation in health care. Darina combined her passions for music and care for older adults to continue her doctoral studies at the University of Pennsylvania working with Pamela Cacchione, PhD, CRNP, BC, FAAN and Roy Hamilton, MD, MS, where she was the first nursing student to enroll and complete a Certificate for Social, Cognitive and Affective Neuroscience. In her dissertation, Darina explored the cognitive abilities associated with music in older adults with mild cognitive impairment (MCI). Darina is a member of the Gerontological Society of America (GSA); the American Academy of Neurology and Sigma Theta Tau International Society. She was a Ruth L. Kirschstein NRSA Pre-Doctoral Fellow (NIH/NIA; F31AG055148) and her past accomplishments include being selected as a 2014-2016 National Hartford Centers of Gerontological Nursing Excellence Patricia G. Archbold Scholar and 2014-2016 Jonas Nurse Leader Scholar.

Editorial Board Members

Paule V. Joseph, PhD, RN

Dr. Paule V. Joseph received her PhD in Nursing from the University of Pennsylvania and a Master's Degree as a Family Nurse Practiioner from Pace University. Dr. Joseph conducted her dissertation work at the Monell Chemical Senses Center, the leaders in chemosensory biology. She is currently a clinical and translational post-doctoral fellow at the National Institutes of Nursing Research (NINR). Dr. Joseph has recently been funded by the Rockefeller University to study the effects of the microbiome in eating behavior, taste and obesity phenotype. Dr. Joseph's research interests in how brain-gut mechanism, eating behavior and genetics factor into obesity development and interventions stems from her clinical practice and research experiences. Dr. Joseph also has a strong interest in bioinformatics, research methods, transparency, and reproducibility. Prior to her PhD, she worked at Mount Sinai Hospital and at Columbia Presbyterian-Weill Cornell Hospital in New York City. Dr. Joseph brings a unique perspective to her program of research—a perspective that incorporates both clinical and bench science approaches.

Justine S. Sefcik, PhD, RN

Justine S. Sefcik, PhD, RN is a Post-doctoral Research Fellow at the University of Pennsylvania School of Nursing NewCourtland Center for Transitions and Health [T32NR 009365, Individualized Care for at Risk Older Adults]. Dr. Sefcik completed her PhD in Nursing at the University of Pennsylvania. During her time in the doctoral program she co-founded JNDSS. Dr. Sefcik's clinical background is in long-term care and her dissertation was a multi-methods study of nursing home residents with advanced dementia and persistent vocalizations.

Megan Streur, PhD, RN, FNP-C

Megan Streur, PhD, RN, FNP-C, earned a Bachelor's of Science in Nursing from Oral Roberts University, a Master's of Nursing from Washington State University, and a Doctorate of Philosophy in Nursing from the University of Pennsylvania. She is currently a post-doctoral fellow at the University of Washington. Megan's clinical background include cardiovascular telemetry and intensive care as a registered nurse, and cardiac electrophysiology as a nurse practitioner at the Vanderbilt Heart Center for Atrial Fibrillation. Her research interests include atrial fibrillation symptoms, symptom clusters, and self-care, with an interest in using patient-centered technologies to improve outcomes for adults with atrial fibrillation.

Editorial

Contemporary Nursing Ethics: A Conversation with Dr. Connie Ulrich

For this issue of the *Journal of Nursing Doctoral Students Scholarship* (JNDSS) we highlight the topic of nursing bioethics. We are privileged to have our very own in-house nurse bioethicist, Dr. Connie M. Ulrich, PhD, RN, FAAN at the School of Nursing at Penn. Dr. Ulrich's new book: *Moral Distress in the Health Professions* was recently published, and we wanted to sit down with her to discuss the book and her thoughts on contemporary nursing ethics issues that are pertinent to nursing doctoral students. Dr. Ulrich is the Lillian S. Brunner Chair in Medical and Surgical Nursing, and Professor of Bioethics at the School of Nursing and the Perelman School of Medicine. Dr. Ulrich teaches foundational ethics courses here at Penn and conducts both conceptual and empirical bioethics research nationally and internationally.

Your career in nursing started at the bedside. Can you share how your time at the bedside shaped your career in bioethics?

I am a pediatric nurse by training and started working on a surgical floor at Children's Hospital (Children's Hospital National Medical Center, in Washington, D.C.) and then went on to the Operating Room where I was part of a heart transplantation team. When I started working, I worked two weeks of days and two weeks of nights – we didn't know much about the role of sleep at that time – but I learned so much, up close and personal, on pediatric diseases that I had studied or read about in nursing school. I had never seen a baby with biliary atresia, cleft palate, cleft lip, osteosarcoma or other diseases, for example, and was able to see the stress of parents in making difficult treatment decisions for their children. I also saw death up close and personal, because at that time in nursing you were assigned as the primary nurse for designated patients, so you would always take care of that patient when you were working. And, you developed a relationship with families and knew the nuances of the child's healthcare status. During this time, I began to think about issues such as pediatric death, adolescent suicide (because we had a young girl come to the OR who tried to commit suicide), decision-making for parents whose child was just diagnosed with cancer, as well as, interdisciplinary practice and collegiality in stressful environments. Bedside practice shaped how I started to think about the ethical challenges in clinical practice that I still think about today.

What has your training looked like as a nurse bioethicist? We know you were the first nurse to complete the postdoctoral training at the NIH's Department of Bioethics, where and how else have you developed your skills?

My bedside clinical practice was foundational training for becoming a nurse bioethicist because I was able to see the implications of illness so personally and it later gave me time to reflect on those important bioethical questions of *what is and what ought to be* in this practice environment. I worked with phenomenal people who were dedicated clinicians for children. I also started thinking about bioethics during my Master's program because I did an internship on Capitol Hill, and coming from an OR environment where it was fast paced, clinically-driven, and outcomes oriented, Capital Hill was very different. But it gave me an appreciation for understanding the broader healthcare system and the importance of nursing to these types of conversations surrounding healthcare legislation. This experience helped me to think about the importance of research and data for moving policy forward; and, my first research pilot in my research Master's course was focused on political participation and power. I went on to focus on managed care issues in my doctoral program (because at the time, managed care and capitation was being discussed in the literature and I became very interested in the ethical challenges of providing care within a managed care environment). Dr. Ezekiel Emanuel was the lead scholar on writing about these issues from a physician perspective, but there was nothing being written about Nurse Practitioners at the time, and they too were providing care under a capitated system and were most likely to face ethical challenges as well. So, I centered my dissertation on that particular topic. I was then very fortunate to receive a 2-year postdoctoral fellowship at NIH where I was trained in clinical and research ethics, and also conducted ethics consultations, went on rounds and participated in seminars and lectures on ethics-related topics.

You have noted in some of your work that not all nurses are prepared in school to handle ethically challenging situations. How do you address this in your own teaching and what can nursing do in general to give nurses the skills to navigate bioethics in the real world?

Yes, in my postdoc work, I was very surprised to find that 23% of nurses had no ethics education and those who had no ethics education were more likely to feel as though they couldn't take an appropriate action in a situation. This frustrated me a bit because of the valued contribution that nursing brings to the healthcare system and the patients and families they care for. I do address this in my teaching by helping students voice their concerns on the ethical issues that we explore, and no question is off the table for reflection. Unfortunately, bioethics has not always been perceived to be central to the curriculum. We are very fortunate that Penn Nursing finds it valuable but that is not necessarily the case beyond Penn. In a publication by Mila Aroskar in 1977 (she was an early nurse ethicists), she asked the following question: "What is the present system of nursing education doing to help students and graduates learn to cope satisfactorily with these decisions (resuscitation, truth-telling and other types of ethical conflicts)?" And others have asked what type or types of ethics content are needed in nursing, who should teach it, and how do we prepare nurses to be moral agents?

Your moral distress book just came out, largely written for clinicians such as nurses, social workers, and physicians who are dealing with traumatic events or even daily events that contribute to burnout. But health researchers may be exposed to a secondary level of trauma through researching the experiences of patients and health care workers. How do your insights apply to nurse scholars?

This is a wonderful question and I do think that health researchers also face moral challenges in knowing the right course of action albeit related to informed consent, recruitment and retention or some other issue in the research process. We have not focused on secondary trauma of health researchers, but I would argue that this most likely exists. It is especially hard being a nurse and a researcher when your research participant might tell you for example, "that he or she is dying, and no one has had a conversation with them about what to do or where to go." So, yes, we need more normative thought on what this might mean for researchers and it would be helpful to have case examples of this type of trauma. Some researchers have focused on what they call "emotional contagion" and whether the distress that an individual experiences might trigger similar emotions in another individual. So, whether this trauma and emotional contagion is evident in the health researcher population needs more exploration and study.

We were particularly struck by your note on how nurses face the dilemma of seeing injustice through their daily work at the bedside, for example, a nurse sees a patient discharged without proper follow-up care and knows that the patient won't be well-served and will face poor outcomes because of that. What's your advice for this nurse who observes that injustice seems to be built into the entire system? In a society that does not consider health to be a human right, won't bioethics problems be a given?

Yes, I think we are seeing bioethics concerns everyday related to healthcare. Today, about 27 million individuals remain without insurance due to costs and other issues. We know that those without insurance are forgoing needed medications, tests, or other procedures that they might need to prevent further disease. And when these individuals do become ill, their condition is usually worse off. Nurses must use their voices when they see, or perhaps are part of, patient care cases where there is a perceived injustice. I recently read an article where the author was speaking to epistemic injustice and of course epistemic or epistemology is related to knowing. So, the author (Miranda Fricker) identifies two types of epistemic injustice: hermeneutical and testimonial injustice. She argues that Testimonial injustice occurs when there is a lesser credibility attributed to the speaker from the listener due to a prejudice. And hermeneutical injustice occurs when an individual might be placed at an unfair disadvantage because of their situation and might lack the social resources to understanding their social experience. So, how do we raise the voices of nurses so they are heard for their knowledge base when there might be a perceived injustice in patient care or a broader related concern; and then, how do we use that voice and knowledge to combat the prejudices that might exist within the settings where we work? We see that speaking out can be costly, but if we don't do so, who do we harm? We harm the patient, the family, ourselves, and the ultimately the system.

You also described that apart from these larger bioethical conundrums we typically think about in health care (end-of-life decision-making, etc) there are these daily "micro-ethical dilemmas" nurses encounter at a smaller, but more constant level. And how these can also just as powerfully contribute to burnout. Could you talk about that a little?

Dr. Robert Truog (a physician bioethicist) first used this term to bring attention to the daily ethical issues that arise in medicine that are often neglected. I agree with him that we tend to focus on those scintillating cases on end-of-life, genetics, or other major issues that we see on the news or in the media. He was rightfully arguing that the day-to-day clinician experiences of ethical problems are important in our understanding within the broader field of bioethics. These everyday ethical or micro-ethical dilemmas might include the following for nurses (for example):

- A parent asked the nurse not to speak about cancer to her pediatric patient but the patient wants to speak about it with the nurse;
- A family member is angrily asking for pain medication for their loved one but it is not time to receive another dose of the pain medication and becomes emotionally distraught over the situation
- The patient asks the nurse to sit with him for a few minutes but the nurse has another patient who is on her way back from the OR that the nurse need to get ready for admission.

Arthur Caplan said that the "The ethics of the ordinary is just as much a part of health care ethics as the ethics of the extraordinary" and I support this statement and would further argue that we need to continually bring attention to these "ordinary ethical issues" that create much strife for nurses, patients, and families.

Your work on empirical bioethics instrumentation is so interesting. Could you tell us a little about the state of that field and your contributions to it?

There are very few empirical bioethicists in the country and few bioethics instruments. but without reliable and valid measures of a phenomenon of interest, we cannot advance the science. That was the challenge for me when I was working on my dissertation and to some degree, it remains a challenge. When I first started thinking about how to measure bioethical concepts, I was very interested in how nurse practitioners (in particular) could provide care within a constrained environment given their growing importance in primary care and their development as autonomous and independent practitioners. Many scholars were focused on the cost of healthcare at the time and I believe that at the time of my dissertation work, it was around 12% of the GDP; today it is about 18%. NPs were struggling as were their physician counterparts. They too, were balancing the ethical challenges of meeting their primary commitment to their patients with the insurance constraints of practicing within a capitated system. In my dissertation work, many reported running interferences for their patients with insurance companies and sometimes doing whatever they could to provide care to their patients. In fact, patients asked NPs to deceive or manipulate on their behalf. I was very interested in this ethical conflict of balancing one's professional obligations with obligations to one's employer and where one's loyalty would ultimately lie. There was nothing in the literature to measure the phenomenon of ethical conflict, but I happened to find an instrument that I could adapt for my study that focused on tensions within the research environment and that is what I did. I probably should go back to this study now to see if these challenges still exist or whether there are any differences from when I first focused on this ethical tension. Although I am not sure that much has changed since this study as we continue to grapple with costs, access, and quality, but we started to understand how ethical issues impact the daily work of clinicians and how they are doing their very best to maintain their professional integrity when there are multiple forces tugging on their daily practice with patients, families, and communities. Most recently, I have also developed an instrument to measure the benefits and burdens of research participation. So, I think I have contributed to bioethics instrumentation and conducting rigorous empirical research that has advanced the field; I am also an Associated Editor for the American Journal of Bioethics: Primary Research and contribute in that way as well with regards to publishing rigorous empirical bioethics work.

Do you see any fundamental differences between nurse bioethicists/nurse ethicists and ethicists from other disciplines?

This is an interesting question and one that I have struggled a bit with. Am I a nurse, a bioethicist, a nurse who happens to be a bioethicist or a bioethicist who happens to be a nurse? And perhaps I fit all those categories. I do think there is something unique about being a nurse bioethicist and what a nurse might bring to the discipline that another discipline might not. Dean Afaf Meleis told me when I first started at UPenn that I needed to find my way in nursing and she was right. Her vision was to advance bioethics with a nurse at the helm and I thank her for that. We, as nurses, are generally pragmatic people, we have a critical knowledge base and expertise that addresses the human condition, and we have a social contract with society through our Code of Ethics. For all these reasons, I think we bring a unique perspective to the discipline of bioethics that advances the goals of society.

In this world of competitive research funding, we've observed that some questions aren't funded, and more importantly, this leads to certain questions never being asked. Funding institutions have attempted, at least in some ways, to bolster their funding priorities with sections devoted to funding bioethics questions or health equity research, but largely, there is a major focus on expensive research rooted in individual characteristics or working at the molecular level, with an increasing focus on fields like precision medicine or genomics that some argue may not (soon) benefit the majority of people who experience health disparities that are rooted in distributional injustice. What's your take on this? What's your advice to prospective researchers who are committed to health equity?

I would say to persevere. Yes, it is competitive and challenging; that is a given. When I first started in academia and I was struggling with funding and trying to figure out how to obtain bioethics funding for my work, one of my mentors said to me that "rigorous science is funded" and I believe this and have continued to focus on how to develop rigorous science. When I first started as an Assistant Professor, bioethics was not well-funded and to some degree it remains underfunded (although its importance has grown). Bioethics touches every aspect of our lives…. individually, organizationally, and socially. Health equity, for example, is a bioethical issue but perhaps we have not focused on it as intently as we should given our focus on innovation, genomics, and precision medicine. My advice is to begin by writing about the normative implications of the bioethics phenomenon or concept of interest or a concept analysis and from there you can continue to operationalize that concept and eventually measure it. What is it that we do not know or could use substantive dialogue on that would advance the science in one's field of interest? We must continue to ask questions and think creatively on ways to answer those questions.

What are some of the future challenges you see nurse bioethicists (and bioethicists in general) having to grapple with?

One area that I think we need to think thoughtfully about is artificial intelligence. How do we use this type of technology while understanding the risks and potential rewards that come with it? How do we ensure the ethical behavior of AI and what happens if they become dysfunctional? And, can we use them for value-laden discussions such as end-of life? In what ways might they assist patients? And, finally how would we secure the privacy of sensitive data and information that the robot or AI would process? Nurses and nurse bioethicists should be part of these types of discussions. For nursing specifically, I continue to worry about the health and well-being of the profession. The complexity of the ethical issues is only going to increase and unless systems start to change, I think we will still see increasingly levels of burnout and other emotional disturbances. I also think that we need to strategize about the preparation of the next generation of nurses, what do we want them to know and what is the best way to present the information in the digital age? And, how do we incorporate ethics education at all levels of nursing education, so they are prepared to address the broad issues that affect society that ultimately affect patients. From a societal perspective, climate change, environmental harms, natural disasters, emerging infectious diseases, and genome editing will continue to challenge our ethical notions of beneficence-nonmaleficence and justice in these types of situations. Finally, as we see shifts in our demographics and an aging and chronically ill population and the advancement of diseases in the older population (such as cancer and Alzheimer's), shifting care to the home with caregivers will focus our attention on the many roles that caregivers will play in the costs and quality of health care at end-of-life. Aid in dying will remain prominent as states grapple with legislation on whether to support it or not and the professional role of NPs in these encounters with their patients and families.

Nurses at the bedside are uniquely positioned to bear witness to social injustice, and our work is centered on acting as a voice for our patients and advocating for ethical decision-making in patient care and health systems. As scholars, nurse scientists grapple with some of the most significant ethical challenges facing our patients and our society, especially in a time of growing inequality, gaps in health coverage, and escalating costs. We are grateful to Dr. Ulrich for sharing her time and insights with us, and we'll be following her work with interest.

Marta M. Bruce, RN, BSN, MS
Sydney A. Axson, MPH, RN

~~Surviving~~ Thriving in a PhD Program as a Chronically-ill Person

Alicia Kachmar, BA, BSN, MS, RN
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"The catalyst for pursing a research doctorate in nursing originates from my experiences as an often-hospitalized chronically ill person and the medical sociology/ethics books I read as a result of my chronically ill status. While hospitalized, I often wrote in a journal until my veins were too blown to do so or until I was too upset to put into words what I was feeling, physically and emotionally. The last time I was in the hospital, before I had to undergo a year of three difficult abdominal surgeries, I only wrote three sentences in total: *'Can a spirit be chipped away at? If so, mine is. Goal is to one day be able to pick up the pieces and either put them back together or make something new with them.'* It took me two years to realize that putting these pieces 'back together'—my concept for repairing my emotional state so that it precisely resembled some former, intact emotional state—would be nearly impossible. It took me another year to decide that I didn't want to put these pieces back together at all, but rather I wanted to make something new."

Above was the first paragraph of my PhD program application personal statement from more than five years ago. I considered a nursing research doctorate to be my "something new." Complex psychological and emotional processes begin to develop the moment a chronic disease diagnosis is delivered, and often before this if a diagnosis is suspected. I was forced to examine myself in this context as I learned to navigate the daily challenge associated with chronically poor health combined with a rigorous PhD program. Expectations are exacting, deadlines are unforgiving, and adequate sleep is nonexistent. To normalize my experience or attach meaning to it (or both), I continued to read books that fell within the category of "medical sociology" or "narrative medicine," focusing particularly on narratives by authors who were both chronically ill and involved in healthcare. I credit these "illness narratives" with giving me a sense of belonging in a health research environment that still manages to invoke a feeling of "otherness" in me. As I near the end of my PhD program, I reflect on my trajectory as a chronically ill person, which I sometimes transpose onto the format of the many research papers I have read: Objective, Methods, Results, Discussion.

Objective

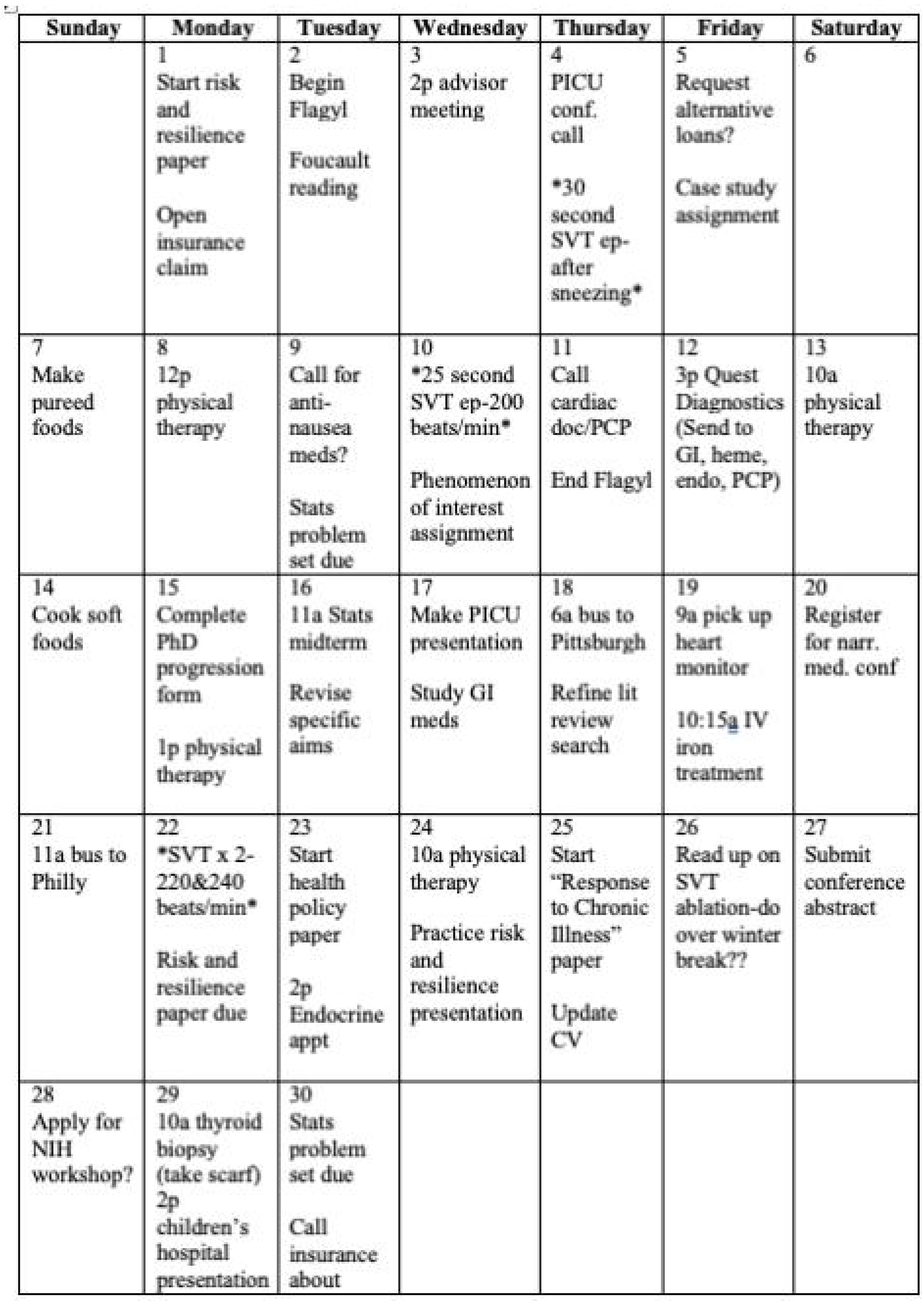
To evaluate the feasibility of ~~surviving~~ thriving in a nursing PhD program as a chronically ill person.

Methods

To push through when I feel like I can barely stand up due to anemia or a heart condition or joint pain. To take the elevator even though an ableist sign on the ground level tells me to take the stairs if traveling to the 1st or 2nd floors. To not feel utterly guilty when fellow elevator riders watch me get off after one floor. To balance a plethora of meetings, classes, and conferences with doctor appointments, procedures, and blood draws. To not feel embarrassed when requesting no hotel roommate on a school-paid trip because I will need to use the bathroom urgently and not quietly. To not feel inferior when a guest lecturer says, "But all of you are healthy…." To not have a breakdown when I read the following in a nursing textbook: "GI disorders may have profound effects on the psychosocial functioning of the affected individual. The stress of coping with a chronic, disabling illness may result in psychological trauma; in addition, any type of illness represents a threat to the integrity of the person. Individuals experiencing a chronic GI disorder may exhibit the psychological effects of such threats" (Copstead L-E & Banasik J., 2013). To believe that my writing and critical thinking skills are of higher quality *because of* and not *in spite of* my chronic illnesses.

Results

An eighth of my meetings are cancelled because of health issues. A quarter of my meetings begin with, "I'm expecting a phone call from one of my doctors, so if my phone rings, I have to take it. I'm sorry." All of my meetings are characterized by the realistic worry that I will *have to* urgently use the bathroom, followed by a silent assessment of: *can I endure the abdominal pain for "x" minutes or am I going to have an accident?* My planner, a combination of scheduled items and health-related notes, aptly illustrates the competing forces in my life, the daily juggling of prioritized elements:



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 Start risk and resilience paper Open insurance claim	2 Begin Flagyl Foucault reading	3 2p advisor meeting	4 PICU conf. call *30 second SVT ep- after sneezing*	5 Request alternative loans? Case study assignment	6
7 Make pureed foods	8 12p physical therapy	9 Call for anti-nausea meds? Stats problem set due	10 *25 second SVT ep-200 beats/min* Phenomenon of interest assignment	11 Call cardiac doc/PCP End Flagyl	12 3p Quest Diagnostics (Send to GI, heme, endo, PCP)	13 10a physical therapy
14 Cook soft foods	15 Complete PhD progression form 1p physical therapy	16 11a Stats midterm Revise specific aims	17 Make PICU presentation Study GI meds	18 6a bus to Pittsburgh Refine lit review search	19 9a pick up heart monitor 10:15a IV iron treatment	20 Register for narr. med. conf
21 11a bus to Philly	22 *SVT x 2-220&240 beats/min* Risk and resilience paper due	23 Start health policy paper 2p Endocrine appt	24 10a physical therapy Practice risk and resilience presentation	25 Start "Response to Chronic Illness" paper Update CV	26 Read up on SVT ablation-do over winter break??	27 Submit conference abstract
28 Apply for NIH workshop?	29 10a thyroid biopsy (take scarf) 2p children's hospital presentation	30 Stats problem set due Call insurance about				

Discussion

Thriving in a PhD program while managing multiple chronic conditions is…feasible?

Conclusion

I wonder how my "something new"—my time in a PhD program—concludes.

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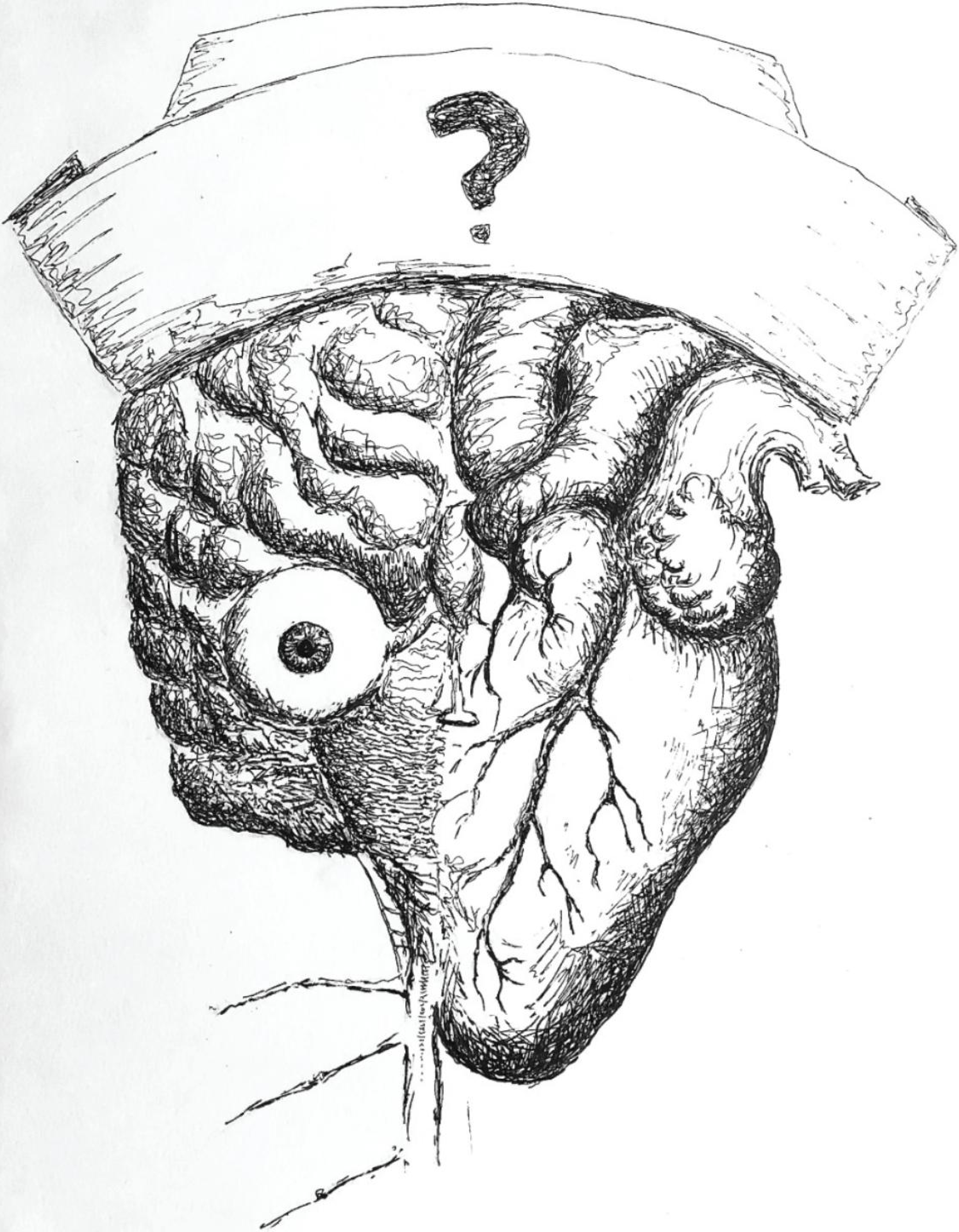

Book Review of *Body and Soul: The Black Panther Party and the Fight Against Medical Discrimination*

Tarik S. Khan, MSN, CRNP, Onome Osokpo, MSc., MSN, RN, Sue Schrand, MSN, CRNP
University of Pennsylvania

As the 2020 presidential candidates begin debate on racial justice issues that include reparations, addressing social determinants of health and Medicare for All, Alondra Nelson's debut work: *Body and Soul: The Black Panther Party and the Fight Against Medical Discrimination* (2010) is as relevant today as when it was first published nearly a decade ago. In this book, Nelson explores the intersection of race, social justice, science and medical parity in the United States through her examination of the health clinics and health activism of the Black Panther Party (BPP, or the Party). Despite the sweeping social transformations taking place in the nation during President Johnson's "Great Society" reforms of the mid-1960s, African American communities still struggle to access basic human rights such as quality healthcare, and suffer extraordinary brutality at the hands of police. Nelson argues against the stereotypical image of a BPP that was disorderly, obstructionist, and a militant faction of the civil rights movement. Instead, she presents a Party that was a significant extension of the historical push to expose and struggle against the insidious cancer of segregation in the United States. Nelson further analyzed how the Party responded to racial suppression under the guise of science, and worked to tilt the balance of power away from scientists and physicians through its advocacy, activism, and health initiatives.

According to Nelson's in-depth work, the mission of the BPP was to serve the "body and soul" of the black communities. In an attempt to establish a bridge between the right to health care and civil rights, the BPP promised to safeguard black neighborhoods from police brutality and offered significant health and other social services, such as employment, housing, and community welfare programs. The Party established their own health centers to provide crucial care to the community, and they confronted racism within the health system by disputing studies that posited a racial biology of violence. The Party also proposed ways of approaching genetic studies with a more valid approach that takes into consideration genetic, endocrine, neurophysical, epidemiological, and psychosocial etiologies.

Nelson's writings were influenced by events and happenings in the country at that time, principally the recent passage of the Patient Protection and Affordable Care Act, the controversies surrounding the bill, and many conversations about "socialized medicine," "government takeover of health care," "right to health," "universal health care," and the role of the state to provide for the community (Nelson, 2011). Also in the news at the time of publication were revelations about questionable race-based scientific practices, such as the Latin American syphilis experiment of the 1940s and the unconsented (and still uncompensated) harvest of Henrietta Lacks' cervical cells by researchers at Johns Hopkins University. Furthermore, Nelson wrote during an atmosphere of persistent medical discrimination in medical treatment protocols, significant health disparities in persons of color, and a deep lack of trust in the healthcare system among members of the African American community which unfortunately persists to this day.

Although Nelson cited predominantly secondary sources, she pulled from a wide variety of primary sources including government documents, state and federal library archival material, medical journals, photographs, archival BPP publications, and interviews with former BPP members. Nelson, a professor of sociology and gender studies at Columbia University, writes through the wide-angle lens of a sociologist, and through the scope of African American woman who lives in Harlem. Harlem is well known for its rich history of sociopolitical advocacy by its famous resident activists Marcus Garvey, W.E.B. Du Bois, Malcolm X, and James Baldwin. Nelson also came of age in San Diego where the BPP was a controversial group due to frequent clashes with police, but were also known for the social services they provided including lunches for children, free food and groceries for the poor (Rowe, 2016; Sharma, 2017). Nelson also writes about science, including: *Social Life of DNA: Race, Reparations, and Reconciliation after the Genome* (2016). Nelson thanks Harvard Professor Randall Kennedy most prominently in her acknowledgments; Kennedy teaches criminal law and race relations and is well respected in the field of civil rights work.

Nelson does a responsible job presenting the works of the BPP without being an exponent. For example, several times the author cites "The Black Panther" newspaper for information, but relies on this periodical only to gain the perspective of activists, not for historical data. Similarly, Nelson references Bobby Seale's "The Lonely Rage: The Autobiography of Bobby Seale," but utilizes this source to only better depict his motivations and outlook for the Party. Furthermore, a check on some of the books that Nelson depended on for historical information reveals that these works have been well-reviewed by respected sources, such as the New York Times Book Review.

Unfortunately, given the controversy surrounding the Party's frequent run-ins with police, the FBI, and other black activist movements, there is a noticeable absence of opposing viewpoints in Nelson's source material. For example, Nelson establishes that the FBI and local health departments specifically targeted the Party's health clinics to weaken the organization, however, her work may have benefitted from interviews with FBI or government sources from the time to validate this point. Also, if, as Nelson pointed out, the Nixon administration saw The BPP as our nation's greatest threat, having the administration's reflections views shared may have further shed light on the administrations perspective on the organization. Another weakness in the book is Nelson's assumption that care by the Party was entirely safe and beneficial, and did not cause any harm to the community. Nelson does not expound on the quality of care being received or any untoward outcomes. She briefly presents critiques that errors were made in presenting sickle trait as a disease by a staff that did not know the difference (some just had the innocuous sickle trait and not the actual disease). This caused worry, stress, and unnecessary fear, but Nelson quickly justifies such errors as not being unique to the BPP as other agencies doing genetic testing had the same practice. When Nelson discusses the presence of a shareable document, the "freeze list" of community members who were being treated for venereal disease, she does not explore the ethical violation of compromising patient confidentiality, but presents it in the context of helping to prevent the spread of venereal disease in a sexually promiscuous time. Nelson does, however, effectively establish that the health activism of the Party was rooted in beneficence, and was not about the self-aggrandizement of its leaders or a gambit to gain better community acceptance.

The Party's health clinics did embody their mission to serve the community "body and soul." The core theme of *Body and Soul* is summarized in the book's opening line: "Health is politics by other means."

Throughout the book, Nelson writes on variations of this central theme, with strong supporting information presented methodically and straightforwardly. The Party was founded in part as a result of extant discrimination that left black individuals medically "underserved and overexposed." The BPP was a trailblazing pioneer in establishing neighborhood health centers that delivered comprehensive, accessible care to the community. The politics of health had a historical lineage in the African American activist community (e.g., W.E.B Du Bois and Marcus Garvey) but the Party also relied on the philosophies and teachings of other historical figures whose fight for civil rights was also manifested in their drive for accessible health care, including Che Guevara and Chairman Mao. Nelson weaves stories about the omnipresent medical discrimination and abuse of African Americans, and the Party linked disease and poor health outcomes to social marginalization and racism.

Nelson points out that, according to medical historian David McBride, in contrast to whites, there was little change in mortality and morbidity seen in blacks from the end of slavery to the beginning of the Great Depression. By creating sickle cell anemia screening programs, and advocating for more attention to sickle cell, the BPP fought against poor medical care, pain and suffering, and death. Nelson concludes her work focusing on the Party's efforts to stop a planned government-funded research center in Los Angeles that would have used brain surgery on subjects and prisoners to modify behavior, likely targeting black people. Because of their early and relentless advocacy, the Party prevented the weaponizing of biomedicine against black communities, and the proposed UCLA Center for "Study and Reduction of Violence" was successful derailed.

Self-sufficiency was another way that the BPP politicized health. Because of segregation and discrimination, black professionals were used to building their own institutions. By 1970, all BPP chapters had a health clinic, and transitioned to grant funding to sustain their projects. The BPP also believed in a democratization of the medical system. The Party embraced ideas of a decentralized power structure of medical authority, where a patient had significant input into their health care experience. They empowered patients to be active participants in their medical care, including giving input into their diagnoses and helping to perform their own tests. The invention of the Sickle cell disease test "Sickledex" allowed lay people to administer and interpret genetic screening, available in the community. They even helped black people reclaim the narrative of sickle cell, from being a genetic weakness to a genetic advantage over malaria.

Nelson's work continues to have significant relevance today. The BPP was concerned about the place of a for-profit health care system where community resources are squandered. The current efforts to close the 171-year-old Hahnemann hospital in Philadelphia, which serves a predominately poor community of people of color, by a for-profit corporation backed by hedge fund and real estate interests shows that the raiding of community interests in the interest of profits is still a major issue. Also, U.S. presidential administrations continue to hide and distort scientific evidence from the public for political advantage (Bloche, 2004; Eilperin, 2017; Friedman, 2017). Misguided biomedical racial profiling still occurs in medicine, posing a barrier to patients receiving the best care outcomes (Anderson, 2008; Satel, 2002). The United States is experiencing an opioid crisis that has been declared a national emergency, but when an equally troubling epidemic with crack cocaine began to tear at the fabric of the black community in the 1980s, the focus was not on treatment but rather criminalization (Katz, 2017). And finally, as Bassatt (2016) points out, a group that combines activism, militancy, and science "resonates today under the banner of #BlackLivesMatter."

This book raises important issues of maintaining strong ethics in research and avoiding bias and other forms of scientific misconduct. Nelson's work speaks to several modern-day issues that the authors of this article will be researching, including a persistent lack of primary prevention and health screening, marginalization of vulnerable populations, and the need to increase diversity in the healthcare workforce. Sadly, black communities are still confronted by several realities that make them vulnerable, including unemployment, poor housing, psychosocial problems, and a hesitance to seek medical care or participate in research due to mistrust of the health care system. Gaining the historical perspective of the realities of racial discrimination outlined in *Body and Soul* has helped to increase our empathy and critical thinking skills and will make us more competent scientists and clinicians.

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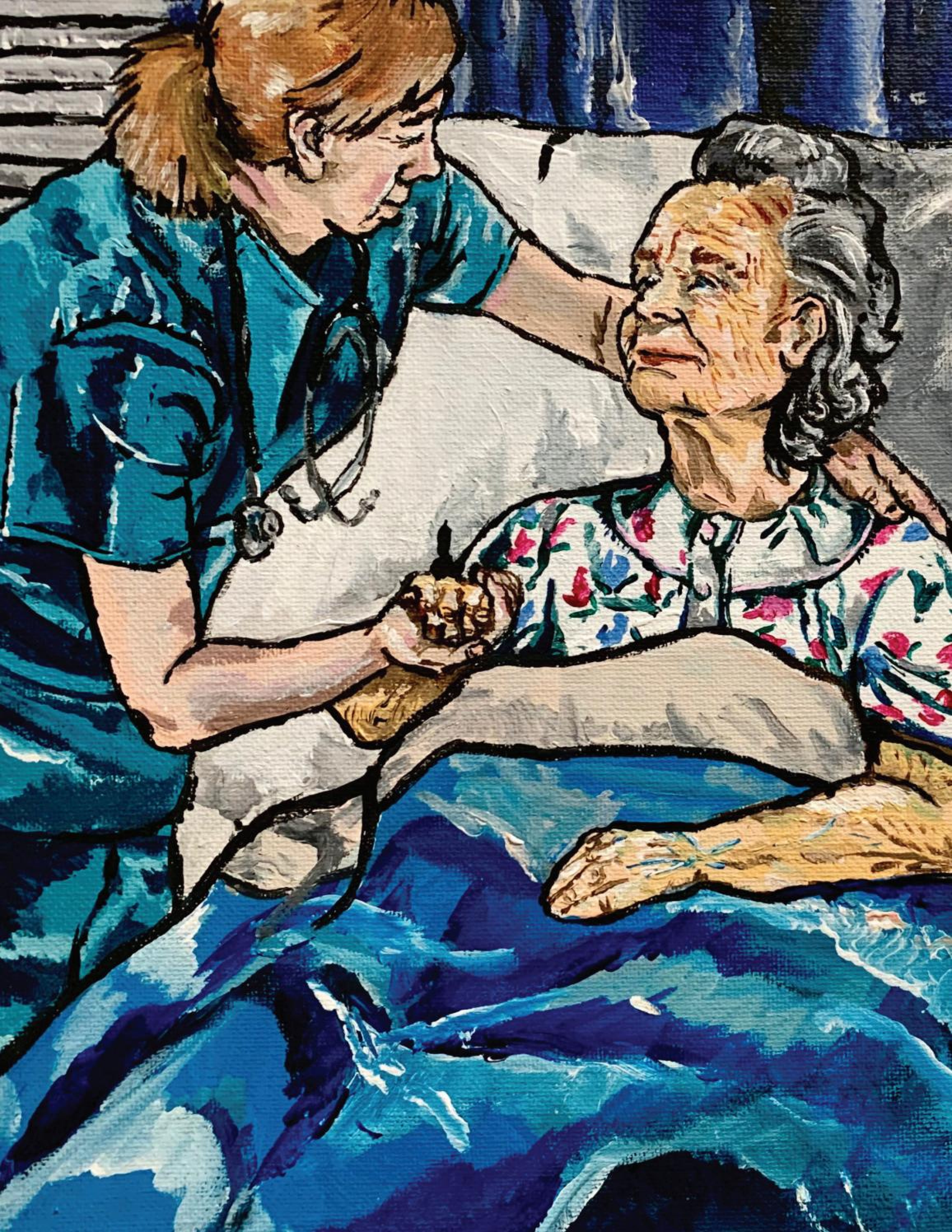

Nurses Caring for Patients with Drug Addiction: A Systematic Review

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Introduction

People with drug addiction may require an unplanned admission to an acute care setting for a health issue unrelated to their drug use. Such patients often present with complex co-occurring psychosocial circumstances that can complicate an inpatient stay (Donroe, Holt, & Tetrault, 2016). Despite good intentions, nurses and other healthcare professionals often hold negative and stereotypic attitudes towards patients with drug addiction (Carroll, 1995; Happell & Taylor, 2001). Furthermore, nurses and others may not have the resources or education to appropriately care for patients addicted to drugs, and thus, patients addicted to drugs often feel judged or underserved (Happell & Taylor, 2001). Despite the increase in drug overdose deaths in the United States over the last decade, there is a lack of knowledge about nurses' experiences caring for patients addicted to drugs (Hedegaard, Warner, & Miniño, 2018). Though nurses are the care providers most often at the bedside of patients addicted to drugs, there is a lack of knowledge about nurses' perceptions about this experience. The aim of this paper was to synthesize evidence related to nurses' perceptions of the care they provide for patients with drug addiction, with the goal of reducing the bias of nurses caring for this vulnerable population. Additionally, this paper aims to explore future directions for research to improve the care and outcomes of patients addicted to drugs.

Methods

A systematic review addressed the aim of this paper. A systematic review attempts to bring together all empirical evidence that fits pre-specified eligibility criteria to answer a specific research question (Higgins & Green, 2011). It is an analysis of the available literature and a judgment about its effectiveness which involves a series of complex steps (Joanna Briggs Institute, 2018). The goal of a systematic review is to use explicit methods to minimize bias and therefore improve the reliability of findings (Higgins & Green, 2011). This review utilized the Joanna Briggs Institute (JBI) critical appraisal tool. Ideally, two trained JBI reviewers complete this process and where disagreements occur a third reviewer is consulted. However, due to limited resources, the critical appraisal was performed solely by the author.

A systematic review using the JBI critical appraisal tool is an appropriate approach for this research question based on the existing body of literature. The literature about nurses' perceptions regarding the care they provide to patients with drug addiction is largely qualitative, and to our knowledge, no s ystematic review of this literature has been conducted.

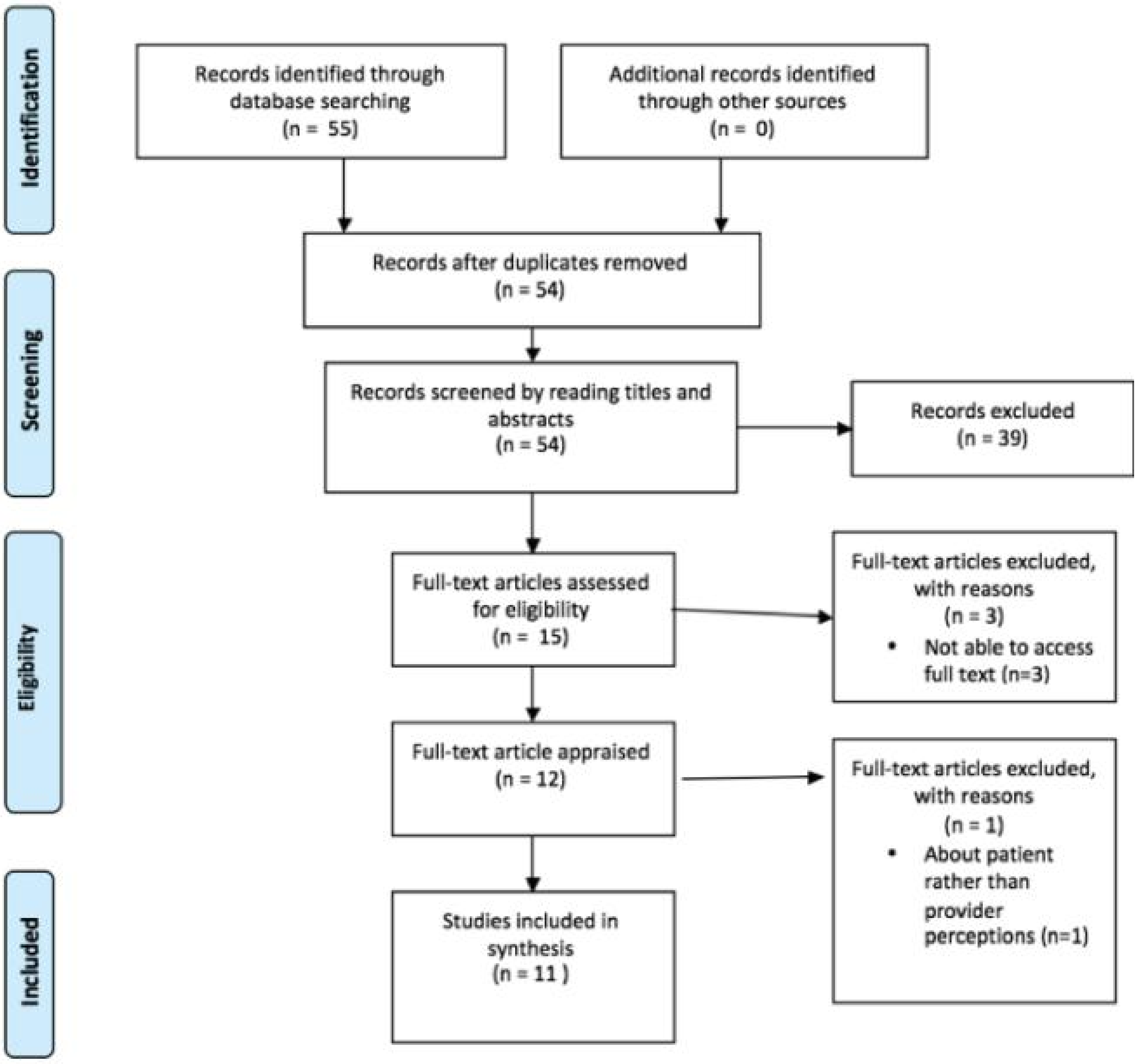
Search Strategy

CINAHL, a database for nursing research, was searched from 2008-2019. This time period was chosen because of a paradigm shift that occurred a decade ago with the move away from the use of heroin and towards the use of prescription pain medications in 2008, transforming the way healthcare providers viewed drug use (Fischer & Rehm, 2018). On CINAHL, the following search was used: ((MH "Substance Use Disorders+" OR MH "Substance Dependence+" OR AB "addicts") AND MH "Nurse-Patient Relations") NOT (MH "Alcohol-Related Disorders+" OR MH "Alcohol Withdrawal Syndrome+"). The search terms used were decided through collaboration with a university librarian.

Included studied were written in English and were published in a peer-reviewed journal. A title and abstract screen was conducted to narrow down the number of relevant articles. Inclusion criteria for the title and abstract screen specified that both drug addiction and nursing care are included in the title or the abstract. Additionally, as determined by the title and abstract screen, articles were included that focused on nurses' perceptions and not the patients' perceptions. An exclusion criterion was if drug addiction was not the main focus of the article and was merely a comorbidity associated with other diseases (eg: HIV, sickle cell, smoking). Full text articles were retrieved for abstracts that meet the inclusion and exclusion criteria. Full text articles were read and evaluated using the JBI method for evaluating systematic reviews, and methodological quality was assessed using JBI Critical Appraisal Checklists. Articles where at least 70% of the JBI checklist questions were answered with a "yes" were deemed to meet the quality threshold. Data were extracted using Excel so that relevant information from each study could be aggregated.

Results

A total of 55 studies were identified through systematically searching CINAHL. This Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram shows the study selection process:



Methodological Quality

Out of the 12 studies, 11 of them were methodically strong. Overall, four articles scored greater than or equal to 90% on the appropriate JBI critical appraisal tool (Chang & Yang, 2012; Lovi & Barr, 2009; Lundahl et al., 2013; Thorkildsen et al., 2015), while one article that scored 40% was excluded (Paivinen & Bade, 2008). The remaining articles scored between 70% and 89% (Bartlett et al., 2013; Cleveland et al., 2013; Finney, 2010; Ford et al., 2009, Monks et al., 2012; Natan et al., 2009; Romisher et al., 2018).

Study Designs and Samples

Of the 11 studies included in the review, four studies were cross-sectional (Chang & Yang, 2012; Ford et al., 2009; Natan et al.; 2009; Romisher et al., 2018), five were qualitative (Cleveland et al., 2013; Paivinen & Bade, 2008; Lovi & Barr, 2009; Lundahl et al., 2013; Monks et al., 2012; Thorkildsen et al., 2015), and two were text and opinion papers (Bartlett et al., 2013; Finney, 2010). Three studies were conducted in the United States (Bartlett et al., 2013; Finney, 2010; Romisher et al., 2018) and the remainder were internationally representative. For the cross-sectional articles, sample sizes ranged from 54 nurses (Romisher et al., 2018) to 489 nurses (Chang & Yang, 2012), each study representing at least two hospitals. Sources of data sets varied in large part due to the significant geographic variability among the included studies. All but one article took place in a hospital setting (Thorkildsen et al., 2015).

Themes

From a synthesis of the literature, three themes emerged in response to the research question about nurses' perceptions regarding the care they provide for patients with drug addiction: 1) nurse bias when caring for patients who are addicted to drugs, 2) the need for nurse education and structural support to reduce nurse bias, and 3) the complex care needs of patients who are addicted.

Structural Support to Reduce Bias

Seven out of 11 studies found that nurses perceived structural supports, such as nurse education or role supports on a hospital unit, to help reduce nurse bias when caring for patients addicted to drugs (Chang & Yang, 2012; Finney, 2010; Ford et al., 2009; Lovi & Barr, 2009; Lundahl et al., 2013; Monks et al., 2012; Romisher et al., 2018). Nurses need systems that provide ongoing education related to caring for patients who are addicted in order to reduce nurse bias (Finney, 2010; Lundahl et al., 2013; Monks et al., 2012). Nurse bias may be mitigated by having a system that fosters role support, such as clinical supervision. Such supervision has been shown to allow for workplace education to have an impact on the attitudes of nurses (Chang & Yang, 2012; Ford et al., 2009). Furthermore, the nurse-patient relationship suffers from the lack of educational preparation for nurses to care for patients addicted to drugs (Monks et al., 2012; Romisher et al., 2018). Because of the stigma that patients addicted to drugs face, education about stigma should be added to the BSN curriculum (Lovi & Barr, 2009).

Nurse Bias

Of the 11 studies, four addressed the presence of bias among nurses caring for patients who are addicted to drugs (Bartlett et al., 2013; Cleveland et al., 2013; Finney, 2010; Natan et al., 2009). Because nursing staff members were found to have negative attitudes towards drug users and held negative stereotypes of drug addicted patients (Natan et al., 2009), it is especially important for nurses to be aware of their own biases when caring for patients who are addicted (Finney, 2010). While some nurses may try not to be judgmental of mothers with addiction, patients still report feeling judged and marginalized in their nurse interactions (Cleveland et al., 2013). Nurses may be show more bias to patients when they feel like they are helping the patient manage the effects of addiction instead of overcoming the addiction (Bartlett et al., 2013).

Complex Care Needs

Out of 11 studies, four found that nurses perceived patients addicted to drugs have complex physical and social care needs (Bartlett et al., 2013; Lundahl et al., 2013; Natan et al., 2009; Thorkildsen et al., 2015). While nurses state their aim to help patients addicted to drugs live as healthy a life as possible, the complex needs of these patients are often challenging for nurses to manage on their own (Bartlett et al., 2013). Perpetually managing unpredictable and precarious situations for patients who are addicted to drugs was perceived as challenging for nurses (Lundahl et al., 2013) and influenced nurse attitudes towards patients struggling with addiction (Natan et al., 2009). One study found that part of the inherent ethos of nursing which involves humanistic thought and action toward patients in an effort to alleviate suffering and promote health may frame approaches to addressing the challenging psychological needs of patients facing addiction (Thorkildsen et al., 2015).

Discussion

Overall these findings show that bias exists among nurses caring for patients with drug addiction. The complex needs of addicted patients make providing high quality nursing care challenging and nurses need better education, training, and role support in order to better provide unbiased care for patients addicted to drugs. Future work is needed to explore how nurses can provide high-quality, unbiased care for this vulnerable population. Furthermore, in the context of the current opioid crisis, an epidemic that has largely affected white, rural Americans, future research should examine the intersections of race and drug addiction and how bias operates differently for diverse populations with different types of addiction. Because most bias is linked to deeper stigmas and socially-conditioned attitudes about race and gender, future research should explore whether there are different stigmas toward different types of drug-users – such as mothers, women verses men, and poor verses affluent individuals. As pioneers of public health, nurses should be at the core of solutions designed to address the opioid crisis – one of the most pressing public health issues in recent history. Nurses in hospitals must be aware of the salient care needs of patients who are drug addicted and be committed to meeting them. Nurses in various settings have a valuable role to play in advocating for patients who are drug addicted, including coordinating care, comprehensive discharge planning and teaching, and ensuring social work support for patients. Thus, it is essential that nurses combat bias in order to deliver competent, compassionate, excellent care for this vulnerable population whose needs are too often unmet.

This review demonstrates a pressing need for structural and educational support for nurses caring for patients with drug addiction in order to reduce nurse bias. Considering the bio-psychosocial model of nursing education, it may be beneficial for nursing education to include content on how bias manifests, implicitly and explicitly, towards certain populations, like those who are drug addicted. Current nursing curricula lacks a standardized approach to caring for these patients; nurses in training and the workforce may benefit from education on topics such as implicit bias so that they can provide high-quality, unbiased care. These findings build on the existing literature and show that that patients with drug addiction have acute and unique care needs that warrant special considerations. While nurses are human and therefore will likely operate with some degree of bias, it is important to identify bias and its roots, and address ways to mitigate it in nurses caring for patients who are drug addicted.

Limitations

A limitation of this review is that the critical appraisal was performed solely by the author and only in one database (CINAHL). Infants with neonatal abstinence syndrome were excluded because nurse bias manifests differently with infants who are drug addicted. Therefore, a limitation is that the clinical relevance of certain conditions was not captured in the literature search, so some articles may have been missed by not expanding the search to include neonatal abstinence syndrome. A final limitation is that this systematic review examined drug addiction broadly, though there are many types of drug addiction, each of which may be perceived differently in society than others.

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Reproducing empire: Race, sex, science, and US imperialism in Puerto Rico – A Book Critique

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Reproducing Empire: Race, Sex, Science and U.S. Imperialism (2002) by Laura Briggs documents the ways in which Puerto Rican women have been portrayed by a broad array of players seeking political power and legitimacy in the colonial and imperial contexts, as well as scientists and activists in recent history and contemporary times. "For American feminists, Puerto Rican nationalists, the U.S. military, the federal government, philanthropists, and academics, it has been important to 'know' Puerto Rican women's bodies, and to rescue, condemn, or defend the working class women" (Briggs, 2002, p.15). By drawing upon a variety of sources including political documents, popular media representations, and academic publications, Briggs narrates the creation and propagation of various images of the Puerto Rican woman—the tropical prostitute, a mechanism of overpopulation, the subject of birth control interventions, the victim of forced sterilization, a reproducer of the culture of poverty. While the locus of power shifts in each historical context, from dominating imperialists to paternalistic legislators, from mainland feminists to liberal social scientists, Briggs repeatedly argues that the representation of Puerto Rican women's bodies are poorly evidenced and largely generated by those in power. However, these depictions proved to be very influential, used by many actors to push agendas, which are often rooted in U.S. mainland issues rather than those of the island.

Published in 2002 by the reputable University of California Press, *Reproducing Empire* has been cited over 300 times, a testament to the academic success of Laura Briggs. Professor and chair of Women, Gender, Sexuality Studies at UMass-Amherst, Laura Briggs is an internationally known historian of reproductive politics. In many of her works Briggs is a critic of feminist tradition across all realms of reproduction and immigration, and in *Reproducing Empire* she continues to uncover the margins by which the sexuality and reproduction of Puerto Rican women were defined by external factors, including leading feminist movements of the times. Viewed from our contemporary position, the book can already be considered dated and in need of a second edition. Puerto Rico has been effectively shut out of capital markets and seeks to restructure its $72 billion of outstanding debt. This context provides ample opportunity for Briggs to draw upon her historical analysis of immigration and economic policies and place her work back into the spotlight to help legislators and citizens understand why, despite being American citizens, Puerto Ricans are not receiving federal bailouts at a time of economic peril and bankruptcy.

The book is structured as a historical narrative, divided into six chapters, each containing an account of how Puerto Rican women were personified and the related debates in which they are situated. First, in the colonial context, the notion of the global prostitute as a vector for "non-white" venereal disease was transplanted onto the Puerto Rican female, placing the island in the middle of a debate between military leaders who saw prostitution as vital to peace in providing an outlet for troops, and feminist groups, such as the women's Temperance Christian Union, who advocated for the protection of white women and children. This image of "savage" and "native" women as hotbeds of syphilis and other venereal disease would follow Puerto Ricans as they migrated to the mainland, contributing to marginalization. Later, the questions of whether prostitution should be regulated or whether divorce should be legal in Puerto Rico are examined in connection to the economic basis of the annexation of Puerto Rico in 1898 and the later declaration of Puerto Ricans as U.S. citizens in 1917. The legal issue of whether prostitution should be regulated became a proxy for U.S. legislators to debate the legal status of Puerto Rican citizens, raising questions of how Puerto Rico is represented that exists to this day.

The middle chapters of the book illuminate themes of U.S. imperialism as they played out during the 1920-1960s: representations of Puerto Rico as "overpopulated" and Puerto Rican sexuality as uncontrolled were used by reproductive activists' with agendas pushing for increased study of and access to birth control. Left-leaning feminists used the purported existence of a forced sterilization program as a cause to save Puerto Rican women, but drowned out the voices of Puerto Rican feminists in the process. Drawing on survey data of Puerto Rican women who said they were not forced into sterilization procedures and administrative data showing the poor quality of Puerto Rican healthcare facilities, Briggs claims that authorities did not have the means to carry out such a program, so such "saving" was fundamentally misinformed. Finally, Briggs points out how conservative social scientists and sensationalist journalists characterized Puerto Rican post-war migrant communities in New York as "a culture of poverty," implying that poverty is a trait passed down through single-parent families, rather than the result of economic policies. Later studies by liberal social scientists showed that Puerto Ricans were in actuality successful, but defined success in terms of cultural assimilation.

The author's organization of evidence by topic makes clear her assumptions of knowledge creation as products of their time and place. Within each topic, she builds her evidence chronologically, pulling from many difference types of primary sources, such as congressional correspondences and even newspaper cartoons, and weaves the narrative to show connections between thought and action. Often, and explicitly, she reveals how frequently the various actors, the knowledge they use or produce and the mission of their work "ironically" contradicted itself. For example, in the wake of "mainland" providers and scientists providing and researching birth control for working women of Puerto Rico, there was a time at which Puerto Ricans "construed efforts to enact birth control measures as part of a genocidal plot by North Americans" (Briggs, 2002, pg. 77). However, Briggs shows how it was instead "insular" Puerto Rican feminists who were the first to champion birth control rights in Puerto Rico. This contradiction is one of many, and "suggests a great deal about how compacted a symbol birth control really was, at once an argument about economics, poverty, nationality, and U.S. political and military intervention" (Briggs, 2002, pg. 77).

An issue with Briggs' arguments points to a common problem of historical methodology: developing knowledge and discussing Puerto Rican women in the absence of Puerto Rican women as sources. She argues that the voice of Puerto Rican feminists throughout history have been crowded out, but the same could be said of her choice of sources. She relies heavily on primary sources such as scientific opinion, statesmen, and mainland feminists; sources from Puerto Rican women are rare and at times were negated by Briggs herself. Cuban-Puerto Rican director Ana Maria Garcia, in her film *Operacion*, claimed that a program of forced sterilization did exist, but Briggs used the accounts of Puerto Rican women in the film to argue the opposite. On the same subject, she cited data from scientific studies that asserted that Puerto Rican women were not forced to undergo sterilization procedures, while admitting that the data collection methods of such studies were questionable. Several critics claim that in her negligence to bring the voice of laboring women to light, as was so often the case in accounts of Puerto Rico's history, Briggs actually loses sight and fails to discuss how these women have shaped U.S. policies and politics (Renda, 2005; Birn, 2005). One native Puerto Rican academic lambasts Briggs for failing to represent Puerto Ricans as displaced workers suffering US economic oppression, instead blaming these working women as, "agents that reproduce the 'culture of poverty'" in her work (Pantojas-Garcia, 2005).

Briggs attempts to resolve these methodological concerns that affect the historical examination Puerto Rican women's sexuality in the book's epilogue, where she invites the reader to ponder the value and shortcomings of the book's analysis itself (Levinson, 2007). She refers to the Puerto Rican women as "ghosts" in the text (Briggs, 2002, p. 209). Drawing on the work of postcolonial intellectual Gayari Spivak, author of "Can the Subaltern Speak?," Briggs notes the complications behind the act of well-meaning intellectuals calling for the oppressed to speak for themselves. While the various actors and sources talk about or directly address Puerto Rican women, ultimately such speech is a reflection of the speakers themselves instead of the women. While Puerto Rican women exist as subjects or addressees, Briggs says that her point is to examine the motives of those who claim to speak on their behalf. Admitting her own tenuous position as a non-Puerto Rican writing about a land that fascinates her from the distant U.S. mainland, Briggs evades the act of representing "real" Puerto Rican women by pointing to the book's content, a body of outsiders attempting to represent Puerto Rican women accurately, only to misrepresent them. This book is ultimately evidence of how researchers, historians, anthropologists, and documentary filmmakers, in their attempts to lend a voice to Puerto Rican women, inevitably modulate their voices to serve their own means. At the very least, Briggs does not excuse herself from such faults.

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Combat Injury Research: A Competitive Analysis of Perspectives

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Abstract

Ongoing military conflicts around the globe have led to the deployment of millions of United States military personnel. The destructive weaponry of modern warfare has left tens of thousands wounded in action. Understanding the relationship of these injuries to physical and mental health is critical to addressing the rehabilitative needs of wounded warriors. The relationship between pain and post-traumatic stress disorder (PTSD) among combat-injured military personnel is unique and understudied. Studies examining combat injured military personnel and Veterans of Operation Enduring Freedom, Operation Iraq Freedom and Operation New Dawn can be conducted using various perspectives. Here two juxtaposing perspectives, historical and empirical research lenses, are discussed and explored. These two perspectives offer unique contributions to combat injury science. Findings demonstrate the compelling need for continued research utilizing empirical methods, such as positivism and post-positivism, to improve the quality of science to better provide best clinical practices for those recovering from major combat-related injuries.

Introduction and Background

Recent military conflicts over the past decade have resulted in the deployment of over 2.4 million United States military personnel to the Middle East (Spelman, Hunt, Seal & Burgo-Black, 2012). Deployment to combat zones expose service members to the lethal tactics of modern warfare (Litz & Schlenger, 2009). Since 2001, over 50,000 troops serving in Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and/or New Dawn (OND) have suffered combat injuries (Woodruff, Galarneau, Luu, Sack, & Han, 2014; "Defense Casualty Analysis System", 2015). The mechanisms of battlefield trauma have shifted from gunshot wounds to devastating high-velocity weapons and improvised explosive devices (IEDs) that in total compromise 75% of all combat inflicted trauma. Consequently, countless numbers of military service members suffer from complex polytraumas consisting of burns, deep wounds, loss and/or mangled extremities, and major blunt trauma to vital organs (Owens et al., 2008). Despite the increase in warfare weaponry, survival rates from devastating complex polytrauma have markedly improved over past wars, in part, due to technological and medical advances, such as body armor, rapid casualty evacuation and pre-hospital care, and advances in combat casualty care (Gawande, 2004; Remick, Dickerson, Nessen, Rush, & Beilman, 2010; Penn-Barwell, Roberts, Midwinter, & Bishop, 2015). However, this unprecedented progress has created a need for more comprehensive rehabilitative care and services for combat injured military personnel who suffer from both the visible and invisible wounds of war. The "polytrauma clinical triad" of pain, posttraumatic stress disorder (PTSD), and traumatic brain injury (TBI) evident in over 40% of Veterans from OIF and OEF has now become the focus of care for military service members and Veterans sustaining combat injuries (Lew et al., 2009). High rates of mental disturbances such as depression co-exist with this polytrauma triad that further complicate the level of care and services required to respond to the multiple physical and mental health needs of those injured in combat (Copeland et al., 2011). Research addressing the short and long-term physical and psychosocial impact of severe life threatening and complex combat injuries is continuously evolving. Examining the interrelatedness of pain and PTSD and the influence these physical and mental conditions have throughout recovery can be a complex line of research. As such, this critical analysis seeks to analyze, through various perspectives, how current and future research can be conducted across research disciplines to examine the relationships of pain and PTSD in military service members and Veterans who sustained major trauma in the combat theater. Understanding the current state of the science, including commonly used empirical research designs, requires a holistic understanding of the historical approach that has shaped and guided military injury clinical management and research. Therefore, this comparative analysis will examine how combat injury research can be conducted using these two juxtaposing ideological perspectives: historical and empirical lenses.

The Historical Approach

"We know the future only by the past we project into it. History in this sense, is all we have" (Gaddis, 2002, p. 3)

What is Historical Research & How to Conduct it

Placing current and future combat injury research in a historical context is essential to understanding the current research efforts and challenges that pervade across time and generations of wounded service members. Historical research is the process of systematically examining past events to give an account of what has happened in the past and not a simple accumulation of facts and dates or even a description of past events (Streubert & Carpenter, 2011). This account places current research in a context. Finding this context can be difficult without first understanding and evaluating the socioeconomic, political, linguistic and technological advances that scientific research operates in. These external factors to the labs and research hubs help researchers to interpret empirical clinical findings outside of a vacuum of p-values and statistical significance. Instead, current research is heavily influenced by past events and built upon the research produced under historical factors unique to the time periods in which studies are conducted and published. Combat injury science is no exception. Understanding the scientific research conducted today to better understand and care for those wounded in battle and their recovery process is dependent on previous research and historical events.

From the time of Homer and the *Iliad*, history has been a documented narrative of the human experience. Universal definitions and systematic means by which to conduct historical research are elusive and as a result may hinder the recognition of this perspective as a valid means to research combat injury science by some researchers. Still, many researchers have sought to find a tangible definition that is adaptable across domains of research:

- "Integrated, written record of the past events, based on the results of a search for truth…resulting in an objective realism" (Kruman, 1985).
- "Historical inquiry examines the interactions of people, activities, and 'multiple variables' that affect human thought and activity" (Matejski, 1986)
- "The study of creative activity in human behavior that gives one the courage to create and respond to what is new without fear of losing one's identity with the whole of humanity" (Ashley, 1978)
- "A narrative of events connected with a real or imaginary object, person or career…devoted to the ex position of the natural unfolding and interdependence of the events treated" (Streubert & Carpenter, 2011)

The variability of these definitions embodies the unique role historical researcher's beliefs, biases, and concerns play when conducting research with a historical lens. For the purpose of this analysis one commonly used conceptual model will be explained and utilized to look at the relationship of PTSD and pain among combat injured military personnel.

The conceptual model to undertaking historical research laid out by Dr. Gaddis and adapted by Dr. D'Antonio consists of 5 procedural underpinnings that can be applied to combat injury research. This model includes having the researcher recognize:

1. The interconnectedness of variables
2. Manipulation of variables
3. Contextualization & causation
4. Judgment
5. Ambiguity

Within this model the interconnectedness of variables requires that no one variable be favored over another. Therefore when evaluating this phenomena, variables of interest include PTSD, pain, and combat injury. Additionally, researchers undertake a manipulation of variables. This requires an evaluation of variables within context within place & time to judge significance. Therefore, each variable's historical context must first be evaluated before a complete analysis of their overall interactions and a construction of larger context can be conducted. This leads the researcher to a point of contextualization & causation. This is when the variables of interest place the phenomena in the appropriate time period. This step is not just describing the events leading to today's state of combat injury research but instead provides an understanding why current research and events occur as a result of earlier experiences. This contextualizing of the phenomena leads to the step of research judgment. This phase is the process of understanding where factors and variables fall and influence the phenomena of interest. How does the historical framework of pain and mental health illnesses and their clinical presentation and management among combat injured military personnel lead to today's understanding of their relationship? Finally, researchers utilize Dr. Antonio's unique nursing adaptation to the model by the creation of ambiguity within their findings. Here is when the researcher must leave a creation of doubt and complex questioning for other researchers to evaluate the phenomena. The phenomena must be placed at the intersection of human experience, day-to-day life & allow for current and future ideas or events to collide with the findings and provide the opportunity for other historians to dispute or concur, while never being able to fully recreate the narrative told.

Others have described less formal steps in the process of collecting primary and secondary data sources, analyzing its reliability and authenticity, arranging it into patterns and themes, then expressing this data in a meaningful way, through the creation of the narrative (Streubert & Carpenter, 2011). Still others argue for three essential steps in the production of written historical work: the gathering of data; the criticism of the data; and the presentation of facts, interpretations, and conclusions in readable form (Christy, 1975). Data sources for historical researchers is critical to describing phenomena of interest (Streubert & Carpenter, 2011). The statistical and census-based data available from the US military provides combat injury researchers a plethora of opportunities to investigate and analyze trends and patterns in military care and battle injuries. Additionally, journals written by wounded service members, or written by their clinical providers, such as nurses, offer even greater opportunities to conduct historical research. The use of diagrams and for some conflicts, photographs, taken in combat settings and military clinics can be useful to researchers when trying to craft a narrative. These sources of data, housed in private collections, archives, and libraries, provide first and second-hand accounts of how warfare was fought, and parallel the evolving medical advances made over time.

Role of the Researcher

Regardless the order of the steps, the core methodology of historical research lies in the role of the researcher to recognize their own biases and beliefs when analyzing variables, designing the context of the phenomena, and their dissemination of the narrative (D'Antonio, 2008; McCullagh, 2000). Although historians can infer particular facts about the past from the evidence available to them, the way they give meaning to those facts is by presenting relations between them as a function of their own creative imagination constrained by no particular cognitive requirements, which in turn introduces the personal bias of the researcher (McCullagh, 2000). An essential role of the historical researcher is to disseminate their work in the form of narrative that extends beyond academic circles. This narrative creates an "objective realism" or truth that is only created by the researcher and in need of exploration and criticism by the participants of the narrative (Kruman, 1985). Therefore the phenomena of combat injury and co-occurring pain and mental health illnesses would be presented as a narrative comprising stories of how military personnel injured across conflicts and time periods interact in the acute care and rehabilitative phases. Additionally, this phenomena, in a historical lens, could be a narrative of comparing and contrasting the political, socioeconomic, and linguistic landscape across armed conflicts and the influences these variables had in the care and treatment of combat-injured military personnel.

Approaches to understanding these variables and their relationships include investigating the evolution of diagnosing PTSD and pain in combat theater. Additionally, understanding the political factors that lead to armed conflict, military engagement and weaponry, mobilization, and the subsequent epidemiology of injuries and survival among combat injured military personnel can help advance our current understanding and limitations in conducting meaningful and useful studies that can eventually translate to best evidenced based practices. These findings in turn can benefit clinicians to provide better care at the bedside and in combat theaters.

The Empirical Approaches: Positivist and Post-Positivist

"Formulaic precision has enormous utility when the aim of the science is the prediction and control of natural phenomena" (Guba & Lincoln, 1994, p. 107).

What is Empirical Research & How to Conduct It?

The empirical-analytic research, or traditional lens of science originates from a paradigm that assumes science is conducted in an ordered world whereby phenomena, such as combat injury science, is driven by natural causes. The French philosopher and social theorist Auguste Comte (1798–1857) is considered to be the creator of this tradition, better known as positivism (Kremer-marietti, 2015; Bordeau, 2014). His work sought to legitimize phenomena and fields of science based on their arrival to the positivist approach which naturally placed bench sciences and mathematics superior to many of the social sciences, including nursing (Kremer-marietti, 2015). This mindset required that researcher's role would be to discover the laws that govern human behavior on a large scale, and the ways in which social institutions and norms operate together in a complex yet ultimately predictable system (Kremer-marietti, 2015). He is credited the foundation of 3 laws for advancing science whereby each paradigm development passes through three successive stages: the theological, the metaphysical, and the positive. In the positive state, the researcher stops looking for causes of phenomena, and instead seeks to prove the laws governing them (Bourdeau, 2014). This foundation set out by Comte has been summarized and adapted by many philosophers, particularly Austrian and German philosophers in the 1920's, and even today by nurse researchers. This summation of the positivists' beliefs, while varying over time and across disciplines, includes:

1. 'Brute' facts exist to be discovered
2. Knowledge of these facts/truths, develops from what is directly observable and testable (empiricism)
3. The social world of human experience, can be reduced to quantifiable logical schemes with 'universal covering laws' (reductionism)
4. The remit of science is to explain, predict and control phenomena
5. Observations can be made objectively by adherence to the rigors of certain methodological conventions, an acceptance that science can be value free (Payle, 1995).

It is important to note several key underpinnings of positivism, which is a central approach to conducting empirical research. Positivist researchers utilize a reductionist and deterministic approach when conducting research (Guba & Lincoln, 1994). The ontological beliefs of positivism are that an apprehendable reality is assumed to exist, and is obtainable through the discovery and proof of absolute or natural truths of knowledge (Welford, Murphy & Casey, 2011; Guba & Lincoln, 1994). The methodology for conducting this research and the investigator's ability to remain unbiased towards the experiment is dependent on validity and rigor of the research design. As such, the methodology of conducting positivist research is heavily dependent on quantitative methods that allow for statistical modeling to manipulate completed data and verify the researcher's initial hypotheses (Welford, et al., 2011). The objective of this methodology is to identify, control, or manipulate any confounders that may prevent finding a true outcome (Guba & Lincoln, 1994). Maintaining tight control over the context of the hypothesis allows for generalization of results and the specific concepts studied (Young, 2008). The highly rigid search for truth led some researchers to break from the perspective and go on to develop new empirical perspectives that still valued some components of positivism, such as rigor.

Post-positivism contends that the whole truth is never fully apprehendable, but is approached progressively through the process of research, thus lending itself to research questions involving complex social and cultural phenomena, while maintaining the positivist adherence to objectivity and rigor (Kennedy, & Lingard, 2006). As stated before positivism claims the existence of one single reality, one absolute truth. Post-positivism research similarly seeks to prove the one single reality but claims that it is never fully apprehendable. This ontology is considered to be a critical realism (Guba & Lincoln, 1994). Reality and truth are never truly obtainable through research methods because of the flawed human intellectual (both the participant's and the researcher's) and the inflexible nature of the phenomena of interest (Guba & Lincoln, 1994). Replication of findings is critical to advancing knowledge of phenomena.

Role of the Researcher

The epistemology of this positivist approach is considered dualist and objectivist, where the researcher is studying the variables of interest without influencing, or the researcher themselves being influenced, by the end outcomes (Guba & Lincoln, 1994). The researcher is removed from the experiment, almost as if by a one-way mirror, and as a result the researcher's values and biases cannot influence the outcomes (Guba & Lincoln 1994; Welford, et al, 2011; Meleis, 2011). This process allows for the preservation or rigorous research methods. In this perspective combat injury researchers must design prospective longitudinal studies or even better randomized control trials whereby confounding factors are controlled for, either through statistical modeling or study design, to better understand the roles combat injury, pain, PTSD, and other mental health illnesses have on military personnel. This requires statistically significant samples, rigorous and accurate data collection, blinding of researchers or participants if an intervention is implemented, and clear definitions of independent variables and the dependent variable prior to study implementation. Data is collected thorough questionnaires, clinical charts, and intervention results. The impractical nature of attempting to remove all human elements such as bias from the research process, as well as the limitations of testing hypotheses through mathematics alone, has led many fields toward the perspective of post-positivism.

The role of the researcher has very different position within post-positivism research. Discretionary judgement of the researcher is seen as unavoidable and as such the researcher is never truly removed (Welford, et al., 2011). The objective nature of researchers and their work remains but the epistemology of dualism is removed in favor of the critical communities of scholarship to help identify if results fit within preexisting frameworks of knowledge. These communities consist of editors and research peers that are integral in today's publication process to ensure quality and objectivity (Guba & Lincoln, 1994). Post-positivist methodology requires triangulation of results allowing for falsifying and proving hypothesis wrong in manner that positivism does not. This allows greater emphasis to more natural experiments that collect situational (i.e. cross-sectional studies), and the solicitation of participant and researcher viewpoints in determining the meanings and purposes individuals attribute to their actions (Guba & Lincoln, 1994; Glaser & Strauss, 1967). Study designs value empirical testing and data collection using precision instrumentation but allow for the valued addition of qualitative data to better understand multiple hypothesis (Welford, et al., 2014; Glaser & Strauss, 1967). In the post-positivist role combat injury scientist are not removed from their experiments and subjects but instead recognize their inability to be truly separated from the experiment and participant and thereby proving that brute truth in the phenomena is never fully obtainable. In this way it is possible for combat injury researchers to approximate, but never fully know, the relationship between PTSD, pain, and combat injury. Instead the research community seeks to invest in critical research not in search of replicating findings but rather to challenge existing hypothesis of cause and effect (Guba & Lincoln, 1994).

Conducting Combat Injury Research in Each Perspective

Combat Injury Science in the Historical Perspective

The diagnostic revolution, which began at the end of the 19th century and has continued well beyond into the modern era of clinical practice, has been cited as a key driver in shifting how diseases and illness are classified and recognized (Aronowitz, 1998). The new diagnostic technology enhanced physicians' abilities to investigate and diagnose disease. Historians argue that clinicians derived much of their cultural and clinical authority from their association with a technology, and a mastery over interpreting the data produced by new technologies, that in turn was seen to embody science (Sandelowski, 2000). The historical evolution of how PTSD, depression, and pain were perceived, diagnosed, and treated in clinical trauma care is woven into the fabric of this diagnostic revolution. For example, Dr. Matthew J. Friedman (2015), a Senior Advisor at the National Center for PTSD, has depicted the diagnostic birth of PTSD diagnosis in clinical practice:

In 1980, the American Psychiatric Association (APA) added PTSD to the third edition of its Diagnostic and Statistical Manual of Mental Disorders (DSM-III) nosologic classification scheme. Although controversial when first introduced, the PTSD diagnosis has filled an important gap in psychiatric theory and practice. From an historical perspective, the significant change ushered in by the PTSD concept was the stipulation that the etiological agent was outside the individual (i.e., a traumatic event) rather than an inherent individual weakness (i.e., a traumatic neurosis). The key to understanding the scientific basis and clinical expression of PTSD is the concept of "trauma."

PTSD as a recognized diagnosable medical psychiatric condition did not appear in clinical practice despite centuries of traumatic combat induced injuries. Instead clinicians in conflicts prior to the Vietnam War had described both injured and uninjured military service members experiencing "irritable heart" during the Crimean War, and "shell shock" or "combat fatigue" as seen in World War I & II. However this error in diagnosing or lack of recognition of the severity of mental health at these times cannot be judged within a modern context but instead researchers must evaluate the variables that allowed for PTSD to become a diagnosable illness among military personnel.

The World Wars saw a mass mobilization of armed forces, which led to increased numbers of troops exposed to devastating trauma. Advances in weaponry led to more devasting injury, while advances in medicine and nursing allowed for greater survivability from combat wounds. These factors together account for why many service members were left to bear previously undiagnosed psychological burdens of war, such as PTSD (Jones & Wessely, 2005). Other opportunities to explore combat injury science through the lens of historical research includes understanding the development of rehabilitative care in modern conflicts, a result of improved medical options available to make war wounds more survivable (Linker, 2011). Furthermore, the many technologies and advancements in pain management may in part be driven by the sociocultural norm of clinicians recognizing pain as a subjective and objectively measured clinical condition that can be detrimental to a patient's recovery after injury (Friedman, 2015). Future lines of inquiry using a historical lens include: How has the trajectory of combat injured military personnel from the combat theater through recovery evolved in previous conflicts? How is this similar or different to today's wounded traveling through healthcare systems from field camps in the Middle East, to German hospitals, to US military hospitals, to finally reintegration in their own communities? Alternatively researchers may ask how the progression of diagnosing pain and PTSD, as evidenced by changes and adaptations to the DSM, has affected previous and current research in both civilian and military populations (i.e. changes from DSM IV to V)?

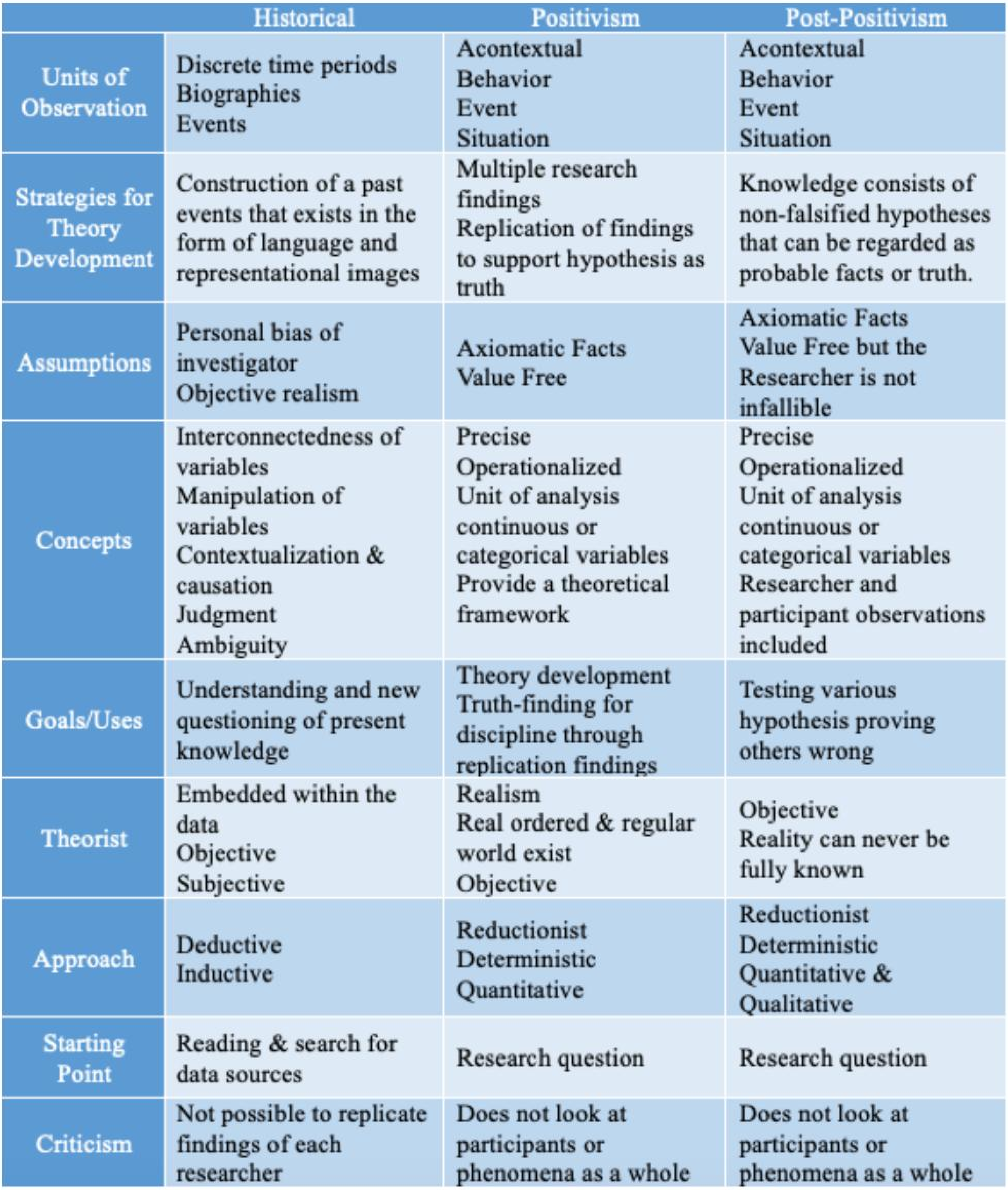
Combat Injury Science in the Empirical Perspective

A review of the combat injury literature demonstrates how both empirical lenses, the positivist and post-positivist, are commonly used when exploring the relationship between injury, PTSD, and pain. For example, Sandweiss et al. (2011) identified that within their Millennium Cohort Study of 183 injured military personnel, every 3 unit increase in the Injury Severity Score (ISS), measured on a scale of 0 – 75, translated into an increase in likelihood of developing post-deployment PTSD symptoms by 16.1% (OR, 1.16; 95% CI, 1.01-1.34, p<0.05). Here, the research approach is committed to demonstrating a causal effect in a specific population, the Millennium Cohort of combat injured military personnel, between severity of injury and development of PTSD using a validated and precise instrument, the injury severity score. The authors' validate their findings through statistical values, such as confidence intervals and p values to demonstrate truth in their findings. Other researchers similarly use a positivist approach to investigate the development of PTSD following combat injury. Holbrook et al. (2010) established the essential role of early pain management, typically using morphine within 1 hour or less from injury, in reducing the subsequent odds of developing PTSD following combat injury. Their study indicates that opiate use for pain relief, immediately following combat injury, has a protective factor in the development of being diagnosed with PTSD by a provider up to 2 years after injury (OR, 0.47; p<0.001). Here again we see a reliance on the reductionist approach and the use of causal and effect relationship to advance understanding of the phenomena. These two studies, each exploring different perspectives of the relationship between combat injury, pain and PTSD demonstrate the value of empirical findings in literature and the strides researchers make to remain unbiased through the use of controlled and manipulated variables and specific terminology. Future research questions to consider may include: How does an individual's pre-deployment trauma exposure influence the likelihood of being diagnosed with PTSD and does combat injury or pain severity have a confounding effect on this outcome? Does the administration of specific pain medications, such as ketamine or morphine, for pain following combat injuries protect against the development or symptom severity of PTSD?

Comparing Perspectives

The perspectives differ significantly, and could be viewed as opposite ends of the spectrum when investigating phenomena of interest. These differences can be found summarized in Figure 1. Unlike in historical research, where results are presented in a chronological narrative, the findings of empirical researchers are displayed as statistical models, figures, and tables illustrating the empirical results. The researchers typically refrain from the use of first person that is common in historical writing. The data comes from specific samples collected within a specific time frame and from a larger population. In historical research the samples are facts, dates, timelines, events policies, lone statistics drawn together to demonstrate objective truth that cannot always be recreated in the same manner as the original researcher. Instead the empirical researchers provide step-by-step methods on the rigor of their data collection and analysis to allow for future researchers to validate or question their results. The empirical researcher is dependent on cohort studies, randomized control trials as well as before and after intervention testing. The empirical researcher may place their own study within the context of present-day literature in a brief background point but historical approaches depend on creating this context to better understand phenomena.

Figure 1: A comparative table between approaches, Historical, Positivism, & Post-positivism



	Historical	Positivism	Post-Positivism
Units of Observation	Discrete time periods Biographies Events	Acontextual Behavior Event Situation	Acontextual Behavior Event Situation
Strategies for Theory Development	Construction of a past events that exists in the form of language and representational images	Multiple research findings Replication of findings to support hypothesis as truth	Knowledge consists of non-falsified hypotheses that can be regarded as probable facts or truth.
Assumptions	Personal bias of investigator Objective realism	Axiomatic Facts Value Free	Axiomatic Facts Value Free but the Researcher is not infallible
Concepts	Interconnectedness of variables Manipulation of variables Contextualization & causation Judgment Ambiguity	Precise Operationalized Unit of analysis continuous or categorical variables Provide a theoretical framework	Precise Operationalized Unit of analysis continuous or categorical variables Researcher and participant observations included
Goals/Uses	Understanding and new questioning of present knowledge	Theory development Truth-finding for discipline through replication findings	Testing various hypothesis proving others wrong
Theorist	Embedded within the data Objective Subjective	Realism Real ordered & regular world exist Objective	Objective Reality can never be fully known
Approach	Deductive Inductive	Reductionist Deterministic Quantitative	Reductionist Deterministic Quantitative & Qualitative
Starting Point	Reading & search for data sources	Research question	Research question
Criticism	Not possible to replicate findings of each researcher	Does not look at participants or phenomena as a whole	Does not look at participants or phenomena as a whole

Adapted from: Meleis, A. I. (1985). Theoretical nursing: development and progress. *The American Journal of Nursing*, 85(12), 1350. p. 496

Conclusion

The empirical lenses of positivism and post-positivism both offer opportunities to understand the phenomena of combat injuries and the relationship of PTSD and pain. Over a historical lens, the use of these perspectives has heightened the 'scientific' status of nursing and established it along other research disciplines. Use of these methods has contributed to the infusion of positivist ideology based on a natural science model into nursing research, alongside naturalist methods (Young, 2008). It is recognized that the sources of power and influence, including publication and funding sources have traditionally been proponents of the positivist and post-positivist perspectives that have had lasting impacts on the means by which nurse researchers and combat injury researchers seek to understand their phenomena of interest (Guba & Lincoln, 1994). It is essential that researchers continue to investigate their phenomena of interest using empirical approaches while recognizing the shortcomings of such approaches. The role of both quantitative and qualitative data research through empirical perspectives such as post-positivism can advance understanding of the combat injury phenomena in a way that traditional positivist approaches may not. The post-positivists lens, which recognizes a researcher's inability to identify the whole truth of the phenomena yet allows for rigor and replication of findings is a far superior perspective for combat injury researchers to inform best clinical practice for those who have been injured serving the nation.

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Clinical Judgment: A Concept Analysis

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Abstract

Clinical judgment is an important skill for nurses working in today's complex, rapidly changing healthcare environment. Sound clinical judgment has been shown to improve health outcomes for patients in many different settings. Nurse educators are challenged to develop novel teaching-learning strategies to teach and evaluate this critical clinical skill. The term clinical judgment is often used interchangeably with other terms such as critical thinking, clinical reasoning and clinical decision-making. A concept analysis using Walker and Avant's (2011) eight-step method was conducted to clarify the meaning of this important term.

Background

Clinical judgment is an essential skill for nurses. Nurses use clinical judgment in all aspects of healthcare, often in times of uncertainty. Decreased length of stay, higher patient acuity, the aging population, and new complex technologies make it pertinent for nurses to make clinical judgments in a short period of time (Benner, Tanner & Chesla, 2009; Simmons, 2010). Patients with complex co-morbidities are being cared for in many different areas: acute care settings, long-term care facilities, and in the home (Institute of Medicine [IOM], 2011). Nurse educators are poised to find new methods to teach clinical judgment to nursing students. Many terms are used synonymously with clinical judgment, including critical thinking, clinical reasoning, and clinical decision-making. The purpose of this concept analysis is to gain a deeper understanding of the concept of clinical judgment to assist nurse educators in teaching this important skill.

Method

Walker and Avant's eight-step method was used to provide meaning to the term clinical judgment within the context of nursing. The steps included in the method are: 1) select a concept; 2) determine the aims or purposes of analysis; 3) identify all uses of the concept; 4) determine the defining attributes; 5) identify a model case; 6) identify borderline, related, contrary, invented and illegitimate cases; 7) identify antecedents and consequences; 8) define empirical referents (Walker & Avant, 2011). This concept analysis included a model, borderline and contrary case as Walker and Avant specified that not all cases are required if the cases used complete the analysis.

Aim of Concept Analysis

Many terms are used synonymously to describe clinical judgment and are used interchangeably in the nursing literature; these include critical thinking; clinical reasoning; and clinical decision-making.

Critical thinking is defined as a "broad term that includes reasoning both inside and outside of the clinical environment. It is purposeful, informed and outcome-focused thinking" (Alfaro-LeFevre, 2017). Clinical reasoning is "defined as a complex cognitive process that uses formal and informal thinking strategies to gather and analyze patient information, evaluate the significance of this information and weigh alternative actions" (Simmons, 2010). Clinical decision-making is "a contextual, continuous, and evolving process, where data are gathered, interpreted, and evaluated in order to select an evidence-based choice of action" (Tiffen, Corbridge & Slimmer, 2014). A concept analysis will help to define clinical judgment and differentiate it from similar terms.

Developing clinical judgment is one of the most important and challenging aspects of becoming a nurse. It can generate anxiety as the patient's life and health depend on it, and there is risk involved (Alfaro-LeFevre, 2017). Furthermore, it is frequently performed in times of uncertainty (Benner et al., 2009; Simmons, 2010). Clinical judgment often establishes how quickly nurses detect a life-threatening complication. Effective clinical judgment can prevent clinical deterioration and increase the probability of a positive health outcome. It may impact the patient's length of stay in a healthcare facility and influence how adept a patient can care for themselves once discharged (Etheridge, 2007; Minick & Harvey, 2003; Ozekcin, Tuite, Willner & Hravnak, 2015). Nurses use sound clinical judgment to provide patient care on the health continuum, ranging from assisting them to achieve wellness to dying with peace and dignity (Phaneuf, 2008).

Many novice nurses experience difficulty in forming clinical judgments (del Bueno, 2005; Fenske et al, 2013; Theisen & Sandau, 2013). Nurse educators are challenged to develop new methods to foster this important skill. A greater understanding of clinical judgment will improve nursing practice and assist nurse educators to teach this important clinical skill.

Uses of the Concept

Walker and Avant suggest a concept analysis should begin with review of various uses of the concept. Clinical judgment is defined as "the application of information based on actual observation of a patient combined with subjective and objective data that lead to a conclusion" (Mosby's Medical Dictionary, 2009). It is also described as "a cognitive or thinking process used for analyzing data, deriving diagnoses, deciding on interventions, and evaluating care" (Medical Dictionary for the Health Professions and Nursing, 2012). Lastly, clinical judgment is defined as "the process by which the nurse decides on data to be collected about a client, makes an interpretation of the data, arrives at a nursing diagnosis, and identifies appropriate nursing actions; this involves problem solving, decision-making, and critical thinking" (Miller-Keane Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health, 2003). These definitions are similar in that they define clinical judgment as a process that leads to a conclusion.

Use of the Concept in Nursing

Clinical judgment is a critical process inherent to the role of the nurse providing quality care to patients. As early as 1860, Nightingale recognized that observations and their interpretation were the focus of nursing practice (Nightingale, 1992). Clinical judgment is described in nursing as a process leading to a conclusion as illustrated by the following definitions. Clinical judgment "refers to the result (outcome) of critical thinking and clinical reasoning, the conclusion, decision or opinion you make after thinking about the issues" (Alfaro-LeFevre, 2017). Phaneuf (2008) defines clinical judgement as "the conclusion or enlightened opinion at which a nurse arrives following a process of observation, reflection and analysis of observable or available information or data." Tanner (2006) takes the definition a step further by stating that the nurse interprets the situation, comes to a conclusion and provides an intervention to meet the patient's needs.

Clinical judgment has been studied within the framework of two paradigms: the information-processing model which emphasizes mechanical and cognitive strategies (Tanner, Padrick, Westfall & Purzier, 1987) and the intuitive reasoning model (Benner, Tanner & Chesla, 2009) which claims that clinical judgment is not only a logically deductive process, but one that also involves personal experience and professional ethical considerations.

Benner, Tanner and Chesla (2009) indicated that there are five aspects of expert clinical judgment which go beyond the pure information-processing model. First, expert nurses have a fundamental orientation toward what is good and right in their work place. Second, expert nurses recognize a clinical situation because of their extensive experience, gained from their years of practice in their specific clinical setting. Third, expert clinical judgment comes from the nurses' ability to understand the context of the situation and their own emotional responses. The fourth aspect is intuition, recognizing a pattern they have seen before. The last aspect is the role of narrative in understanding the patients' story or concerns to provide them the best care possible. These five aspects are crucial for making expert clinical judgments, however they are not usually mentioned in the nursing literature (Benner et al., 2009).

Theoretical uses

Tanner (2006) developed a research-based model of clinical judgment in nursing derived from a synthesis of a comprehensive body of literature focused on clinical judgment. It describes the clinical judgment of experienced nurses, i.e., "thinking like a nurse" (Tanner, 2006) and can be used to assist nursing faculty to help students develop clinical judgment skills. The model can be used in a variety of clinical situations, especially when a patient's condition is rapidly changing. In these instances, the nurse must make a clinical judgment while an intervention is taking place to assess its' effectiveness, making any necessary changes immediately (Tanner, 2006).

The four major concepts of Tanner's model are: noticing; interpreting; responding; and reflecting (Tanner, 2006). The model proposes that the nurse's noticing of a dangerous clinical situation will trigger one or more reasoning patterns that will assist the nurse to interpret the situation and determine an appropriate intervention. The model not only focuses on cognitive and metacognitive processes of narrative thinking, intuition, and analytic reasoning but also on psychomotor processes of actions and affective processes of the caregiver (Victor-Chmil, 2013).

Characteristics of Clinical Judgment

Walker and Avant (2011) assert that defining the characteristics of the concept is the most crucial part of concept analysis. A review of the literature yielded the characteristics of clinical judgment; they are framed by the following domains: cognitive, psychomotor and affective. Characteristics within the cognitive domain include:

- Recognizing deviations from expected patterns: noticing that something is different, a situation exists (Tanner, 2006)
- Making sense of data by utilizing reasoning patterns (analytic, intuitive, narrative thinking) (Benner et al., 2009; Tanner, 2006)
- Monitoring patient progress: reflecting on the situation while it is taking place (Tanner, 2006)
- Reflecting on the action after the fact (Tanner, 2006)

Characteristics within the psychomotor domain include:

- Focused observation: using knowledge and experience to focus assessment on what is critical (Benner et al., 2009; Tanner, 2006)
- Seeking information: interpreting the situation, obtaining more information as needed (Tanner, 2006)
- Interventions specific for the individual patient: planning and implementing interventions specifically needed (Tanner, 2006)
- Adjusting treatment per patient response (Tanner, 2006)

Characteristics within the affective domain include:

- Recognizing deviations from expected patterns: knowing the patient and recognizing that something is different (Benner et al., 2009; Tanner, 2006)

Antecedents

Antecedents are events that must occur prior to clinical judgment (Walker & Avant, 2011) and they include:

- Critical thinking ability: ability to critically think about a situation (Alfaro-LeFevre, 2017)
- Clinical reasoning ability: ability to clinically reason through a problem (Simmons, 2010; Tanner, 2006)
- Context of uncertainty: situation in which uncertainty exists (Benner et al., 2009; Simmons, 2010)
- Practical experience: working with many patients, knowing their patterns (Benner et al., 2009; Tanner, 2006)
- Theoretical knowledge: knowledge of nursing (Benner et al., 2009; Tanner, 2006)
- Intuitive knowledge: knowing that something is not right, the is gained from previous experience with similar situations (Benner et al., 2009; Tanner, 2006)
- Ethical perspective: knowing what is right or good (Benner et al., 2009)
- Relationship with the patient: knowing the patient and their patterns of response (Benner et al., 2009; Tanner, 2006)
- Self-reflection: the ability to reflect on a clinical situation (Benner et al., 2009; Tanner, 2006)

- Ability to pay attention: being able to notice that something is different (Tanner, 2006)
- Identify relevant information: being able to discern what information is important (Benner et al., 2009; Tanner, 2006)

Consequences

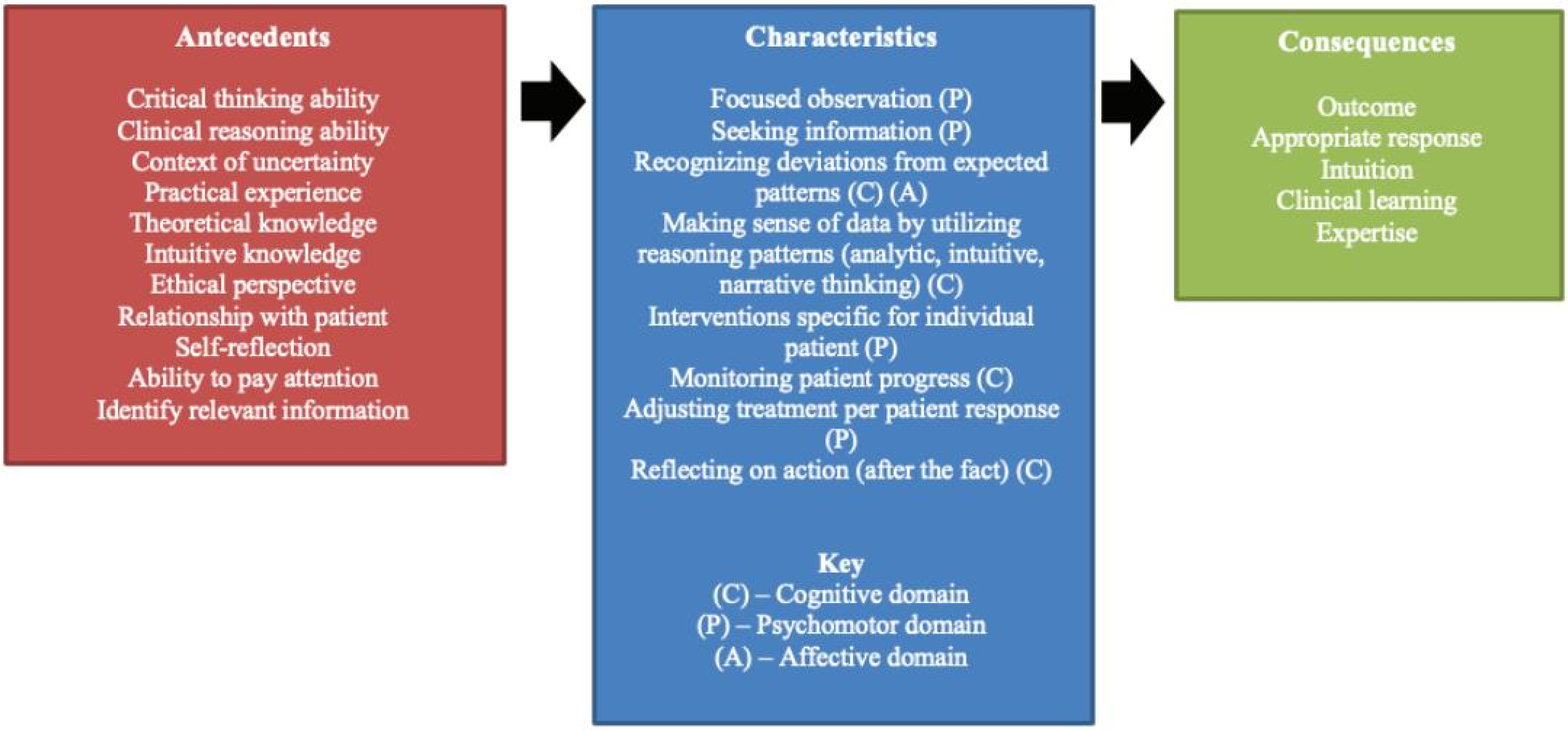
Consequences are events or incidents that occur as a result of clinical judgment (Walker & Avant, 2011)

and include:w• Outcome: end result of the clinical judgment

- Appropriate response: making the right decision based on the clinical judgment
- Intuition: a memory of a situation is formed and that memory comes to mind the next time the nurse experiences this type of situation (Tanner, 2006)
- Clinical learning: clinical knowledge derived from reflecting on the clinical situation (Tanner, 2006)
- Expertise: experience developed from reflecting on the clinical situation (Tanner, 2006)

Consequences of clinical judgment may become antecedents to the next judgment, making it cyclical and recursive (Simmons, 2010). The characteristics, antecedents and consequences of the concept of clinical judgment are illustrated in Figure 1.

Figure 1. Visual representation of antecedents, characteristics and consequences of clinical judgment.



Model Case

The model case demonstrates all the characteristics of the concept of clinical judgment (Walker & Avant, 2011) and the characteristics have been underlined. Mary, a registered nurse is sitting at the nurses' station on the Same Day Surgery Unit busily charting when the transporter hands her a patient chart. "Your new admission is in Room One", he states. Mary looks at the chart; her patient is a 77-year-old female admitted for an elective hip replacement. Mary has cared for many of patients with this diagnosis in her career and she knows what to expect when she meets the patient. Upon entering the room, Mary sees that the patient is fully dressed and laying on the floor beside the bed. Her daughter is extremely upset having witnessed her mother fall upon sitting on the bed. Mary immediately assesses the patient while reassuring the patient's daughter that she is going to assess for any injuries. Mary asks the patient to explain what happened. The patient states she lost her footing while sitting down and slid to the floor. Mary further asks: "Did you hit your head? Did you lose consciousness? Are you having any pain anywhere?" Mary assesses the patient for any obvious injuries and assesses the patient's vital signs. The patient asks if she can get up and Mary notifies her that she must stay on the floor, in case she may have injured her neck during the fall. Mary tells the patient that she is going to notify the health care provider of her injury and calls the provider from the patient's room. The provider instructs Mary not to move the patient, she is on her way to do a complete assessment. Mary explains the provider's instructions to the patient and her daughter. The patient states, "I am really okay, do I really have to stay on the floor? It is cold and hard." Mary places a blanket over the patient and reiterates why it is necessary to stay on the floor. After the patient is settled in bed, Mary explains to her nurse manager what has transpired. She recommends that nurses should be present when newly admitted patients transfer from the wheelchair to the bed to avoid this from happening in the future.

In the model case, Mary displayed the following cognitive characteristics of clinical judgment: making sense of the data by utilizing reasoning patterns (analytic, intuitive, narrative thinking); monitoring the patient's progress; and reflecting on the action after the fact. She also displayed characteristics from within the psychomotor domain including: a focused observation; seeking information; interventions specific for the individual patient; and adjusting treatment per patient response. Lastly, she displayed a characteristic from the affective domain, recognizing a deviation from an expected pattern. The consequences of this clinical judgment were that Mary made an appropriate response and further developed her clinical learning and expertise.

Borderline Case

The Borderline Case contains most of the characteristics of the concept of clinical judgment but not all (Walker & Avant, 2011). Mary is sitting at the nurses' station on the Same Day Surgery Unit busily charting when the transporter hands her a patient chart. "Your new admission is in Room One," he states. Mary looks at the chart; her patient is a 77-year-old female admitted for an elective hip replacement. Mary has cared for many patients with this diagnosis in her career and she knows what to expect when she meets the patient. Upon entering the room, Mary sees that the patient is fully dressed and laying on the floor beside the bed. Her daughter is extremely upset having witnessed her mother fall upon sitting on the bed. Mary immediately assesses the patient while reassuring the patient's daughter that she is going to assess for any injuries. Mary asks the patient to explain what happened. The patient states she lost her footing while sitting down and slid to the floor. Mary asks: "Did you hit your head? Are you having any pain anywhere?" Mary assesses the patient for any obvious injuries. The patient asks if she can get up and Mary notifies her that she must stay on the floor, in case she may have injured her neck during the fall. Mary tells the patient that she is going to notify the health care provider of the injury and calls the provider from the patient's room. The provider asks Mary for the patient's vital signs. Mary responds that she has not taken them. The provider instructs Mary not to move the patient, and take a set of vital signs. She is on her way to do a complete assessment. Mary explains the provider's instructions to the patient and her daughter. The patient states, "I am really okay, do I really have to stay on the floor? It is cold and hard." Mary places a blanket over the patient and reiterates why it is necessary to stay on the floor. After the patient is settled in bed, Mary explains to her nurse manager what has transpired. She tells the nurse manager that the experience was stressful and is glad her shift is over soon. The nurse manager asks Mary to complete an incident report on the situation.

In the borderline case, Mary displayed some of the cognitive characteristics of clinical judgment: making sense of the data by utilizing reasoning patterns (analytic, intuitive, narrative thinking); and monitoring the patient's progress. She also displayed some characteristics from within the psychomotor domain including: a focused observation; seeking information; interventions specific for the individual patient; and adjusting treatment per patient response. Lastly, she displayed a characteristic from the affective domain, recognizing a deviation from an expected pattern. In this case, Mary does not obtain all the necessary data to interpret the situation and she does not reflect on the action completely to improve her clinical learning for future occurrences.

Contrary Case

A contrary case does not identify any of the characteristics of the concept of clinical judgment (Walker & Avant, 2011). Mary is sitting at the nurses' station on the Same Day Surgery Unit busily charting when the transporter hands her a patient chart. "Your new admission is in Room One", he states. Mary looks at the chart; her patient is a 77-year-old female admitted for an elective hip replacement. Just then, the new patient's daughter runs out of the patient room screaming, "my mother has fallen, I think she broke her hip". Two other nurses run into the patient's room to assess the situation. Mary waits at the nursing station without going in to help the others. In this case, Mary has not displayed any of the characteristics of clinical judgment.

Empirical Referents

The concept of clinical judgment can be empirically tested in different realms such as the clinical environment and simulation laboratory (del Bueno, 2005; Lasater, 2011). Nursing clinical judgment can be measured by direct observation, simulation, formulating thought questions, and reflective journaling with the use of the Lasater Clinical Judgment Rubric (LCJR) (Lasater, 2011). The rubric provides a means to measure the cognitive, psychomotor and affective aspects of clinical judgment (Victor-Chmil, 2013). Several studies have provided psychometric validation and reliability data for the instrument (Adamson, Gubrud, Sideras, & Lasater, 2012; Mariani et al., 2013).

Lasater's Clinical Judgment Rubric (2007), based on Tanner's Model of Clinical Judgment (2006) was developed to test students' performances in a simulation designed to assess clinical judgment skills. The rubric measures the major concepts of Tanner's model: noticing; interpreting; responding; and reflecting. For each of the four phases, Lasater developed two or three descriptive statements later termed dimensions to explain the clinical judgment process within each phase. Lastly, she categorized nurses' demonstrated behavior as beginning, developing, accomplished or exemplary levels of clinical judgment (Lasater, 2007). The LCJR provides a framework for both self-assessment and formal evaluation of clinical judgment development.

Definition of Clinical Judgment

Based on this concept analysis, clinical judgment is defined as the use of cognitive, psychomotor and affective skills to form an interpretation or conclusion regarding the patient's health status, provide an intervention if necessary, and modify the intervention based on the patient's response.

Conclusion

Clinical judgment is an essential skill for competent nursing practice. Nurses use cognitive, psychomotor and affective skills to form clinical judgments in times of adversity secondary to the complex condition of their patients in the fast-paced world of modern healthcare. Sound clinical judgment has been shown to improve health outcomes for many patients. Many terms are used synonymously with clinical judgment, which can prove to be confusing for members of the healthcare team. Gaining a deeper understanding of clinical judgment through concept analysis will assist nurse educators in teaching and evaluating this important clinical skill.

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The Health Promotion Model: A Brief Critical Analysis

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Abstract

Despite increased healthcare spending and technological advances, poor health outcomes persist in the United States. The poor health of Americans is fueling a renewed interest in national health promotion efforts, especially theory-based research that focuses on optimizing human health across diverse populations. Nola J. Pender's health promotion model (HPM) is an example of a conceptual framework that can be used to guide studies related to the health promotion needs of individuals or population groups. The purpose of this paper is to provide a brief critical analysis of the HPM to demonstrate its utility as a framework for guiding research that focuses on health enhancement to improve nationwide health behaviors and outcomes.

Introduction

Despite increased healthcare spending and technological advances, poor health outcomes persist in the United States (Squires & Anderson, 2015). At present, the nation spends approximately 18% of the gross domestic product on health care; yet, life expectancy rates are declining, and chronic disease is increasing (Dzau et al., 2017). The poor health of Americans is fueling a renewed interest in national health promotion efforts, which include supporting theory-based research that focuses on optimizing human health across diverse populations. Nola J. Pender's health promotion model (HPM) is an example of a conceptual framework that can be used to guide studies related to the health promotion needs of individuals or population groups (Pender, 1996). The purpose of this paper is to provide a brief critical analysis of the HPM to demonstrate its utility as a framework for guiding research that focuses on health enhancement to improve nationwide health behaviors and outcomes. The elements discussed in this analysis are based on criteria for evaluating theories as described by Meleis (2012).

Background

Nurse researcher Nola Pender introduced the HPM into the literature in the book, *Health Promotion in Nursing Practic*e (Pender, 1982). Pender conducted research that identified that people utilize different motivations to attain healthy lifestyles. These motivations consist of either "health protection or prevention with avoidance of illness or injury" or "health promotion with the desire for exuberant wellbeing" (Pender, et al., 1990). Pender identified that people who are motivated to change behaviors based on health protection are typically influenced by the fear or threat of disease; whereas, people who are motivated by health promotion are typically influenced by personal or environmental factors that may increase one's health and well-being (Pender, Murdaugh, & Parsons, 2015). Although Pender determined that engagement in health behaviors and lifestyles can be influenced by different sources of motivation, researchers often relied on prevention-oriented models to guide health behavior research throughout the 20th century. As a result, Pender constructed the HPM to provide researchers with a framework that focused on examining health behavior motivation in the context of wellness and health enhancement rather than in the context of health protection (Frank-Stromborg, et al., 1990).

The HPM uses nursing and social psychology perspectives to guide exploration of the "complex biopsychosocial processes that motivate individuals to engage in behaviors" (Pender et al., 2015). The HPM integrates Albert Bandura's social cognitive theory, which suggests that behavior change is influenced by interactions between the person, the behavior, and the environment (Pender, et al., 1988). The HPM also integrates Norman Feather's expectancy-value theory, which proposes that individuals engage in activities perceived as being valuable and possible to complete (Pender et al., 2015). Originally, the HPM consisted of seven cognitive/perceptual factors, which Pender proposed as the basis for health promotion interventions. The model also consisted of five modifying factors, which were attributed to influencing the cognitive/perceptual factors (Pender et al., 1990). Based on research findings, Pender revised the HPM in 1996 to include only the elements that appeared to be most salient to the optimization of human health. As a result, the HPM now consists of three major concepts and 10 sub-concepts or factors that are known to play a role in influencing health behaviors (Pender, 1996). The revised HPM is the focus of this brief critical analysis, which will begin with a description of the model's assumptions, concepts, and propositions.

Assumptions

The HPM contains seven assumptions which arise from both the nursing and social psychology perspectives and they detail the interactions between the individual and their environment (Pender, Murdaugh, & Parsons, 2002). The underlying tenants of the model are that "health promotion is applicable to populations regardless of their health status" (Frank-Stromborg et al., 1990, p. 1160) and that health-promoting behaviors (HPBs) are rooted in a person's dissatisfaction with their health (Pender et al., 2002). The assumptions also suggest that individuals value and seek positive health and are capable of improving their lifestyle and their quality of life (Pender, 2016). The following are the assumptions of the HPM:

1. Persons seek to create conditions of living through which they can express their unique human health potential.
2. Persons have the capacity for reflective self-awareness, including assessment of their own competencies.
3. Persons value growth in directions viewed as positive and attempt to achieve a personally acceptable balance between change and stability.
4. Individuals seek to actively regulate their own behavior.
5. Individuals in all their biopsychosocial complexity interact with the environment, progressively transforming the environment and being transformed over time.
6. Health professionals constitute a part of the interpersonal environment, which exerts influence on persons throughout their life span.
7. Self-initiated reconfiguration of person-environment interactive patterns is essential to behavior change (Pender et al., 2002).

Concepts

There are three major concepts in the HPM (Pender et al., 2015): individual characteristics and experiences, behavior-specific cognitions and affect, and behavioral outcome. Pender et al. (2015) defines individual characteristics and experiences as elements that may affect future health actions. Examples may include engagement in prior related behaviors or various personal factors, such as age, gender, income, or marital status that may influence engagement in HPBs. Behavior-specific cognitions and affect are modifiable motivating factors for developing and maintaining health-promoting lifestyles (Pender et al., 2015). Commonly, these factors are the focus of health promotion research (Srof & Velsor-Friedrich, 2006) and include, for example, exploring the perceived benefits or barriers to engaging in HPBs and identifying the interpersonal or situational factors that may play a role in achieving a healthy lifestyle (Pender et al., 2015). Lastly, behavioral outcomes are described as HPBs or the actions directed toward positive health, well-being, personal fulfillment, and productive living. Examples of HPBs include managing stress or obtaining adequate physical activity, nutrition, and rest.

Each major concept also contains several sub-concepts, which describe various factors that can influence health behaviors. A diagram of the concepts in the HPM is provided in Figure I. Prior related behavior and personal factors are two sub-concepts that fall under the major concept of individual characteristics and experiences. Prior related behavior focuses on habit formation and the need to practice behaviors, so they can be executed automatically. Repeating activities increases self-efficacy, or one's belief that they can meet a goal, and can lead to short-term benefits that motivate individuals to remain engaged in forming healthy habits. Prior behavior shapes one's perspective of a HPB and can be one factor that can influence the initiation and maintenance of particular activities (Pender et al., 2015).

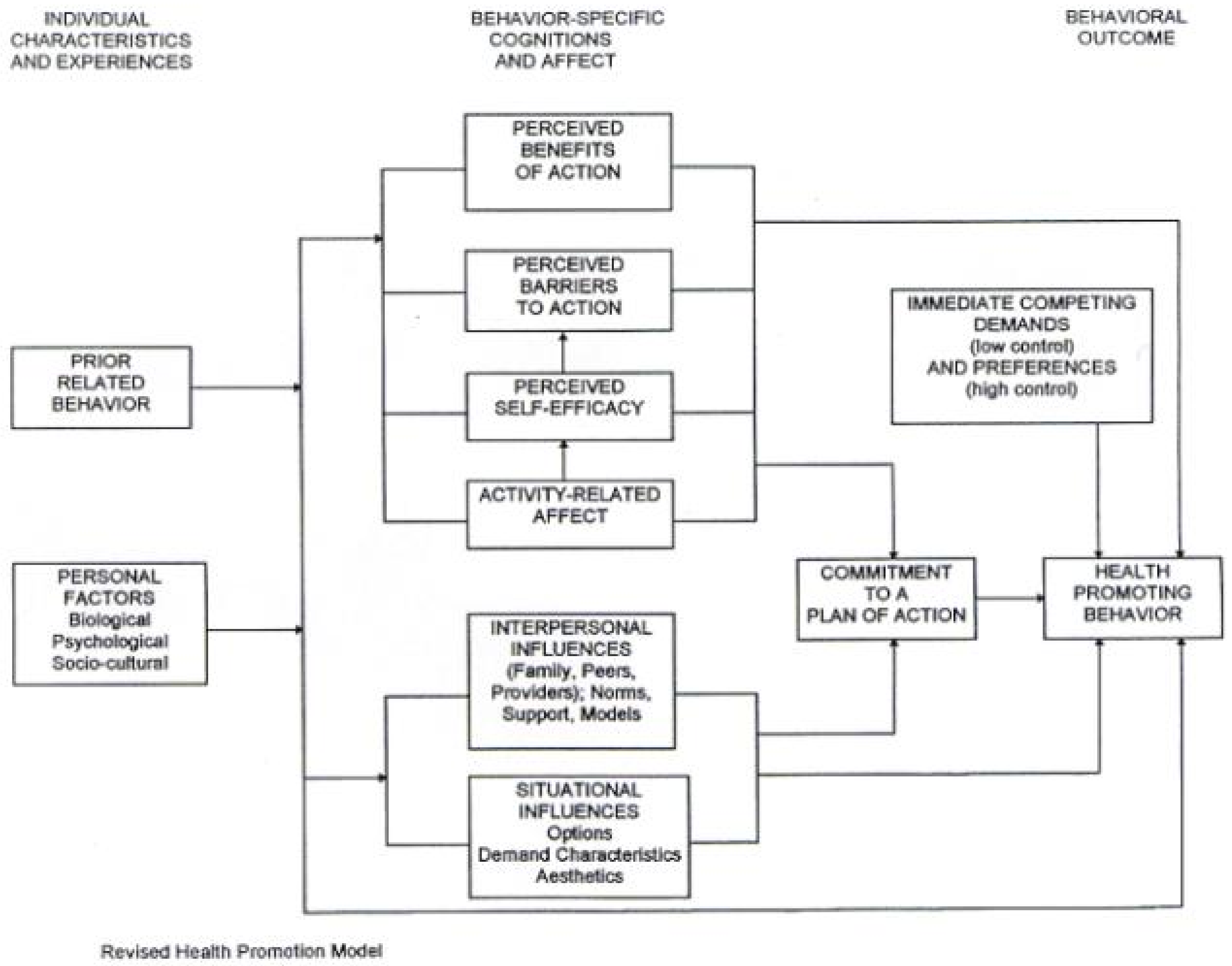

Figure I. Pender's (1996) Health Promotion Model. Retrieved from Pender's website located on the University of Michigan website August 22, 2017: https://deepblue.lib.umich.edu/handle/2027.42/85351

Personal factors are described as characteristics of an individual that can influence health and one's engagement in HPBs. Personal factors can be modifiable or non-modifiable and the HPM considers the influence of biological, sociocultural, and psychological personal factors as being important domains to examine in health behavior research (Pender et al., 2015).

Several sub-concepts comprise the behavior-specific cognitions and affect concept and include: perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, interpersonal influences, situational influences, commitment to a plan of action, and immediate competing demands and preferences. A summary of these sub-concepts is provided; however, their complete definitions are available in the seventh edition of the book, *Health Promotion in Nursing Practice* (Pender et al., 2015). As depicted in the HPM, each of these sub-concepts influence the initiation and maintenance of HPBs either directly or indirectly.

Perceived benefits of action are associated with positive consequences of a behavior and perceived barriers to action typically consist of one's perception that behaviors cannot be accomplished due to certain barriers, which may include time-constraints, expense, difficulty, or unavailability. Perceived self-efficacy refers to a person's perceived ability to participate in specific behaviors or to attain a goal. Activity-related affect describes both the positive and negative feeling states one experiences with participation in an activity. Pender et al. (2015) proposes that activities associated with more positive affects like joy or elation will be maintained longer than those associated with anxiety or fear. Interpersonal influences determine an individual's inclination to engage in HPBs. Examples of such influences may be family, peers, and health care providers. Situational influences can facilitate or impede behavior and they relate to one's perception about the aesthetics, safety, or demand characteristics of an environment where an activity may occur. Pender and colleagues (2015) propose that environments that are safe, interesting, and compatible with the person are more likely to facilitate attainment of HPBs.

Commitment to a plan of action contends that an activity will occur. Individuals may be committed to a plan; however, if competing demands cannot be avoided or competing preferences cannot be resisted, then a person may fail to follow through on a plan. An individual typically has low control over competing demands, like family and work, since there is an obligation to fulfill these responsibilities. Conversely, individuals typically have high control over competing preferences. Competing preferences describes one's ability to self-regulate and resist "giving in" (Pender et al., 2015). Examples of competing preferences may include snacking on candy instead of fruit or shopping instead of exercising.

Health-promoting behavior is the final sub-concept in the HPM and it falls under the behavioral outcome concept. Pender (1982) defines HPBs as key actions that help individuals to attain health and enhance functional ability and well-being. Health-promoting behaviors are often the focus in health-related research as they are important components for achieving healthy lifestyles and for reducing risk factors associated with the development of chronic diseases (Pender et al., 2015).

Propositions

Pender's 14 relational propositions that correspond to the HPM concepts include engagement-in and commitment-to HPBs. These propositions help describe relationships between the conceptual components of the model and provide a foundation for constructing health-related research that seeks to examine how various factors can influence health behaviors (Masters, 2015). The following are the propositions of the HPM:

1. Prior behavior and inherited and acquired characteristics influence health beliefs, affect, and enactment of health-promoting behavior.
2. Persons commit to engaging in behaviors from which they anticipate deriving personally valued benefits.
3. Perceived barriers can constrain commitment to action, mediators of behavior, and actual behavior.
4. Perceived competence or self-efficacy to execute a given behavior increases the likelihood of commitment to action and actual performance of behavior.
5. Greater perceived self-efficacy results in fewer perceived barriers to a specific health behavior.
6. Positive affect toward a behavior results in greater perceived self-efficacy, which can, in turn, result in increased positive affect.
7. When positive emotions or affect is associated with behavior, the probability of commitment and action are increased.
8. Persons are more likely to commit to and engage in health-promoting behaviors when significant others model the behavior, expect the behavior to occur, and provide assistance and support to enable the behavior.
9. Family, peers, and healthcare providers are important sources of interpersonal influence that can either increase or decrease commitment to and engagement in health-promoting behavior.
10. Situational influences in the external environment can either increase or decrease commitment to or participation in health-promoting behavior.
11. The greater the commitment to a specific plan of action, the more likely that health-promoting behaviors will be maintained over time.
12. Commitment to a plan of action is less likely to result in the desired behavior when competing demands over which persons have little control require immediate attention.
13. Commitment to a plan of action is less likely to result in the desired behavior when other actions are more attractive and preferred over the target behavior.
14. Persons can modify cognitions, affect, and the interpersonal and physical environments to create incentives for health actions (Pender et al., 2002).

Theory Analysis

The inclusion of explicit assumptions assists in the interpretation of the HPM goals. The HPM appears to be phenomenologically oriented as the achievement of HPBs is based on the experiences and perceptions or consciousness of the individual (Meleis, 2012). While the assumptions reflect Western values, researchers have utilized the HPM to predict HPBs in other parts of the world, such as Taiwan and Iran (Wu & Pender, 2005; Mohamadian et al., 2011). Additionally, the assumptions include nursing's major concepts: person, environment, health, and nursing. Nursing process is another important concept in the domain of nursing (Meleis, 2012). While this concept is not explicitly mentioned, nurses can use the HPM to create care plans that can facilitate health promotion throughout the lifespan (Masters, 2015).

While the HPM model focuses on individual HPBs, the concepts are generalizable and have been studied in various populations and settings (Wu & Pender, 2005; Mohamadian et al., 2011). Additionally, the model depicts a holistic view of the individual or population, by incorporating personal factors including biological, sociocultural, and psychological. This holistic view aligns with the nursing ethos, making it appropriate for use in nursing studies or health-related research that seeks to examine the health promotion needs of various populations. However, a weakness of the model is it's lack of examination of environmental, political, or economic contexts within which many populations approach health decisions.

Pender's 14 relational propositions help to explain and predict relationships among the concepts and the model includes arrows that describe "the hypothesized direction of causal influences" (see Figure I; Pender et al., 1990). A limitation of the model is that research studies indicate the strongest predictor of HPB is self-efficacy (Jackson, Tucker, & Herman, 2007; Martinelli, 1999; Mohamadian et al., 2011; Peker & Bermek, 2011; Srof & Velsor-Friedrich, 2006; Taymoori, Lubans, & Berry, 2010); yet, the propositions only link this concept to barriers, affect, and commitment to action. Srof and Velsor-Friedrich (2006) found that self-efficacy may also come from interpersonal and situational influences and they suggest future research should clarify these relationships as this research could expand the model and strengthen the role of nursing in promoting self-efficacy and HPBs (Srof & Velsor-Friedrich, 2006). Despite this limitation, Pender's propositions clearly and systematically depict the multiple influences on health-promotion behaviors (Pender et al., 1990).

The HPM's conceptual definitions provide clarity and are consistent throughout the model. Tautology or repetition of ideas (Meleis, 2012) is not present; however, teleology may be minimally inferred as the model is used to explain and predict causality among the various concepts. Since the main purpose of the HPM is to promote and maintain optimal health, this may be viewed as a teleological theory (Meleis, 2012). Future research should test the internal consistency and reliability of any instruments based on the HPM.

The HPM appears complex since it contains multiple concepts that create several relationships. However, the propositions clarify these relationships, enhance understanding of the model, and explain the complexities of human behavior (Sakraida, 2002). Further testing of the HPM is needed to achieve parsimony, which will help eliminate less significant concepts and introduce new ones that best explain and predict health-promoting lifestyles (Meleis, 2012).

Pender developed and organized a logical visual representation of the HPM (Figure I). The three major concepts are found at the top of the model. Boxed sub-concepts extend vertically from their respective main concepts and are connected with directional arrows. The arrows depict the relationships within the concepts; however, the type of relationship, such as direct or indirect, is not displayed. As a result, the diagram does not fully enhance understanding of how the individual characteristics directly relate to engaging in HPBs and how the behavior-specific or modifiable factors may directly or indirectly influence HPBs. Additional text or different kinds of arrows may improve understanding of the relationships in the absence of a written description about the model.

The HPM possesses a wide circle of contagiousness. It originated in North America where Pender et al. (1988) tested the model's ability to explain HPB in four populations: working adults, older adults, ambulatory cancer patients, and cardiac rehabilitation clients. It has also been use in practice, research, and education, and in different geographical locations such as Asia, Europe, the Middle East, and the Americas. Furthermore, Pender's book, *Health Promotion in Nursing Practice* (Pender et al., 2015), is in its seventh edition and is available in English, Japanese, and Korean (Sakraida, 2002). Since attaining positive health outcomes appears to be a universal goal among diverse populations, the HPM's framework has cross-cultural utility (Meleis, 2012). For example, it has been used to study physical activity in Taiwanese youth (Wu & Pender, 2005), health promotion behaviors of Latinos (Sutherland, Weiler, Bond, Simonson, & Reis, 2012), and physical activity of Iranian adolescents (Taymoori et al., 2010).

Although researchers often use the HPM as a framework in theory-based research, the literature also reveals the HPM has endured theory testing and sufficiently demonstrates empirical adequacy due to its relational propositions. Pender et al. (1988) initially tested the HPM on working adults, older adults, cardiac rehabilitation patients, and ambulatory cancer patients. The results of these studies supported the use of the HPM to explore HPBs in these populations. Researchers continue to test the HPM on diverse populations. For instance, researchers from one study found that the HPM predicted 78% of the HPBs of farmers (McCullagh et al.; 2002), while other researchers determined the model explained 62.1% of the variance in HPBs of dental students (Peker & Bermek, 2011).

Conclusion

The HPM appears to be a useful framework for guiding health-related research that seeks to explore and predict individual or group health behaviors. It helps portray the multiple factors that influence individuals to initiate and maintain healthy lifestyles. Theory-based research that focuses on the engagement in HPBs and attainment of healthy lifestyles will help identify health risk behaviors and may lead to the development of interventions to improve population health. The HPM is one framework that can guide this research and contribute not only to strengthening individual health promotion strategies, but also to improving nationwide health behaviors and health outcomes.

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