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UNIVERSITY OF SAN DIEGO  
Hahn School of Nursing and Health Science  
DOCTOR OF PHILOSOPHY IN NURSING

INTERVENTIONAL RADIOLOGY PROCEDURES WITHOUT SEDATION:  
THE NURSE EXPERIENCE

by

Catherine B. De Leon

A dissertation presented to the  
FACULTY OF THE HAHN SCHOOL OF NURSING AND HEALTH SCIENCE  
UNIVERSITY OF SAN DIEGO

In partial fulfillment of the  
requirements for the degree  
DOCTOR OF PHILOSOPHY IN NURSING

April 2022

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## Abstract

**Background:** Many IR procedures offer a less invasive and economical alternative to some open or laparoscopic surgeries. Patients undergoing a procedure without moderate sedation are awake, alert, with heightened sensory perceptions, and vulnerable to their surroundings. There is a gap in the current body of literature relating to the IR nurse's experience of caring for patients during procedures without the use of moderate sedation.

**Purpose/Aims:** The purpose of this study was to explore the lived experience of Interventional Radiology (IR) nurses caring for conscious patients undergoing a procedure without the use of sedation. This phenomenological study aimed to describe the experience of IR nurses during the peri-procedural process in cases performed without moderate sedation and gain an understanding of perceived barriers to the nurse's role and responsibilities in caring for conscious patients during an IR procedure.

**Methods:** This study was underpinned by a hermeneutic phenomenological approach using Heidegger's philosophy and informed by Swanson's Theory of Caring. A purposive sample of 10 participants were interviewed about their experience in caring for patients undergoing IR procedures without sedation. Transcripts were reviewed and analyzed using the iterative and reflective process within the hermeneutic circle.

**Findings:** Five themes emerged from the data: (a) undertaking a multi-faceted role (b) awareness, (c) comforting, (d) being there, and (e) challenging roles. The IR nurse's physical and emotional presence is essential during an unfamiliar event. Sensory perceptions are increased, and IR nurses are aware of the surroundings and the possible effects on the patients and their well-being. Proper communication and patient education are essential to address vulnerability associated with medical procedures. Nurse staffing

concerns must be addressed as without the opportunity to be present, the nurse's ability to lead and advocate for the patient is negated.

**Implications for Research:** Research may be adapted to other procedural areas or bedside nursing where minor procedures may be performed without moderate sedation providing information on how to better serve patients who may go through the distinct experience of a procedure while awake and alert.

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## **Dedication**

I dedicate this work to my family for their never-ending love, support, and encouragement.

## **Acknowledgements**

I'd like to express my sincere gratitude to my dissertation committee. Without your guidance, this research study would not come to fruition.

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## **Chapter 1**

### **Introduction**

Interventional Radiology (IR) is a medical sub-specialization of Radiology using advanced imaging in the diagnosis and treatment of injury or disease. The minimally invasive procedures performed under the skill of an Interventional Radiologist offer patients an option to open and laparoscopic surgery. Dependent on the type of IR procedure, sedation and analgesia are utilized. However, for many IR procedures, the use of sedation may be unnecessary or contraindicated, and analgesia alone can be utilized for patient comfort (Cornelis et al., 2019). Although less invasive, undergoing a procedure without sedation is not without disadvantages. While conscious during procedures, patients experience a heightened awareness and a varying degree of emotions (Ericsson et al., 2018; Goossens et al., 2011). Sensory perception is increased as novel sights, sounds, and smells are experienced (Goossens et.al, 2011) along with the loss of autonomy and feeling of vulnerability (Cousley, 2015). Integral to the safety and comfort of the patient is the IR nurse who assumes the role of primary nurse during their procedure.

### **Background**

Once referred to as “angiography” or “special procedures” in many hospitals, IR is a sub-specialty of Radiology (Murphy & Soares, 2005). In the 1950’s, Swedish radiologist, Dr Sven Ivar Seldinger developed an over-the-wire technique to percutaneously access blood vessels with a needle, leaving a catheter in place (Higgs et al, 2005; Murphy & Soares, 2005). The Seldinger technique allowed for access to smaller vessels and decreased the risk of hemorrhage and contrast extravasations during

angiography (Higgs et al., 2005). The birth of IR began in 1963 with Dr. Charles T. Dotter and the recanalization of an occluded iliac artery during arteriogram in a patient with renal artery stenosis. Known as the “father of Interventional Radiology”, Dr. Dotter utilized interventional catheters and balloons to widen narrowed or obstructed vessels to increase blood flow through arteries and veins (Murphy& Soares, 2005; Payne, 2001; Rösch et al., 2003). Prior to this approach, the first arteriograms were completed in the operating room through a cut-down method, requiring anesthesia, lengthy hospital stays, and exposing patients to complications of surgery (Murphy& Soares, 2005; Payne, 2001). IR services offer patients treatment options with reduced pain and shorter hospital stays (Society of Interventional Radiology, n.d.-a).

IR as a discipline has significantly grown since its inception, increasing the number of IR procedures performed annually. In 2016, approximately 2.3 million hospitalized inpatients had at least one IR procedure during their hospital admission (Shah et al., 2021). Integral to healthcare organizations, IR is considered an essential service at level 1 designated trauma centers (American College of Surgeons, 2014). Using a variety of imaging modalities, for example, fluoroscopy, ultrasound, magnetic resonance imaging, and computed tomography, procedures in IR allow for the treatment of patients outside of the operating room suite.

Many IR procedures offer a less invasive and economical alternative to some open or laparoscopic surgeries. Typical IR procedures include placement of hemodialysis catheters, image guided biopsies, venous port placements, diagnostic and treatment of peripheral arterial disease, and drainages due to obstruction or infection (Society of Interventional Radiology, n.d.-b). A percutaneous approach to drainage of localized

abscesses has a decreased mortality rate and higher success rate (Levin et al., 2015). Although not all minimally invasive procedures are done without sedation, the ability to perform certain procedures with only local anesthesia is advantageous. Procedures with local anesthetic, while fully awake is cost effective and safer than other forms of anesthesia (MacNeill et al., 2019). Furthermore, patients with comorbidities and malignancies are at a higher risk for adverse effects with the use of moderate sedation (Jones et al., 2018). Moderate sedation may also be contraindicated or inessential in emergent and short-lived procedures. The economic burden associated with sedation related adverse outcomes costs an average of \$3,200 per incident in the United States (Saunders et al., 2018). Less costly and minimally invasive procedures within IR have given patients the option to be treated without the risks of traditional surgery.

Nursing involvement in Radiology began in the 1940's at a cancer institute in Boston, however, employment of a nurse in a Radiology department did not occur until the 1970's (Goodhart & Page, 2007). Nursing in Radiology has since expanded its role from diagnostic services to interventional treatment in sub-specialties. IR now employs nurses dedicated to interventional procedures and assume the role of primary nurse when receiving the patient. Nurses in IR have a multitude of responsibilities beyond the patient's safety, comfort, and education. During IR procedures, nurses monitor hemodynamic stability and may administer moderate sedation. Equally important is the role of the IR nurses as the voice of the patient (Goodhart & Page, 2007). IR nurses are the patient advocate as patients may be awake and alert during procedures.

## **Problem Statement**

Nurses in imaging services have a significant role during any type of interventional procedure. In a team comprising the IR physician and Radiology Technologists, IR nurses are typically the only registered nurse present within the procedure suite and have the sole responsibility of caring for the patient. Patients undergoing a procedure without moderate sedation are awake, alert, with heightened sensory perceptions, and vulnerable to their surroundings (Cousley, 2015; Ericsson et al., 2018; Goossens et.al, 2011). This researcher holds noteworthy experience in caring for patients undergoing an IR procedure without the use of moderate sedation. Although this study explores the lived experience of the nurse, multifaceted issues surrounding the procedure may affect patients and their care. Missing in the current body of literature is the nurse's experience of caring for patients during procedures without the use of moderate sedation. Werthman (2019), identifies a lack of evidence in the study of Radiology nurses and their role in patient outcomes. This study is a step towards developing an understanding of the essence of caring for patients undergoing IR procedures without moderate sedation. With the study results, stakeholders may make appropriate practice and policy changes to improve the circumstances surrounding patient care. To shed light on the issue, the following research question was addressed: "What is the lived experience of IR nurses caring for conscious patients undergoing a procedure without sedation in IR?"

## **Purpose of the Study**

The purpose of this qualitative study was to explore the lived experience of IR nurses caring for conscious patients undergoing a procedure without the use of sedation.



Utilizing a phenomenological approach, multiple in-depth interviews were conducted with IR nurses throughout the United States to address this phenomenon. An analysis of transcribed interviews provided a deeper understanding of the essence of the IR nurse's experience of caring for patients undergoing a procedure without the use moderate sedation.

### **Specific Aims**

This phenomenological study had two specific aims. The first aim of the study was to describe the experience of IR nurses during the peri-procedural process in cases performed without moderate sedation. The second aim of the study was to gain an understanding of perceived barriers to the nurse's role and responsibilities in caring for conscious patients during an IR procedure.

### **Methodology**

The purpose of this qualitative study was to explore the lived experience of a phenomenon. A Hermeneutic phenomenological approach using Heidegger's philosophy was utilized to guide semi-structured interviews and gain rich data. The primary source of phenomenological studies are the in-depth accounts of the participant (Polit & Beck, 2021). Purposive and snowball sampling was utilized to recruit IR nurses throughout the United States who have experienced the phenomenon of interest. Because interviews provide a deeper insight into the intricate actions of this population's experiences (Creswell & Poth, 2018), a phenomenological investigation was best suited for exploring and identifying the issues of caring for a patient during a procedure in IR performed without the use of moderate sedation. After conclusion of the interviews, audio

recordings were transcribed by the researcher verbatim. Data were then analyzed, for themes and categories.

### **Philosophical Foundation**

This study was underpinned by a hermeneutic phenomenological approach using Heidegger's philosophy (Heidegger, 2010). In contrast to his predecessor, Edmund Husserl, who took on a descriptive phenomenological method, Heidegger focused on an interpretive approach to phenomenology (Lavery, 2003). Phenomenology describes a phenomenon through the lens of those who have experienced it (Creswell & Poth, 2018). Hermeneutical phenomenology, also termed as interpretive phenomenology, aims to understand the phenomenon of interest as they occur with those who have lived it. Originating from the Greek word *hermēneuein*, or to interpret, hermeneutics is a method of interpretation (Merriam-Webster, n.d.-a). Phenomenology not only describes a phenomenon but is an interpretive process. The hermeneutic circle is non-linear and allows for a continuous process of interpretation (Crist & Tanner, 2003). This interpretation gives meaning to the lived experience.

The German term "dasein" is a main concept of Heidegger's philosophy and refers to the human existence of "being there" and in the world (Horrigan-Kelly et al., 2016; Lavery, 2003). Through a hermeneutic phenomenological approach, an interpretation of the lived experience of IR nurses caring for patients undergoing an IR procedure without sedation was described. Fore-structures, or pre-understanding, of the researcher contribute to the hermeneutic circle and interpretive process, giving meaning to the lived experience.

### **Researcher's Context**

As a registered nurse with over 15 years of experience in IR, the researcher's experience in IR is extensive as she has served in the roles of staff nurse, charge nurse, and preceptor to nursing students and new employees alike. This study's phenomenon of interest, IR caring for patients undergoing procedures with and without moderate sedation, is an everyday occurrence for the researcher. Technological advances continue to evolve IR, pushing the boundaries of treatments and procedures in this fast-paced environment. IR nursing must strive to keep abreast in the dynamic changes to provide optimal care to patients.

### **Researcher Assumptions**

In hermeneutic phenomenology, researchers do not bracket their presuppositions or experience (Crist & Tanner, 2003; Polit & Beck, 2021). Rather, fore-structures, a prior awareness or pre-understanding of the phenomenon by the researcher contribute to the hermeneutic circle and interpretive process. Interpretive research begins in engagement with the phenomenon where prior awareness is directed (Mackey, 2005). The researcher was aware of potential biases associated with their professional experience. Potential preconceptions are addressed throughout the study through reflexive journaling, and decision trails.

In undertaking this study, assumptions following the phenomenological approach were held by the researcher:

1. Foresight, or a preconceived knowledge of the experience cannot be suspended by the researcher as biases may be subconscious.

2. Interviews not performed on an in-person face-to-face format will affect the richness of qualitative data.
3. IR procedures without moderate sedation cause patients to experience pain and anxiety.
4. Nurses caring for patients with pain and anxiety experience increased work-related stress.

### **Significance**

The foundation of the nursing profession has dated from the Crimean War with even earlier accounts of nursing around the world in primitive societies (Egenes, 2018). Although the presence of nurses in Radiology have been documented for decades, it was not until the 1970s where a nurse was employed specifically for the specialty (Goodhart & Page, 2007). To the patient, the nurse's role, and significance to patient care during procedures may be indistinguishable to the duties of Radiology technologists and physicians. To date, there is no research on the IR nurse's lived experience of caring for patients who are fully conscious during their procedure. The IR nursing specialization is a unique profession and a comparison to other nursing specialties would be fallacious.

The rich descriptions collected from participants gave insight into their role, responsibilities, and caring processes. The findings of this study will be useful for policy makers in creating strategies to support nursing needs in IR to ensure the best outcomes for patients. Enriched through the nurse's narrative, exploring the lived experiences of nurses who care for conscious patients during an IR procedure will improve care by providing information on how to better serve patients who may go through the distinct experience of a procedure while awake and alert.

## **Summary**

In the United States, approximately 1 in 10 patients have been treated in IR during their hospitalizations (Shah et al., 2021). As medical technology advances and the existence of comorbidities becomes rampant, the number of IR procedures will continue to increase. To better understand the phenomena of caring for a patient undergoing a procedure while conscious, a rich, descriptive account of the lived experience is significant in improving patient care during the periprocedural process.

## **Chapter 2**

### **Literature Review**

This study examines the lived experience of IR nurses caring for patients undergoing procedures performed without the use of moderate sedation. This chapter provides an overview of significant literature related to procedures without moderate sedation, care of conscious patients during procedures, patient considerations affecting the role of the IR nurse during these types of cases and identifies gaps in the literature substantiating the need for this study.

A literature search was performed in CINAHL and PubMed using Boolean operators to achieve variations with the following terms: interventional radiology, radiology nurse, nursing care, nurse experience, conscious, local anesthesia, sedation, analgesia. Search criteria included studies published in the English language and excluded work within the pediatric population.

#### **Analgesia**

Advances in medicine have allowed for minimally invasive procedures to be done while the patient is awake and fully conscious with the use of local anesthesia (Hudson et al., 2015a). The use of local anesthesia only in IR procedures has become the standard of care at certain hospitals (Gonzales & Rutledge, 2015). Minor procedures such as steroid injections or superficial biopsies do not necessitate the need for sedation as local anesthesia alone is sufficient in reducing procedural pain. Analgesia is the “insensibility to pain without loss of consciousness” (Merriam-Webster, n.d.-b). Using local anesthetic only for procedural analgesia has been successful in a multitude of procedures including colonoscopy, placement of central venous access devices, cardiac device insertions, and

orthopedic procedures (Goossens et al., 2011; Hudson et al., 2015b; Knudsen et al., 2016; Petrini et al., 2009;). Pain associated with percutaneous interventions in IR are mainly due to puncture of the skin (Cashman & Ng, 2017).

Regardless of the type of IR procedure performed, patients tend to overestimate their anticipated pain likely due to never having undergone the procedure before (Mueller et al., 2000). Interestingly, Mueller et al. (2000) found no statistical significance in satisfaction scores between patients who had sedation during their biopsy versus patients who received local anesthetic only. Despite these findings, the emotional stress caused by a procedure is still present, necessitating attention to care givers. Emotions that may be experienced during an IR procedure without sedation include anxiety, nervousness, and distress (Goossens et al., 2011).

### **Vulnerability**

The threat to one's health is often an unexpected occurrence. Patients undergoing an IR procedure expose themselves to a vulnerability within the peri-procedural environment. Vulnerability is derived from the Latin word vulnerable and defined as "capable of being wounded physically or emotionally; or open to attack or damage," (Merriam-Webster, n.d.-c). Interventions to treat or diagnose also subject patients to a sense of powerlessness (Cousley, 2015). Vulnerability is not only perceived by others but may be perceived by the vulnerable person. Patients who are unsure of their capability to face challenging situations sufficiently experience vulnerability (Angel & Vatne, 2016). Notably, the patient experiences a loss of control during a procedure and relinquishes control to the operator and surrounding staff.

Medical interventions subject patients to a sense of powerlessness (Cousley, 2015; Wermstrom et al., 2016;). Patients surrender themselves to the knowledge, skills, and abilities of the nurse who is caring for them. In doing so, patients accept the professional's competency to care during a vulnerable experience because they lack the clinical knowledge to do so themselves (Knudsen et al., 2016). In a new and unfamiliar environment like IR, the patient experiences a loss of control during a procedure and relinquishes control to the operator and surrounding staff (Ericsson et al., 2018). During IR procedures, it is the nurse who is the competent and able person providing care for the individual.

However, during times of patient distress, the nurse may also face moments of vulnerability. Powerlessness and frustration arise as nurses witness patients in distress and suffering (Karlsson & Bergbom, 2015). Vulnerability of the nurse is related to their own ability to provide care because they fear losing patient trust if the expected care is not provided. Often nurses feel they could have done more for their patient during a distressing experience.

While vulnerability is experienced by both the patient and the nurse, Angel and Vatne (2016) do not consider the nurse vulnerable, but only exposed to the concept of vulnerability through the patient's experiences. However, considering the definition of vulnerability, the openness to emotional damage is just as harmful as a physical threat. A deeper understanding of the nurse's vulnerabilities and its role in nursing care is necessary to provide positive patient outcomes in a procedure where patients themselves are exposed to vulnerability.



## **Sensory Perception**

In IR procedures without moderate sedation, patients are awake and conscious. Conscious is defined as “having mental faculties not dulled; perceiving, apprehending, or noticing with a degree of controlled thought or observation” (Merriam-Webster, n.d.-d). Without sedation, sensory perceptions are heightened and vary at different phases of the procedure. Tactile sensation may include the temperature of the room or administration of local anesthetic. Visual sensations may include the immediate surrounding and equipment. A multitude of sounds exist within a procedure suite from monitoring devices and conversations. The most heightened sensory perceptions (hearing, sight, touch, and smell) are from the patient preparation phase within the procedure suite to when the sterile drapes are removed (Goossens et al, 2011).

## **Anxiety**

Patients scheduled to undergo an IR procedure experience a high level of anxiety (Musa et al., 2020). Anxiety is an emotion characterized by uneasiness, apprehension, and fear in anticipation of an impending dangerous experience (American Psychological Association, n.d.). Anxiety related to a procedure often begins, as soon as the procedure is scheduled (Musa et al., 2020). Anxiety provoked by an impending surgical procedure has been observed to affect post-operative pain requiring more analgesia and delayed recovery (Hudson et al., 2015b; Musa et al., 2020). Anxiety is an emotion characterized by uneasiness, apprehension, and fear in anticipation of an impending dangerous experience (American Psychological Association, n.d.). Physical symptoms include increased heart rate, increased respiration rate, and tense muscles. In comparison to diagnostic radiology procedures, pre-procedural anxiety is more pronounced in IR

patients (Musa et al., 2020). Anxiety prior to procedures pose a challenge to care because high levels of pre-procedure anxiety are detrimental, complicating recovery and affecting the quality of life (Alanazi, 2014). In a study of anxiety during a less invasive IR procedure, up to 68% of participants experienced anxiety despite 32% having received an anxiolytic prior to their procedure (Gonzalez & Rutledge, 2015).

Numerous interventions have been utilized in anxiety reduction in various areas of healthcare. Intraoperatively, many techniques have been utilized during local anesthetic surgery including patient education, audiovisual media, hypnosis, and therapeutic touch. Hudson and Ogden (2016) reviewed the effectiveness of audiovisual and relaxation techniques in the surgical patient and found relaxation-based techniques more effective than audiovisual interventions.

Non-pharmacologic approaches to anxiety reduction have been utilized in various disciplines. In dermatologic surgery, various approaches to reducing stress include cold therapy, audiovisual media, music, verbal distraction, hypnosis, patient-centered communication, guided imagery, and patient education. These interventions were found to be a cost-effective alternative to anxiety reducing medication (Gamboa et al., 2020).

Interventional Radiologists preferred patient education as a method to reduce anxiety (Musa et al., 2020). Several types of patient education methods to reduce procedural anxiety have been studied. An educational video was shown to women prior to mammography; however, preprocedural anxiety was not affected (Mainiero et al., 2001). Bradley et al. (2006) provided an education intervention in the form of a booklet to women prior to a breast biopsy, participants verbalized its usefulness. However, “physical and emotional sensations” were experienced, and participants stated they were

not “asked” about their anxiety at any point during the periprocedural process (Bradley et al., 2006). More recently, the effects of an informational video on anxiety were shown to women prior to hysterosalpingography. Erkilinç et al. (2018) identified women who viewed the informational video had lower anxiety scores versus the control group. Anxiety levels in this study were only determined one-hour prior to their procedure and informational video was viewed in a group setting. It is important to note, the educational interventions described were for procedures where a diagnosis of cancer or infertility were possible, therefore contributing to the stress and anxiety of the patient rather than the procedure alone.

Knowledge of anxiety reducing techniques is beneficial for the care of the IR patient. Despite the anxiety reducing interventions studied, there are no studies examining the nurse’s role of caring during IR procedures. Lacking is insight into the function of the nurse in IR role while the patient is awake and alert during the entire periprocedural process and how anxiety reducing techniques can be instituted in care.

### **Staffing Ratios and Nurse Burnout**

The Association of Radiological and Imaging Nurses (ARIN) recognizes the importance of a registered nurse (RN) during procedures as they maintain the standard of care within their specialty. ARIN’s position on staffing includes care by a competent nurse, with the expectation of one nurse per procedure room (ARIN, n.d.). This statement is specific to IR procedures with sedation. Procedures without the use of sedation, without the need for an intravenous line, procedures the patient has previously had in the past, or procedures designated to have minimal risk are the exception to this statement.

The Society of Interventional Radiology (SIR) holds a similar position to ARIN about procedural staffing stating it is the nurse who is responsible for the optimal care and monitoring of patients. SIR adds the potential for overworked staff causing increased errors and nurse burnout due to inadequate staffing (Baerlocher et al, 2016). Radiology nursing is novel to some organizations where procedures have previously utilized only radiology technologists and the physician. In smaller, rural facilities, there may be a single radiology nurse employed in the department. Implementation of the nursing role in areas that have historically functioned without a nurse can act as a stressor. (Laukhuf & Laukhuf, 2016). Although the nurse's primary duty during procedures is the care for the patient, understaffing radiology departments and overworking staff inhibits the nurse from providing safe, holistic care during a procedure where the patient is awake and alert.

### **Nurse Experience**

As a novel specialty with a limited number of nurses, studies related to the radiology nurse is limited. Fewer are the studies addressing the radiology nurse's experience. An early account of the nurse's role on the radiology team by Miller & Gerard (1964) described the nurse's "unique position of closeness" with patients undergoing radiologic examinations (p. 128). However, authors focused on technicalities of the examination for the ease and productivity of the radiologist, rather than care of the patient.

In many areas, non-radiology nurses care for patients outside of the IR suite. In Canada, where IR nursing has not yet been fully acknowledged, Carley et al, (2021) examined the experience of non-radiology nurses and the nursing care for those without IR training. Findings reflected a lack of exposure to IR nursing. Non-radiology nurses

reported self-teaching as no formal education pertaining to IR exists in the nursing curriculum. This lack of knowledge affected nurse-patient relationships and the continuity of care.

Lunden et al., (2012) examined the experiences of caring by “nurse radiographers” in Europe. The term “nurse radiographer” refers to a registered nurse within diagnostic radiology in Sweden with the responsibility of caring for the patient and radiographic equipment, while a second “nurse radiographer” assists the physician at the sterile field (Lunden et al, (2012). In the U.S. managing radiographic equipment is outside the scope of nursing practice. Notably, nursing roles and responsibilities differ in each country and are subjected to the laws specific to their practice.

To date, the study by Lunden et al. (2012) is the only study with similarities to this research study. The phenomenon of interest of the researcher differs as the experience of IR nurses caring for patients undergoing procedures without sedation is the focus. Although Lunden et al (2012) studied the “nurse radiographers” experience in IR, the roles and responsibilities of the IR nurse in the U.S. are significantly different than as described in Sweden, therefore, further investigation is essential.

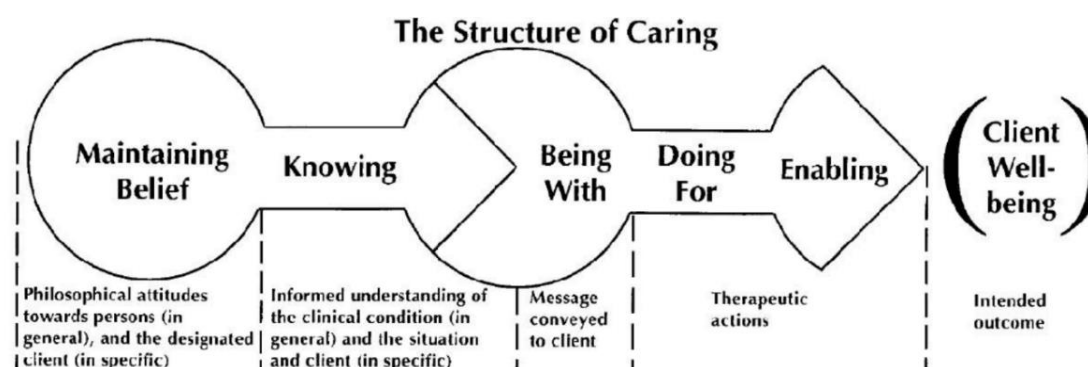
### **Theoretical Framework**

This study is informed by Kristin Swanson’s Theory of Caring (TOC). Caring is essential in the delivery of comprehensive nursing care. In her development of a middle range theory, Swanson (1991) defined *caring* as a “nurturing way of relating to a valued other toward whom one feels a personal sense of commitment and responsibility,” (p. 165). The TOC is comprised of five distinct processes: (a) knowing, (b) being with, (c) doing for, (d) enabling, and (e) maintaining belief (Swanson, 1993). The process of

“knowing” is to understand the event and its meaning. “Being with” is an emotional presence (Andershed & Olsson, 2009; Swanson, 1993). “Doing for” encompasses actions done for other what they normally would have done themselves for their protection. The focus of “enabling” is to effectively facilitate transition through unfamiliar events. Lastly, at the base of caring is “maintaining belief” is having hope, optimism, and confidence in others will get through said transitions and events. (Andershed & Olsson, 2009; Swanson, 1993).

**Figure 1**

*Swanson’s Theory of Caring*



*Note.* From “Nursing as Informed Caring for the Well-Being of Others,” by K.M. Swanson, 1993. *Journal of Nursing Scholarship*, 25(4), 352–357.

### Summary

To date, there are no studies specific to the IR nurse’s lived experience of caring for patients who are fully conscious during their procedure. The vulnerability and increased sensory perceptions during interventions in awake procedures are patient

focused. In current literature, research caring for conscious patients largely refer to cases performed outside the specialty of IR. Of the limited available research related to the IR nurse, most are specific to the administration of sedation and anxiety. A study similar to this intended research by Lunden et al (2012) is not applicable as the research was conducted in Europe where the role of the IR nurse is incongruent with the role of the IR nurse in the U.S.

Insight into the IR nurse's role, responsibilities, and caring process is enriched through their own narrative. Exploring the lived experiences of nurses who care for conscious patients during an IR procedure is significant in achieving positive outcomes for patients and in improving the nursing role dynamics.

## **Chapter 3**

### **Methodology**

#### **Purpose of the Study**

The purpose of this study was to explore the lived experience of IR nurses caring for conscious patients undergoing a procedure without the use of sedation. Several aims of this study were proposed. The first aim was to describe the experience of IR nurses during the peri-procedural process in cases performed without sedation. The second aim was to gain an understanding of perceived barriers to the nurse's role and responsibilities in caring for conscious patients during an IR procedure. Therefore, the study answered the research question: "What is the lived experience of IR nurses caring for conscious patients undergoing a procedure without sedation in IR?"

This chapter outlines the study design to explore the lived experience of Interventional Radiology (IR) nurses caring for patients undergoing a procedure without moderate sedation. The research design and rationale, participants, sampling, data collection, and the data analysis process will be discussed. In addition, ethical considerations and trustworthiness of the study are addressed.

#### **Research Design**

To explore the essence of IR nurses caring for patients undergoing a procedure without the use of moderate sedation, a qualitative study design was utilized. Hermeneutic phenomenology based on the philosophy of Martin Heidegger (Heidegger, 2010) was chosen as the qualitative lens for this study. In hermeneutic phenomenology, the meaning of lived experiences is not only descriptive, but an interpretive process (Creswell & Poth, 2018). Hermeneutic phenomenological research is utilized in gaining



knowledge of the meanings of a phenomenon and an understanding of the experience (Crist & Tanner, 2003).

### **Sample**

In phenomenological studies, all participants must have experienced the phenomenon of interest. Non-randomized, purposive, and snowball sampling was utilized to recruit IR nurses who have experienced caring for patients undergoing procedures without the use of moderate sedation. Purposive sampling allows the researcher to select people who meet the study criterion and have experienced the phenomenon of interest (Polit & Beck, 2021). Criterion sampling is the type of purposive sampling chosen for this study. In criterion sampling, participant selection is guided by specific criteria set by the researcher (Polit & Beck, 2021). Snowball sampling was also utilized in recruitment to garner enough participants for this study. In snowball sampling, current study participants refer potential candidates who may meet the study criterion (Polit & Beck, 2021). At the conclusion of the interview, study participants were asked to share the recruitment flyer and researcher's contact information with those they believed may have met the study criterion.

Small sample sizes are sufficient for data collection (Creswell & Poth, 2018) and a sample size of 5-25 participants is common in phenomenological studies (Creswell & Poth, 2018; Polit & Beck, 2021). A total of 12 participants responded to the recruitment effort. Although a signed consent form was returned to researcher from all 12 respondents, one participant did not reply to communication efforts by the researcher to schedule an interview. In total, 11 participants participated in semi-structured interviews for this study.

***Inclusion Criteria***

Nurses eligible for the study are those who hold an active Registered Nurse license within their state of practice. The participant must have at least one-year experience within the IR setting and must also have experience in caring for the adult population undergoing IR procedures without the use of moderate sedation.

***Exclusion Criteria***

Ineligible nurses include those who do not currently work within the IR setting, nurses working within the pediatric IR setting, and those with less than one-year IR experience.

***Recruitment***

The Association of Radiologic and Imaging Nursing (ARIN) is a professional organization representing IR nurses and nurses practicing in other radiologic modalities. The Executive Board of ARIN was contacted to gain recruitment support for this research study and a Letter of Support was returned to the researcher from the organization (Appendix A). With prior authorization from the executive board, the researcher posted recruitment information online on ARIN's members-only listserv. Study information was also disseminated to current ARIN members through publication of the study recruitment flyer (Appendix B) in the organization's monthly online newsletter. Recruitment information was shared for three consecutive months during the data collection process before data saturation was achieved.

A total of 12 participants responding to recruitment efforts through criterion and snowball sampling. Recruitment was initiated through contact with members of ARIN who have met the inclusion criteria and experienced the phenomenon of interest. All 12

respondents agreed to one-to-one interviews about their experience of caring for participants during IR procedures without the use of moderate sedation. One respondent signed and returned the consent form but did not respond to efforts made by the researcher to schedule an interview.

### **Data Collection**

Multiple data collection methods were utilized in this phenomenological study to explore the lived experience of IR nurses caring for patients undergoing procedures without moderate sedation. Data collection methods include semi-structured interviews and a demographic data collection questionnaire.

#### ***Semi-structured Interviews***

Interviewing is a method of data collection that allows the researcher to gain insight and context (Doody & Noonan, 2012). In a semi-structured interview, participants were asked open-ended questions about their experience.

During this study, social distancing directives were in place due to an ongoing global pandemic. Social distancing is the practice of maintaining a distance of at least 6 feet from others to avoid the transmission of disease (Merriam-Webster, n.d.-e). Multiple data collection options were offered to participants to maintain social distancing guidelines. Options included interview via telephone or face-to-face interviews. The face-to-face interviews were offered via video conferencing for geographically remote participants. For local participants, a face-to-face in-person interviews within social distancing guidelines were offered. Of the 11 participants, eight chose to be interviewed by telephone, two participants chose video conferencing, and one chose to interview face-to-face in person.

The length of each interview ranged from 19 minutes to 47 minutes to complete. All interviews were scheduled in advance with dates and times chosen by participant. In-person interviews were chosen at the location of the participant in accordance with social distancing guidelines. The participant who opted for an in-person interview chose a local coffee shop's outdoor patio for the interview setting.

For the interview conducted via videoconferencing, Zoom, a cloud-based platform was chosen by the participant. An advantage of utilizing Zoom is the ability to allow geographically remote individuals participate in interviews (Archibald et al., 2019). Zoom enabled real time communication between the researcher and participant who was geographically located in a different state. Although Zoom is a videoconferencing platform, only the audio portion of the interview was recorded.

At the completion of each interview, the digital audio recordings were reviewed for completeness. All completed interview recordings were then transcribed verbatim by the researcher. Digital audio recordings and transcriptions were then simultaneously reviewed for accuracy. As compensation for their time, all participants were issued a \$25 Amazon gift card upon completion of the interview and demographics questionnaire.

### ***Interview Guide***

In the data collection process, qualitative interviewing was utilized to gather rich and in-depth descriptive responses about the IR nurse's lived experience of caring for patients undergoing procedures without sedation. Interviews are the preferred method to gain an understanding of the perspective of the participant in the phenomenon of interest (McGrath et al., 2019). A semi-structured interview format was utilized to allow the researcher to focus the participants experience ensuring alignment with the research

topic. Semi-structured interviews are flexible allowing for the researcher to probe and direct the conversational interview and explore new paths of inquiry (Doody & Noonan, 2013). Although semi-structured interviews were conducted in a flexible format, predetermined questions in an interview guide were utilized during the interview process (Appendix C). The interview guide assists the researcher in building rapport with the participant and focus on the phenomenon of study (Doody & Noonan, 2013; McGrath et al., 2019).

In a semi-structured interview, participants were asked the following open-ended questions:

1. “Tell me a little about yourself and your background in nursing.”
2. “Tell me about your experience in caring for patients who do not receive sedation and are conscious during their procedure.”
3. “How does your nursing practice differ when caring for a patient undergoing a procedure without sedation versus with a procedure with sedation?”
4. “What do you do when a patient expresses a negative response during a procedure without sedation.”
5. “What does “caring” mean to you?”
6. “What emotions did you feel during these types of procedures?”

Responsive interviewing style techniques guide flexible questions and are designed to seek depth and detail (Rubin & Rubin, 2012). To gain a deeper understanding of the participant’s experience and allow for clarification or elaboration of thoughts, prompts or probes were used (Doody & Noonan, 2013). Prompts or probes to garner data during the interview included:

- “Tell me more.”
- “Please explain/clarify...?”
- “What do you mean by...?”
- “How do you feel when...?”

Participants were recruited and interviewed until data saturation was achieved.

Data saturation is achieved when information is redundant and no new data is acquired (Creswell & Poth, 2018). Jottings were taken of the observations made during the interview. Jottings are words or phrases that will prompt recollection of an event or moment during the interview (Polit & Beck, 2021). After the completion of each interview, reflective journaling was practiced by the researcher to express thoughts after the interview.

### ***Demographic Data***

Instrumentation utilized in this study included a demographic data form (Appendix D). A web-based survey was utilized to collect participant data including the participant’s age, gender identity, race, highest level of education, years of experience as a Registered Nurse, years of experience as an IR nurse, nursing history background, nursing specialty certifications, occupational status as defined by their employer, and type of facility they are employed. Sections for age, gender identify, years as a Registered Nurse, years of IR nursing experience, nursing areas worked, and nursing specialties were fill-in answer options. Race options to choose from included American Indian or Alaska Native, Asian, Black, or African American, Hispanic or Latinx, Native Hawaiian or Other Pacific Islander, and White. Options for the nurse’s highest degree or level of education completed included nursing diploma, Associate degree, Bachelor’s degree,

Master's degree, and Doctoral degree. Occupational status of the nurse included options of full-time, part-time, or per diem. The type of facility of employment included acute care hospital, outpatient surgical center, and "other" for a fill-in option. This web-based survey was emailed to participants at the conclusion of their interview.

### ***Data Management***

All initial contact with participants was through password protected electronic mail. In using the video conferencing platform Zoom, the participant was sent an individualized Zoom meeting ID and encrypted password via electronic mail. The Zoom meeting ID and encrypted password was utilized to gain access to the virtual meeting space and was only used for the scheduled meeting date and time.

To protect the privacy of participants and maintain anonymity, all data collected was de-identified, and participant identification numbers randomly assigned. To maintain security, audio files and documents were stored in a password protected computer armed with anti-virus and anti-malware software. The researcher was the sole collector of data in this study and any information shared with the dissertation committee was de-identified. Digitally recorded audio of the interviews and researcher notes will be stored for a period of 5 years and then destroyed.

### **Informed Consent**

Informed consent for this study was obtained from participants electronically. The consent form stated the purpose of the study, what the participant will be asked to do, identify foreseeable risks or discomforts, benefits of the study, confidentiality procedures, compensation, voluntary nature of this research study, and researcher contact information. The informed consent form was emailed to potential participants via secure

email with an attached request for electronic signature. A copy of the signed informed consent form was automatically emailed to both signees for their records. Each participant was given the option to withdraw their consent at any time during the research study.

### **Protection of Human Subjects**

To protect the rights and welfare of human participants, approval for this study was obtained through the Institutional Review Board at the University of San Diego (Appendix E). Informed consent was directly obtained prior to the start of all interviews. Although this study posed no physical threat, potential risks and discomfort exist for participants who share their feelings when discussing their experiences. Contact information for a Mental Health Hotline was shared so participants may discuss their feelings with a professional if needed.

### **Data Analysis**

Data analysis is an iterative and ongoing reflexive process within hermeneutic phenomenology. Interpretation is non-linear but rather follows circular thinking referred to as the hermeneutic circle. The hermeneutic circle is an interpretive process and understanding text in parts and as a whole (Lavery, 2003; Mackey, 2005; Polit & Beck, 2021). The hermeneutic circle begins with the idea of the study and converging conversations. Important statements, phrases, or quotes providing insight into the phenomenon of interest is highlighted in the coding process. As data were viewed in parts and as a whole, significant themes began to emerge. Interpretation of themes surfaced in co-construction of the participant and researcher from their context of the data (Lavery, 2003). Following each interview, the researcher coded and composed an interpretive



summary of the notable emerging themes. As new themes emerged, previous transcriptions were reviewed to investigate if the new theme was previously overlooked. This theme development is part of the iterative process and fundamental to hermeneutic phenomenological research.

### **Transcription and Coding**

Interviews are rich with data; therefore, the researcher chose a theoretical approach to transcribing digital audio recordings. Rather than outsource to professional transcription services, each digital audio recording was manually transcribed by the researcher. Transcription is not preparing data for analysis but is analysis, as well as the data are subjective and holds meaning (Ravitch & Riggan, 2017). Initiating analysis early in the study allows the researcher to become more aware of themes as they emerge (McGrath et al., 2019). After verbatim transcriptions of semi-structured interviews, the transcripts were read and re-read along with auditory confirmation of digital audio recordings to identify thematic constructs and nodes.

Concept coding, as described by Saldaña (2021) was utilized to analyze qualitative interviews. In concept coding, a code or phrase is applied to suggest an idea (Saldaña, 2021). Concept coding moves the participant toward “ideas suggested by the study” making it applicable for use in phenomenological studies. (Saldaña, 2021, p. 153). Transcripts were reviewed and coded for gerunds or phrases suggesting a broad concept or ideas. (Saldaña, 2021). Following the identification of concepts, tenets of the hermeneutic circle identify emerging themes.

## **Trustworthiness**

In qualitative research, trustworthiness of the study is the level of confidence a researcher has in their data and analysis (Polit & Beck, 2021). To develop trustworthiness in this qualitative research study, criteria set by Lincoln and Guba (1985) were followed highlighting credibility, transferability, dependability, confirmability, and authenticity (Polit & Beck, 2021).

### **Credibility**

Credibility, or confidence in truth of the study and subsequent findings, is one of the criteria of trustworthiness in qualitative inquiry (Polit & Beck, 2021). Techniques utilized by the researcher to establish credibility of the study include reflective journaling throughout the inquiry, audio recordings with verbatim transcription, saturation of data, and audit trails.

### **Dependability**

Dependability, in qualitative inquiry refers to the stability of the data (Connelly, 2016; Cope, 2014; Polit & Beck, 2021). Notetaking by the researcher logged all activities throughout the decision-making process. An audit trail of logs and decisions made during the research study may produce the same results if done under the same conditions suggesting dependability (Connelly, 2016; Cope, 2014).

### **Confirmability**

The criterion of confirmability refers to neutrality and the presentation of unbiased data (Cope, 2014; Polit & Beck, 2021). Reflective notetaking is technique consistently utilized as it allows the researcher to maintain a sense of awareness their

preconceptions. Findings presented reflected the voice of participants and without researcher bias using descriptive quotes.

### **Transferability**

Transferability is the applicability of this study in other settings (Connelly, 2016; Cope, 2014; Polit & Beck, 2021). The researcher has presented a rich description of the participants experience of caring for patients undergoing IR procedures without sedation. However, meeting this criterion of qualitative inquiry is at the discretion of the reader as it is the reader who decides if findings are applicable to their context (Connelly, 2016; Polit & Beck, 2021).

### **Authenticity**

Authenticity was later added by Guba & Lincoln (1994), as a fifth criterion to trustworthiness of qualitative research within the constructivist paradigm (Polit and Beck, 2021). Authenticity of a study refers to the researcher's ability to convey the participant's lived experience so readers may grasp the essence of the phenomenon of interest fairly and faithfully (Connelly, 2016; Cope, 2014; Polit & Beck, 2021). The researcher conveyed authenticity through rich description of nurses caring for a patient undergoing a procedure without sedation in the IR setting. Reflective notes document the researcher's personal experience (Polit & Beck, 2021). To remain authentic, reflective notetaking was practiced by the researcher throughout the entirety of the study.

### **Summary**

This chapter outlined the methodology of a hermeneutic phenomenological study to explore the lived experience of IR nurses caring for conscious patients undergoing a procedure without the use of moderate sedation. Participants and sampling procedures,

data collection, and the data analysis process were detailed. Ethical considerations and the protection of human subjects were discussed. Lastly, efforts of the researcher to establish trustworthiness throughout the study were addressed.

## **Chapter 4**

### **Results**

The purpose of this qualitative study was to explore the lived experience of Interventional Radiology (IR) nurses caring for conscious patients undergoing a procedure without the use of sedation. Using a phenomenological approach, this study aimed to describe the experience of IR nurses during the peri-procedural process in cases performed without sedation and to understand perceived barriers of the nurse's role and responsibilities in caring for conscious patients during an IR procedure. This chapter presents the findings from the study. Participants of this study are described based on the demographic questionnaire completed at the conclusion of their interviews. Data analysis was guided by the Hermeneutic circle; data were reviewed as a whole and in parts. Themes and subthemes from the data are presented with direct quotations from participants.

#### **Description of Participants**

Eleven participants were interviewed for this study. However, the audio file of one interview was corrupted and not useable for analytical purposes. This participant's interview notes, and demographic information were removed from study findings. Audio recordings from 10 participants were transcribed verbatim by the researcher and transcripts cross-checked for accuracy.

Study participants self-identified female (n = 9) and male (n = 1); ages ranged from 30 to 51 years. Participant's years of experience as a registered nurse ranged from eight years to 25 years. The range of nursing experience in IR ranged from one year to 10 years. An overview of participant characteristics is presented in Table 1.

**Table 1***Participant Demographics*

Participant ID	Age	Gender identity	Race	Highest Education Completed	RN Experience (years)	IR Experience (years)	Nursing Background	Specialty Certifications	Facility Employed
1	38	Female	White	Bachelor's degree	10	1	Critical care, Emergency, Progressive care	Trauma Nurse Core Course Certified (TNCC)	Acute care hospital
2	42	Female	Hispanic	Bachelor's degree	19	7	Critical care	Critical Care Registered Nurse (CCRN)	Acute care hospital
3	40	Female	White	Bachelor's degree	16	7	Critical care	Certified Radiology Nurse (CRN)	Acute care hospital
4	31	Female	White	Bachelor's degree	9	2	Medical-surgical, Telemetry, Endoscopy, Outpatient Surgery	Certified Medical-Surgical Registered Nurse (CMSRN)	Acute care hospital
5	30	Female	White	Bachelor's degree	8	2	Post-anesthesia care unit, Emergency, Cardiology	None	Acute care hospital
6	51	Female	White	Master's degree	25	12	Critical care, Cardiac, Neuro, Surgery	None	Acute care hospital
7	37	Female	White	Master's degree	14	10	Medical unit, Endoscopy	None	Acute care hospital
8	47	Female	Asian	Bachelor's degree	20	6	Critical care, Oncology	None	Acute care hospital
9	38	Female	Hispanic	Bachelor's degree	10	6	Emergency, Medical-surgical	Certified Emergency Nurse (CEN)	Acute care hospital
10	40	Male	Hispanic	Bachelor's degree	13	5	Critical care, Emergency	None	Acute care hospital

## Findings

In this hermeneutical study, investigating the lived experiences of IR nurses caring for patients undergoing procedures without the use of sedation, five themes and nine subthemes emerged. (Table 2). The five major clusters of themes were: (a) undertaking a multi-faceted role (b) awareness, (c) comforting, (d) connecting with, and (e) challenging roles.

**Table 2**

*Themes and Subthemes*

Theme	Subtheme
Undertaking a multi-faceted role	Advocating for Leading the way Educating
Awareness	Self-awareness Situational awareness
Comforting	Communicating Distractions
Connecting with	Physical presence Emotional presence
Challenging roles	

### Undertaking a Multi-faceted Role

Participants in the study shared unique experiences regarding their position as registered nurses within IR. All the nurses interviewed shared encounters of going above and beyond standard nursing practice to care for patients undergoing IR procedures without sedation. Overall, the theme, undertaking a multi-faceted role, encompasses three subthemes: (a) advocating for, (b) leading the way, and (c) educating.

### *Advocating For*

In in all areas of healthcare, nurses are known to act as advocates for their patients. Advocacy for patients also extend into the procedural areas. As an advocate for the patient, the nurse acknowledges all patient's concerns and preferences (Cousley, 2015). "Occasionally, a patient may not want sedation for whatever reason and so it might even be for a procedure we typically sedate for. So, I would manage that patient without sedation," (Participant 5). Although the patient's wants are considered, the nurse still bears the responsibility of keeping the patient comfortable and safe. She continues to share:

But maybe like a bone marrow biopsy or infuse-a-port placement and for various reasons they choose not to, we encourage it in those cases because they can be a little bit more lengthy [sic], and maybe a little bit more uncomfortable.

(Participant 5)

As a nurse with over 10 years of IR experience working in both government run and community-based hospitals, Participant 7 believed the community may be "over-sedating," stating, "I see that people really don't need to have sedation or most people don't, but we do sedate for certain procedures. I don't want you to feel like we are barbaric," (Participant 7). Although Participant 7 shared a slightly dissimilar perspective regarding non-sedation cases, she is an advocate for her patients, nonetheless.

When discussing a patient's unfavorable response during procedures without sedation, Participant 2, who has almost 20 years of experience as a RN, described several nursing actions:



Well, if its [inability to tolerate procedure] interfering with the procedure, like the safety of the procedure being completed... I would ask to pause and find out what it is that the patient needs. You know, like what it is that is bothering them? Is it because there is a drape on their head? Is it something I can alleviate in the immediate? Is it just a positioning thing? Is it something that is covering their face and they cannot breathe? Can we give them more lidocaine, maybe, to make it more comfortable?

Participant 2 continued to impart the intermediation planned if met with this scenario mid-procedure:

I'd probably stop in the middle. I would. You know if the doctor is just bulldozing their way through and wants to get the procedure done and the patient is uncomfortable, I would probably stop the doctor and say, "Hold on a second. Let me just check what is going on that they are not tolerating [the procedure]".

Participant 1 acknowledged the potential for procedures to be categorized as emergent citing, "The critical care the patient requires, [...], if we had to do a procedure on an inpatient that was kind of emergent [...] but they ate breakfast. We can't administer sedation because it's [going to] put the patient at risk."

### ***Leading the Way***

The second emerging subtheme, "leading the way" , described the IR nurses' innate ability to lead. Nurses are the primary caregivers for patients in the IR suite during procedures. According to the nurses interviewed, only a single nurse is involved in each procedure and in some cases, there is no nurse involvement whatsoever. "If it's a case like a PICC [peripherally inserted central catheter] or joint injection, there isn't nurse. We

don't go to those cases. One hospital that I worked, the nurses place the PICCs in the patient's room, not IR," (Participant 10). Sharing a similar experience is Participant 1, who is not required to be in certain non-sedation cases within IR, "but if something happens, the techs come and get me."

Teamwork is also essential within IR and the nurse is a leader of the team. Participant 10 stated "nurses run the board", prioritizing IR procedures and the procedures were not started "until I'm ready and the patient is ready." Participant 2 shares a comparable opinion but emphasizes preparation. "There is a lot of planning that goes into it. [...] you don't want the patient to have any complications and making any errors. So, we make sure we look up all the things that can be a risk for the procedure," Participant 2. She continued:

We have to know what we are doing, what the plan is. [...] doing our time out, making sure that's done correctly, and that we have the right patient, and the right procedure because we are doing many cases that those things can be (pauses).

There are errors that can be made (Participant 2).

Participant 2 further discussed efforts to improve the process of care:

If [an issue] is something in the system process that I feel could be fixed, I would go to my manager [...] and talk to the team in the morning huddles. "Hey, this patient had this experience. Is there something we can do to alleviate that next time?" So, hopefully going forward, they could intervene to not allow whatever the negative experience was. (Participant 2)

Sharing this same sentiment of refining nursing practice in IR is Participant 6 whose IR experience includes working in several IR departments across a health system.

“[Collaboration] is cool because [other IR nurses] ask me “how do they do it at other places? How can we do this better?”

As leaders, IR nurses are heading multi-disciplinary teams of radiology technologists, physicians, and ancillary staff to provide the best care for the patient.

Participant 7 was very open about the nurse’s relationship with the physicians:

They listen to the nurses. [...] I can tell you there have been times where the nurses have said I don’t feel right about this. Something just doesn’t feel right. I think we need to get anesthesia and not just moderate sedation even if their Mallampati [score] is a 1 or 2 [...] The doctors won’t even question it. They don’t even question it. (Participant 7)

### ***Educating***

The last subtheme emerging within the multiple roles assumed by the IR nurse, is the “educating”. All study participants emphasized the importance of patient education and communication. According to Participant 1, “If I am able to educate the patient to the best of my ability and they know what they are expecting, they are much more relaxed, satisfaction is higher and less complaints of pain.”

One participant described in detail, her process of educating a patient prior to a procedure:

If a patient is going to have a [procedure] and we are not going to give them sedation, we would start by telling them, “We are going into the procedure suite. You’re [going to] be laying on your stomach. We can give you pillows and blankets and things to make you comfortable. Once we get you in there, there’s [going to] be some time before the doctor comes in to prep you where they will

clean your back and clean your tubes really [sic] well. Once the doctor gets in, we will have a conversation about your procedure which is the “time out” process, then we will get started. The doctor will numb you with a local anesthetic and then we will change out the tubes.” I usually tell, you know, “you may feel a little pressure. We’re not [going to] take away all of the feelings that you might have. Hopefully nothing sharp or painful. And then after your procedure you’ll get back on your stretcher and you will be going to the recovery area until it is time to leave.” It’s kind of I guess a brief overview of how we would tell them what to expect. Then once we get in the room of course we will prep and tell them what we are doing as we are prepping the patient and then call the “time out” when the physician comes in and give them a heads up when they are going to stick them with the lidocaine. So just kind of always ahead of time prepare them for what is going to happen next. (Participant 3)

A nurse theorized educating the patients prior to their procedure decreases stress:

Having [an overview], “this is what we are going to be doing. I will be taking care of you. [...] This is what you can expect the day of. This is what you can expect after. Just alleviating stress and uncertainty, and with everything that is going to be happening. (Participant 1)

Participant 2 associated patient education with caring.

I think a big part of caring for my patients is educating them, you know. I think that shows that I care because I want them to know what it is going to be like, what to expect and what could possibly happen, and how long they are going to be there and who they are going to see and who are they going to meet and what

the process is for the patient, that just alleviates fears and anxieties and I think that is a part of caring.

### **Awareness**

The second major theme emerging from the participant's lived experience of caring for patients undergoing IR procedures without sedation is "awareness". Within the theme of awareness, the subthemes of "self-awareness", and "situational awareness" emerged. In "self-awareness", the IR nurse is in tune with and acknowledges her own emotions and actions during her interactions with patients, with the IR team, and throughout the peri-procedural period. Aligning with this premise is the notion of "situational awareness" as the IR nurse is mindful of the environment and circumstances regarding the procedure with a central focus on caring for the patient.

### ***Self-awareness***

Participants shared a spectrum of emotions experienced while caring for patients undergoing procedures without the use of moderate sedation. When discussing emotions while caring for patients who are not tolerating a procedure well, Participant 1, was straightforward saying, "I can handle stressful situations well." She went on to share her frustrations in a procedure where a nurse's presence was not required:

[...] as soon as I walked in the room, I knew that the patient was about to aspirate. The doctor was frustrated. He knew it was [going to] happen, and then it happened. It's frustrating because again, we are bringing harm to this patient because a nurse didn't look at this patient prior to or risks identified [sic] and something happened.

Participant 9 shared her own vexation:

I guess sometimes I feel frustrated knowing that this kind of procedure should require sedation. At least minimal. To help the patients relax because any kind of procedure we are doing is... and the patient is unable to receive sedation, it just makes it more difficult because, [...] the sedation will help the patient relax and counter the procedure and make them feel a little bit better.

Participant 2 shared her frustrations as she reflected upon an occasion entering the IR suite as the team was preparing a patient for the incorrect procedure.

I'm like, 'it's not just a [nephrostomy tube.] exchange!' So, the patient picked up on 'the nurse doesn't know what the procedure is going to be,' and when the techs prepped the patient, [...] they didn't prep him completely the right way.

Participant 8 shared a feeling of frustration as "some kinds of procedures could use sedation." Participant 3 acknowledged her own sense of anxiety during a procedure, "Now there are obviously times that the patient is anxious, and you are having trouble finding them a way of feeling comfortable. [...] I feel more anxious, and you know, wanting to help them as much as I can." In this experience, the nurse shared feeling "helpless" and wanting to do more for the patient.

Participant 5 shared how emotions can drastically change during a procedure. She explains:

Let's just say to it, there is no typical case. I think that most of the time there is a presumption that everything is going to go smoothly because we are not having to, of course, we are monitoring these patients, but we are not monitoring them in such a degree that we would if we were sedating them, because many of the

patients overall who are not receiving sedation are stable. They're sort of a [pause] it's a little bit more at ease. But that at ease-ness can change at any moment because [...] the patient maybe doesn't respond well.

### *Situational Awareness*

The nurse's awareness extends beyond immediate and extends into the environment around them. Distinct from the patient, the nurse becomes aware of the events in the procedure suite. Participant 8 shared a frightening moment indirectly associated with the procedure she was involved with:

The lights started flashing and I looked up at the doc and he looked back at me. I looked at the patient and she asked, "what's a code red?" I just had to be calm and tell her it was a report of a fire somewhere. Little did she know [the fire] was right next door. I had to quickly think over my plan. Ok, if this is a true fire, room 2 is that direction so I'm going to go down this hallway instead.

In addition to being aware of the environment and surroundings, the IR nurse is also in tune the procedures itself. Participant 9 stated, "when I know there will be some pressure or maybe pain, I give them [patient] a heads up that way they are prepared for it and not startled." Similarly, Participant 6 shared how knowing the circumstances of the procedure assists in communicating with the patient:

[Understanding] those vital signs and response to the procedure or knowing the painful parts of the procedures to let them know, "hey we are about to use a balloon. You may feel a little bit of pressure [...] you may feel or see some warmth or lump near your face or sparks out of your eyes, but it's related to the contrast.

Situational awareness not only involves what is taking place within the immediate surroundings but also the persons within the space. At times, conversations in the procedure room can become an issue:

We have to remind each other that there is a lot of conversation that goes on in the room and if the patient is not sedated, that could be a problem. You don't want to have conversations that are personal and inappropriate while the patient is there awake. (Participant 3)

Participant 6 had a similar experience with personal conversations in the room and shared her tactic for remedying the situation:

If my scrub tech and physician are talking about the football game last Sunday, I like to somehow ask the patient if they are a fan of football. Whose team do they root for and just kind of remind the room that we have a patient and that if we are going to have a conversation, we are going to include the patient or talk about something that they [patient] are interested in to distract them from the procedure. Not have a side conversation. (Participant 6)

Aligning with an awareness of the environment “But the staff then cannot forget that the patient is, is there and hearing all these things and they know.” (Participant 2)

### **Comforting**

A third major theme, “comforting”, emerged from the data. IR nurses described numerous efforts to alleviate distress and provide ease during a procedure without sedation. Within this theme, two subthemes are identified.



Participants described the term “caring” as having “compassion” or “empathy” while providing “comfort” for patients. Participant 1 simply stated, “I want them to be comfortable.” She further states:

Caring means [...] being patient with empathy. Having the integrity to do the right thing for the patient at all times and making sure what we are doing is ethical. That we are not putting the patient at more risk for adverse events and optimizing outcomes in the end and the patient feels safe (Participant 1).

According to Participant 7, “It’s our personalities and approach to patients. They feel comfortable.”

[Caring is] being supportive and trying to put yourself in that position.

Remembering that they are trusting you so you want to be as supporting and compassionate as you can with the patient. I think being mindful of what they are feeling and what is going on with them. Always have your focus on that patient. (Participant 3)

During procedures where sedation is not administered, patients are alert and oriented, prompting immediate comforting measures by the nurse. Comforting measures are initiated by nursing as early as possible. “Communication” and “distraction” are two comforting measures emerging from the data.

### ***Communication***

The ability to communicate with patients was a significant subtheme recognized. This subtheme was categorized under “comforting” as communication was therapeutic in nature.

Participant 7 explained how thorough communication with the patient is essential to the success of the procedure:

Now, they know from the beginning when I am calling them and scheduling it [the procedure] or if they are an inpatient and the doctor is talking to them. Because a lot of people do think, they [think] everything in IR is having surgery. “I’m going to be put to sleep” or “I’m going to be put under”. When we are upfront that no you are not going to be [...] they are nervous, and we say well you really don’t need to be put to sleep for this [procedure]. When they are finished with the procedure, they are like, “oh, that wasn’t that bad.” That is the majority of the patients. It is usually the fear of the unknown. You are putting something in my neck. Transjugular liver biopsies. I mean we don’t give sedation for that.

Participant 5 shares a similar:

There is a lot of “Googling” that happens before they arrive to us and there is a lot of input from friends who may have had procedures done. So, there’s a lot of varying ideas of how this is going to take place. Lots of unknowns so, as a nurse I play the role more of helping them understand exactly what they are going to experience. We are going to take it step by step. What they may feel. Many of them are concerned about the pain level and so I have to put their mind at ease that we are still going to take every precaution in that regard. We are going to use lidocaine and we are going to numb things up. Sort of guide them just step by step and be there in the case itself to answer any questions and to encourage them along the way if needed.

She continues to explain:

I think they come with a preconceived notion of what is going to happen and, in many cases, its inaccurate because maybe the information either is [pauses]. I find that most of what they found out is sort of that shock value of information you might find on the internet. It's sort of the extreme cases, always kind of the negative points. It's fear building. They've spoken to friends who maybe have had these types of procedures done in the past and we don't do them that way anymore and so that's. They're relying on their previous friends or family experience that was quite a while ago. So that's basically all they know. So, they are coming into it with a lot of unanswered questions and maybe some false information that needs to be clarified and I help them do that.

### ***Distractions***

All participants were eager to share the various techniques they utilize to comfort patients during IR procedure without sedation. Participant 4's facility trialed aromatherapy with lavender essential oils. Participant 6 offered an approach utilizing physical contact. "Sometimes, it's just holding their hand during the case or patting their shoulder, talking to them. Participant 3 shared:

There are times we don't give sedation and [the physician] can give them more local anesthetic and again you just try to offer any kind of support to them whether it's rubbing their forehead or just sitting beside them holding their hand or you know warm blankets [...] whatever you can do to help comfort them throughout their procedure.

“I learned to do a lot of distraction. One of it is the music,” said Participant 7. She continued to speak of her experience of conversations between staff and patients in the procedure suite:

I only worked in one IR lab in the private sector but there were different IR doctors that came through and all the IR doctors, you didn't talk. There was no conversation. But at [...], we can carry on a conversation in the room. Our doctors are fine with that. So, there is a lot of distraction with talking with the patients. So, music, distraction, talking the patients through it, explaining.

Participant 4 described the use of music in the room as “patient's choice”. In addition to music, she describes her actions with the patient during procedure preparation as well:

I still do the music therapy, you know, before time-out and if the techs are getting everything ready. Then we hold hands. I don't personally pray with the patients, but I do have a coworker who will offer to pray with patients.

### **Connecting with**

The fourth theme of “connecting with” the patient is twofold. Two subthemes emerged withing this element: (a) physical presence, and (b) emotional presence.

Connecting with the patient relates to both the nurse's physical presence in the procedure suite and the ability of the nurse to establish an emotional connection. [Caring is] being supportive and trying to put yourself in that position. I think being mindful of what they are feeling and what is going on with them. Always have your focus on that patient, (Participant 3).

### *Physical Presence*

Ideally, being within view of the patient at a distance where communication and interaction is feasible. One participant shared how she explains her physical presence during the procedure to the patient:

It's going to take time for us to prep. It's going to take time for us to do these things. I will be with you the whole time.' Just going over the plan of care and letting them know I will be there, and they can always talk to me. (Participant 6)

Prior to the procedure start, Participant 8 explained her physical position within the procedure suite stating, "I always stand right where they can see me. When they prep, like the neck, their head is turned to face me. I want them to know I'm there if they need anything." Participant 4 supports this physical closeness of the nurse during procedures as this spatiality is not an interference, rather it assists in distracting the patient from the ongoing procedure. "As long as you are not stepping in the way of anything they [IR physicians and technologists] are fine."

Participant 3 addresses the effects of physical presence on patient emotion. "I think once you get intra-procedure its more of a just being there to support the patient emotionally [if] having concerns or feel[s] anxious." She continues to discuss her presence as a method in comforting the patient:

I think any kind of comfort measures you can provide them whether it's to give them a cool rag, holding their hand, standing by them, and talking to them. You know, if we are not giving them sedation, medication is out of the picture for most procedures. But most of the time I think just being there, just talking with them

throughout and explaining things in detail so that there is nothing unexpected is the best way to treat them. (Participant 3)

Unfortunately, some cases in IR are performed under emergent conditions. These procedures are not part of the daily schedule and generally performed on the most critically ill patients. Despite the urgency of the procedure, Participant 6 exhibited the value of physical presence of the nurse:

So, if it's so emergent, I don't feel there is enough time to fully communicate everything. As you are talking, you're rushing. There's [sic] people doing things around you. It's kind of distracting but I still do my best to talk to the patient and then once they are on the table, still talk to them while the rest of the team is getting ready and doing what they need to do. A lot of the times it will be eye contact and kind of nodding. Different ways, any way that makes sense.

(Participant 6)

### ***Emotional Presence***

The emotional connected relates to calming fears and anxiety related to what Participant 8 identified as “fear of the unknown”. Participant 6 shared a similar depiction of the patient noting “they are just scared.” Participant 9 simply stated “I think once you get intra-procedure its more of a just being there to support the patient emotionally or having concerns or feel anxious.” With the patients in a vulnerable state, the sense of responsibility of the nurse is increased. In sharing her frustration with ancillary staff, Participant 1 displayed her emotional presence of being with the patient through a telephone conversation:

I am the only contact for like direct questions, and the central schedulers, they don't always communicate effectively all the things that need to be communicated like "stop taking your Eliquis five days", you know, or "are you on any blood thinners?" They don't have the education to know what to ask for or to pre-screen effectively so that's why I call the patient and make sure know they need a driver, they won't be able to drive with the sedation, and you know make sure that they can't drink coffee. Things like that, just you know, instructions.

Although the IR nurse had not met the patient in person, the patient's accessibility to her was profound as she demonstrated caring for the patient.

Participant 4 was transparent in sharing her emotional presence during cases without moderate sedation. "Being compassionate, having an open mind. It doesn't matter what the patient is going through, who they are or anything along those lines. [I'm] keeping my own bias to myself and providing the best possible interaction" (Participant 4).

### **Challenging Roles**

The fifth theme, "challenging roles", reflects struggles of responsibility the IR nurse's undertaking a multi-faceted role during procedures without sedation. Participants shared their experiences of difficulties in their roles. "I want them to be comfortable and I feel like sometimes we are causing pain, and as a nurse we don't want to cause pain. We alleviate pain," (Participant 1). Participant 7 discussed her struggles in attempting to relieve suffering while attempting to manage the procedure:

[I'm] trying to talk the patient through it. [...] Distraction. (Pauses). You know giving them an approximation of, "Ok, we've got 5 more minutes. Can you hang

in there? Ten more minutes or whatever. Can you hang in there?” Um, giving them a choice of, [...] “Do you want to stop now? I know you are not tolerating this. Do you want to get up? Do you want to stop now? We can reschedule.

Participant 9 expressed her frustrations with staffing as a nurse is not required to be present for certain procedures. “We just don’t have enough staff. We are always short staffed. Everyday.” Participant 5 described the responsibility within her role. “I do prep and recovery, [...] the sedation, [...] the work within the procedures. I do it all. I do it all (laughs). From start to finish. (Participant 5).

Participant 1 shared her experience of a complication during a procedure where she was not present in the room:

[If] I were able to be there from the beginning, I could ensure more confidence and make the patient feel more secure prior to coming in in the middle [...] and coming in when the techs are anxious and feeling like they did something wrong, and then the patient feels less confident in our ability to take care of them.

(Participant 1)

Participant 7 shared struggles of collaboration with a physician mid-procedure. The patient was undergoing a declotting of an arteriovenous dialysis graft in the upper extremity.

[...] the patient was not tolerating it and I mentioned to the doctor. “I think we need to stop. He is not tolerating it. He wants to come off the table,” and the physician would not listen to me. [...] So that has been frustrating to me. [...] they don’t get anything [medicine]. That is the only time I have really gotten mad. When the doctor doesn’t listen to you.



At times, being forthcoming with the patients and the staff is necessary to help patients through the process of completing the procedure. Participant 5 described her actions in difficult moments when patients are not tolerating the procedure well:

Sometimes I have to be very firm with [the patient]. If it's something they need to be still for that you have to be very direct, you have to be very assertive with them. Let them know [...] this is a critical moment. We're going to really need to be still with this. Some are, [...] just not going to do well as far as continuing with the procedure. Maybe they just can't handle what is happening. They are not comfortable at all. They kind of want to back out so to speak. So, in those cases, sometimes [...] we just have to throw in the towel basically. [...] Just be very direct about what may happen if we don't do this right now. (Participant 5)

### **Summary**

This chapter represented the findings of the lived experience of IR nurses caring for patients during procedures. Rich descriptions of their experience were analyzed with direct quotes from the participants. The essence of the IR nurse's lived experience emerged as five themes: (a) undertaking a multi-faceted role (b) awareness, (c) comforting (d) connecting with, and (e) challenging roles. The themes "undertaking a multi-faceted role", "awareness", and "comforting", and "connecting with" addressed the research question and first aim of the study to describe the experience of the IR nurse during the peri-procedural process in cases without sedation. Within "undertaking a multi-faceted role" the subthemes "advocating for", "leading the way", and "educating" emerged. The theme of "awareness" was twofold and addressed "self-awareness" of the nurse's own emotions and "situational awareness" to include surroundings and spatiality.

The theme “challenging roles” addressed the second aim of the study of perceived barriers to the nurse’s role. Analysis of this deeper understanding reveals the essence of the lived experience of IR nurses caring for patients undergoing a procedure without moderate sedation. Finally, compassion and empathy were over-arching emotions by all the nurses who participated in the study.

## **Chapter 5**

### **Discussion**

This purpose of this hermeneutic phenomenological study was to explore the lived experience of IR nurses caring for conscious patients undergoing a procedure without the use of sedation. This study had two specific aims. First, to describe the experience of IR nurses during the peri-procedural process in cases performed without moderate sedation. The second aim of the study was to gain an understanding of perceived barriers to the nurse's role and responsibilities in caring for conscious patients during an IR procedure. The essence of the phenomenon was revealed through analysis and the emergence of five themes and nine subthemes. In this chapter a summary of study findings and its contributions to the body of literature will be discussed. The researcher's assumptions from the start of the study will be revisited. The congruency of emerged themes with the middle range theory this study was informed by will be addressed. Implications for nursing practice and research, and limitations will also be presented.

### **Summary of Findings**

This research utilized qualitative inquiry by conducting 10 in-depth interviews with IR nurses who have experienced the phenomenon of interest. Data were collected and themes identified using tenets of the hermeneutic circle to address the research question: "What is the lived experience of IR nurses caring for conscious patients undergoing a procedure without sedation in IR?" Analysis of the transcribed interviews revealed five distinct themes: (a) undertaking a multi-faceted role (b) awareness, (c) comforting (d) connecting with, and (e) challenging roles.

For first aim of the study, to describe the experience of IR nurses during the peri-procedural process in cases performed without moderate sedation, participants articulated a rich description of their experiences in caring. As one participant shared, “Caring to me is a holistic approach. I try not to just look at the patient physically. You know why they are there, what we are treating them for. I look at them as a whole,” (Participant 8). From the participants dialogue emerged the multiple roles undertaken to facilitate the patient through a procedure without sedation. Whether as an initial telephone call with the patient or a discussion within the hospital, IR nurses educate patients from their first nurse-patient encounter. Patient anxiety increases with a forthcoming procedure and may begin, as soon as the procedure is scheduled (Musa et al., 2020). The IR nurse is at the forefront of providing patients information to decrease procedural anxiety and reduce fears associated with a procedure. Acknowledgement of the patient’s vulnerability when undergoing a procedure without sedation was characteristic of the IR nurse and evident through a vivid description of the process.

Practicing with empathy and compassion was a common assertion of all nurses interviewed. Essential to the role of the nurse is being with the patient physically and emotionally while being cognizant of the patient and work encompassing the event. Sensory perceptions are increased, and IR nurses are aware of the surroundings and the possible effects on the patients and their well-being. “Oh, I can’t imagine having to lay there awake and having a port placed. Sometimes we use the Bovie [electrocautery device] to close a vessel and the smell of burnt tissue is not pleasant at all,” (Participant 10). She continues to describe the patient’s startled gaze, “they look at you like, ‘What is that smell?’ but I just calmly let them know everything is ok and its part of the procedure.

I hold their hand if I know it's going to be a bit uncomfortable" (Participant 10). The salient connection IR nurses make with patients through verbal and non-verbal interactions significant to the caring process. As Participant 10 expressed, her presence, awareness of the situation, position to educate, and ability to provide comfort to the patient during an uncomfortable period of the procedure is a representation of the multiple roles she assumes in caring for patients undergoing IR procedures without sedation.

### **Barriers to Roles and Responsibilities**

The second aim of the study was to gain an understanding of perceived barriers to the nurse's role and responsibilities in caring for conscious patients during an IR procedure. The IR nurse's experience working directly with patients throughout the peri-procedural process established their knowledge and ideas in improving care. However, challenges to their specific roles continue to affect care.

Participant 9 shares a sentiment the nursing workforce is addressing in general "We just don't have enough nurses." Many participants described their work as important to the success of the procedure and the wellbeing of the patient. Like many of his counterparts in the study, Participant 8 emphasized the importance of time, specifically time with the patient prior to the procedure. "I wish I had more time with the patients," (Participant 8). Participant 6 synthesized, "I am only one of a handful of nurses. We basically do everything, so even though I want to talk with the patients more before the procedure, I just can't. There is just so much to do."

A thematic element found within the dialogue was the significance of "being present" during procedures. Participants shared a consensus of being "at-ease" during

procedures considered be minor as the patient is awake and no sedation is given. “Nurses don’t do the simple stuff like lines,” Participant 10. However, participants also recounted negative experiences of not “being present” while a procedure is performed in IR due to the simplicity of the case. Participant 1 frustratingly shared, “I’m coming in the middle of a procedure. If I were able to be there from the beginning [the procedure] may not have gone wrong”. Participant 4 shared their own account, “I got pulled into it [procedure] at the last minute because it didn’t require sedation”

ARIN’s position statement on nurse staffing in IR identify exceptions to the nurse’s presence during procedures. Exceptions include procedures without sedation, an intravenous line is not required, the patient has previously experienced the procedure, the procedure is performed at the patient bedside, or the cases is considered minimal risk, (ARIN, n.d.). Although not requiring nursing presence in every procedure, ARIN (n.d.) acknowledges the effect of the nurse’s presence on patient safety and care. In their own position statement on staffing, the Society of Interventional Radiology’s guidelines suggested at least one member of the IR team be a RN (Baerlocher, 2016). It is the nurse’s responsibility to provide competent, holistic care and not the prerogative of the others whether the nurse will be present during cases. This researcher postulates the lack of presence of the nurse in the procedure suite has an indirect effect on procedural complications. Without the opportunity to be present, the nurse’s ability to lead and advocate for the patient is negated.

### **Revisiting Assumptions**

Prior to undertaking this study, the researcher held four assumptions based on her background and professional experience. These four assumptions are discussed considering the findings of this study.

The first assumption was related to foresight, or a preconceived knowledge of the experience could not be suspended as biases may be subconscious. This assumption was held to be true as the researcher reflected onto this knowledge of the experience while conducting data collection and analysis. Bracketing, or setting aside, the ideas was not within the tenets of the researcher who found the practice of epoche impossible.

The second assumption of the researcher prior the start of the study was based on the collection of data. The researcher presumed interviews not performed on an in-person face-to-face format would affect the richness of qualitative data. This assumption is false as telephone interviews granted rich in-depth discussions equal to interviews completed in person or via video teleconferencing platforms. In fact, during an interview via Zoom, the participant was disconnected from the internet four times resulting in multiple unexpected pauses during the dialogue. Although all the questions in the interview guide were addressed, the researcher speculated the authenticity of the interview and if the continuous internet difficulties affected the participant's answers.

The third assumption held by the researcher was IR procedures without moderate sedation cause patients to experience pain and anxiety. This is partially true based on the participant's accounts of working with patients undergoing procedures without sedation. However, to fully address this assumption interviewing the patient directly is warranted.

The fourth and final assumption of the researcher is work-related stress is increased when nurses care for patients experiencing pain and anxiety. This assumption held partially true as patients unable to tolerate pain associated with the procedure caused varying emotions in nurses. However, other factors were associated with work-related stress including team dynamics, staffing, and the nurses innate desire to relieve suffering.

### **Dasein**

As this study was guided by the context of a hermeneutic theoretical framework, the concept of *dasein*, as described by Heidegger (2010), must be addressed. Evidence of participants actualization of their *dasein* or “being-in-the-world” was supported by the retelling of their experiences. The researcher’s *dasein* of temporally being-in-the-world, was achieved through the researcher’s attentiveness of the participants thick descriptions of their experiences (Mackey, 2005). *Dasein* in conducting this study was additionally addressed in the revisit of the researcher’s first assumption as well as in the study’s limitations. The researcher acknowledged the multiple ways of interpreting findings of this study and was open to other interpretive possibilities. The researcher’s interpretations are only one perspective.

### **Theory of Caring**

This study was informed by Swanson’s Theory of Caring (TOC). The five caring characteristics encompassing the TOC are: (a) knowing, (b) being with, (c) doing for, (d) enabling, and (e) maintaining belief (Swanson, 2015). Four themes from the study were consistent with caring characteristics in Swanson’s Theory of Caring (TOC). The four themes were: (a) assuming a multi-faceted role (b) awareness, (c) comforting, and (d) being present. Several findings of this study were consistent with the TOC.



Maintenance of belief is the foundation of caring by the nurse (Swanson 1993). It is a credence others will get through events or transitions and holding them to the highest esteem. (Andershed & Olsson, 2009; Swanson, 1993). The study's theme of "undertaking a multi-faceted role" is consistent with this characteristic of caring as within their multiple duties, IR nurses care with the idealistic view of seeing patients through their procedure. This sense of maintaining belief is never withdrawn even in the unexpected event of procedural complications. In maintaining belief, the IR nurse's "commitment to serve" is displayed (Swanson, 1993). Just as the maintenance of belief is carried throughout the event, the IR nurse continually moves between roles inspiring confidence and optimism of a successful event for the patient.

In TOC, "knowing" refers to an understanding of the condition of the patient, whose care is the central focus of the nurse. The theme of "awareness" is aligned with the TOC dimension of "knowing". In the IR nurse's situatedness within the procedure, they recognize the patient as the central focus of the event removing their own biases and assumptions. "Knowing" or an understanding of the patient and their situation allows the following dimensions of "being with", "doing for", and "enabling", to be applicable and efficacious in caring (Swanson, 1993). Participant 4 stated, "Being compassionate, having an open mind. It doesn't matter what the patient is going through, who they are or anything along those lines. [I'm] keeping my own bias to myself and providing the best possible interaction".

The remaining three caring characteristics of the TOC, "being with", "doing for", and "enabling", align with the themes of "awareness", "connecting with", "comforting", and "enabling". The caring characteristic of "being with" refers to the construction and

presence of a connection or bond, being emotionally open for the other. As shared by the participants experiences, a physical and emotional connection made through a shared awareness of self and surroundings. The theme of “comforting” aligns with the TOC dimension of “doing for” or doing for others the tasks they are unable to do for themselves. As the patient lays on the procedure table vulnerable, the nurse provides comforting measures and distractions, and anticipating the patient’s needs. The TOC caring characteristic of “enabling” encompasses the theme of “undertaking a multi-faceted role”. Within the multiple roles of the IR nurse are the responsibilities to manage complex care while communicating, educating, and advocating for the patient. The themes discovered in this research intertwined with the caring characteristics of the TOC.

**Table 3**

*Emerging Themes and Theory of Caring Characteristics*

Theme	Theory of Caring Characteristics
Undertaking a multi-faceted role	Maintaining belief
Awareness	Knowing Being with
Comforting	Knowing Doing for
Connecting with	Being with
Challenging roles	Enabling

### **Limitations of the Study**

Several limitations may have affected the outcome of the study. Although smaller sample sizes are acceptable in qualitative research, the low number of participants affect generalizability to a larger population. Similarly, most of the participants identified their race as White, making study results not generalizable to minority groups. This premise also holds true to gender as most of the participants identified as female.

Lincoln and Guba (1985) set criteria to address trustworthiness, or the level of confidence the researcher has in data and analysis. Member checking and peer-debriefing are activities utilized to enhance credibility. In member-checking, the researcher seeks feedback from participants on thematic elements discovered (Connelly, 2016; Cope, 2014). This study lacked member-checking mainly due to participant interest thus possibly affecting the trustworthiness of the study. Other methods to enhance credibility including a reflexive journal and extensive audit trail were utilized.

Reflexivity, or awareness of researcher's background and experience in the phenomenon of interest affected this research (Cope, 2014). The researcher has professional experience as an IR nurse caring for patients undergoing a procedure without sedation. Additionally, the researcher has personal experience as a patient having undergone a procedure without sedation. A subconscious bias during the interpretation of data can be inferred due to the researcher's extensive background on the subject.

Of note, the study was completed amidst a global pandemic. limiting contact and availability of participants for in person interviews. Nonetheless, the social distancing effects of the pandemic pushed this research to seek a broader scope of subjects resulting in a nationwide sample.

### **Implications for Nursing Practice**

Nursing practice may be influenced by this research as patients continually undergo medical interventions during hospitalizations. A common misconception of IR procedures is the use of general anesthesia or moderate sedation. As many IR cases are less invasive and performed with only local anesthetic while patients are awake, proper communication and education is essential to address vulnerability associated with medical procedures (Angel & Vatne, 2016, Cousley 2015, Wermstrom et al., 2016). Research may be adapted to other procedural areas or bedside nursing where minor procedures may be performed without moderate sedation. providing information on how to better serve patients who may go through the distinct experience of a procedure while awake and alert.

### **Recommendations for Future Research**

Further research aligning with the patient's perspective of being cared for will add depth and meaning to the lived experience. Addressing staffing concerns of the IR nurse is suggested by identifying characteristics of IR departments with workflow of nursing and ancillary staffing. Standardization of practices amongst IR departments across the country is lacking as departments differ in facility size and capabilities. Addressing pain and anxiety in IR procedures without sedation is recommended to gain a better understanding of the patients distress to improve care. Future research into key populations including those with language barriers, low socio-economic status, physical or cognitive impairments is suggested.

## **Conclusion**

The intent of Heideggerian phenomenology is to understand the phenomenon of interest rather than explain it and with this ideal, the researcher's experience is embedded into the interpretation (Mackey, 2005). This study addressed the lived experience of IR nurses caring for patients undergoing procedures without sedation with the intent to describe the experience and perceived barriers associated with care. This study is significant to the body of research as current studies related to IR nursing caring for patients who are not receiving sedation are severely limited. IR nurses maintain a belief their patient will successfully "get through" a procedure while awake and alert as they are with the patient physically and emotionally. IR nurses are compelled to do more beyond their responsibilities within the procedure as they practice with compassion and empathy to relieve suffering.

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## Appendix

### A Letter of Support



Via email: [cdeleon@sandiego.edu](mailto:cdeleon@sandiego.edu)

To Whom It May Concern,

June 28, 2021

On behalf of the Association for Radiologic & Imaging Nursing (ARIN), it is my privilege to offer support to Catherine De Leon in her research. ARIN was founded in 1981 as the professional organization representing nurses who practice in the diagnostic, neuro/cardiovascular, interventional, ultrasonography, computerized tomography, nuclear medicine, magnetic resonance, and radiation oncology.

We believe Ms. De Leon's study on how Interventional Radiology nurses care for patients during procedures without sedation will serve the profession and would be pleased to invite our membership to participate.

Please contact me should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "S. McIntosh", is positioned above the typed name.

Sarah McIntosh, CAE  
ARIN Executive Director  
[Sarah.mcintosh@arinursing.org](mailto:Sarah.mcintosh@arinursing.org)



## Appendix B

### Recruitment Flyer

#### Recruitment Flyer

#### Participants are needed in a Research Study:

##### *Interventional Radiology Nurses Care During Procedures Without Sedation*

- ▲ Seeking Interventional Radiology (IR) nurses with at least one year experience who have participated in caring for adults during a procedure without sedation. This is a research study being conducted by a PhD nursing candidate at the University of San Diego to look at how IR nurses care for patients during procedures while they are awake and conscious.

Participation involves a face-to-face interview (remotely via video or in-person) or a telephone interview and answering a questionnaire. Participation takes about one hour in total to complete. Participants will receive a \$25 Amazon gift card. Please contact Catherine De Leon at (619) 777-6631 for more information or email [cdeleon@sandiego.edu](mailto:cdeleon@sandiego.edu).

## Appendix C

### Interview Guide

#### Interview Guide

##### Questions

1. Tell me a little about yourself and your background in nursing.
2. Tell me about your experience in caring for patients who do not receive sedation during their procedure.
3. How does your nursing practice differ when caring for a patient undergoing a procedure without sedation versus a procedure with sedation?
4. Tell me what you do when a patient expresses a negative response during a procedure without sedation.
5. What does “caring” mean to you?
6. What emotions do you feel during these types of procedures?

##### Probes

- Tell me more.
- Please explain/clarify...?
- What do you mean by...?
- How do you feel when...?

## Appendix D

### Demographic Data Questionnaire

#### Demographic Data Questionnaire

1. What is your age? \_\_\_\_\_
2. What gender do you identify with? \_\_\_\_\_
3. What is your race? (Select all that apply.)
  - \_\_\_\_\_ American Indian or Alaska Native
  - \_\_\_\_\_ Asian
  - \_\_\_\_\_ Black or African American
  - \_\_\_\_\_ Hispanic or Latinx
  - \_\_\_\_\_ Native Hawaiian or Other Pacific Islander
  - \_\_\_\_\_ White
4. What is the highest degree or level of education you completed?
  - \_\_\_\_\_ Nursing diploma
  - \_\_\_\_\_ Associate degree
  - \_\_\_\_\_ Bachelor's degree
  - \_\_\_\_\_ Master's degree
  - \_\_\_\_\_ Doctoral degree
5. How many years have you been a Registered Nurse? \_\_\_\_\_
6. How many years of nursing experience do you have in IR? \_\_\_\_\_
7. What areas of nursing have you worked in? \_\_\_\_\_
8. Do you hold any nursing specialty certifications? \_\_\_\_\_
9. In what type of facility are you employed?
  - \_\_\_\_\_ Acute care hospital
  - \_\_\_\_\_ Outpatient surgical center
  - \_\_\_\_\_ Other: \_\_\_\_\_
10. What is your employment status?
  - \_\_\_\_\_ Full-time
  - \_\_\_\_\_ Part-time
  - \_\_\_\_\_ Per diem
  - \_\_\_\_\_ Other: \_\_\_\_\_

## Appendix E

### USD IRB



Jul 20, 2021 11:03:38 AM PDT

Catherine De Leon  
Hahn School of Nursing & Health Science

Re: Expedited - Initial - IRB-2021-395, The Lived Experience of Caring for Conscious Patients During Interventional Radiology Procedures Without Sedation

Dear Catherine De Leon:

The Institutional Review Board has rendered the decision below for IRB-2021-395, The Lived Experience of Caring for Conscious Patients During Interventional Radiology Procedures Without Sedation.

Decision: Approved

Selected Category: 7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Findings:  
Research Notes:  
Internal Notes:

*The USD IRB requires annual renewal of all active studies reviewed and approved by the IRB. Please submit an application for renewal prior to the annual anniversary date of initial study approval. If an application for renewal is not received, the study will be administratively closed.*

*Note: We send IRB correspondence regarding student research to the faculty advisor, who bears the ultimate responsibility for the conduct of the research. We request that the faculty advisor share this correspondence with the student researcher.*

*The next deadline for submitting project proposals to the Provost's Office for full review is N/A. You may submit a project proposal for expedited or exempt review at any time.*

Sincerely,

Eileen K. Fry-Bowers, PhD, JD  
Administrator, Institutional Review Board

**Office of the Vice President and Provost**  
**Hughes Administration Center, Room 214**  
**5998 Alcalá Park, San Diego, CA 92110-2492**  
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