

HOSPITAL GOWNS IN THE HEALTH CARE SYSTEM: A STUDY EXPLORING
WHETHER THE HOSPITAL GOWN PRESERVES A PATIENT'S DIGNITY,
MODESTY, AND COMFORT

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In Partial Fulfillment
of the Requirements for the Degree
Master of Arts and Science

by
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The undersigned, appointed by the dean of the Graduate School, have examined the thesis entitled

HOSPITAL GOWNS IN THE HEALTH CARE SYSTEM: A STUDY
EXPLORING WHETHER THE HOSPITAL GOWN PRESERVES A PATIENT'S
DIGNITY, MODESTY, AND COMFORT

presented by Ashten Lorts,

a candidate for the degree of master of science, and hereby certify that, in their opinion, it is worthy of acceptance.

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DEDICATION

I would like to dedicate my research to my grandmother, Judy Lewis. She was a thoughtful and amazing lady during her time on earth. My grandma was a hard-worker and helped take care of me growing up. She always wanted me to be my best possible self in every endeavor. My grandma was also a huge inspiration to me when choosing my research topic of interest. A little over a year ago, she passed away due to cancer. As my grandma was undergoing treatment, she would be in and out of the hospital. During her stay, she would have to wear a hospital gown and would feel uncomfortable. Due to this, I wanted to find a way to help ease elderly patients' experiences with the garment during difficult times in their lives.

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ABSTRACT

Over the years, hospital gowns have become accepted as the standard attire worn by patients in healthcare settings, especially in hospitals. The need for hospital gowns is still present in today’s medicine, but new medical practices and patients’ preferences may lead to gown modifications. Therefore, this study aimed to discover how patients perceive satisfaction when wearing and using a hospital gown during medical intervention. A qualitative research method was used for this research study to determine whether the patients’ preferences of comfort, modesty, and dignity regarding the hospital gown are met while maintaining the functionality of the gown for healthcare providers. Overall, the patients viewed the hospital gown as an unpleasant medical necessity that the patient had to endure as a part of the outpatient or inpatient experience. The patients were willing to endure the unpleasant experiences because they believed the gown was a medical necessity. Further, the data supports the finding that patients were willing to endure the use of the gown even though the hospital gown was described as oversized, exposing, and self-conscious. Based on the results, the data support the need for a redesign using the guiding principles of the FEA Consumer Needs Model and LCPT. Many patients have even suggested ways to make the gown more patient-centered. For the patients, this study acts to represent their opinions on a garment that has been widely

used for many centuries. The research helps healthcare providers understand how a patient feels when donning a hospital gown.

Chapter 1: Introduction

Chapter 1 contains the following sections: (a) background of the study, (b) purpose of the study, (c) significance of the study, (d) definitions of key terms, and (e) organization of the study.

Background of the Study

When imagining a hospital gown, people tend to conjure an image of a used oversized t-shirt with an open back and tie string closures. However, while imagining the hospital gown, very few individuals have favorable emotions associated with the garment. The research study examines the current design of hospital gowns and patients' satisfaction with hospital gowns.

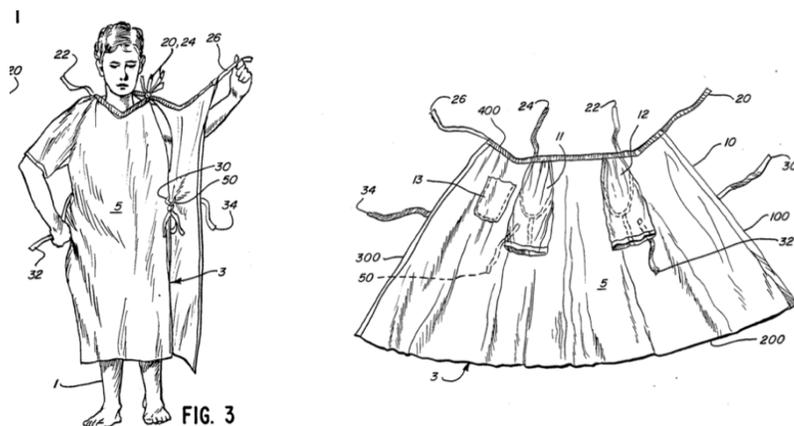
Hospital gowns are accepted as the standard attire worn by patients in healthcare settings, especially hospitals. The current version of the hospital gown design incorporates a one-size-fits-all dress with an opening at the center back. The gown also has at least two string tie closures at the back opening. The illustration of a hospital gown design is shown in Figure 1. According to Sprigg's United States Patent (1986), the hospital gown is described as the following:

A hospital gown comprising a substantially quadrilaterally shaped unitary body portion, adapted to be wrapped around a patient's torso, having an inner, body-contacting surface, an outer surface, an upper body-contacting surface, an outer surface, an upper edge, first and second longitudinally extending, opposing side edges, and a lower edge; sleeves extending from the said outer surface of the said body portion, providing communication with said inner, body-contacting surface

and adapted for placement of said patient's arms therethrough and at least two non-metallic, elongate securing means (p. 1).

Figure 1.1

Illustration of the Hospital Gown



Note. Figure 1 was taken from the United States Patent Number 4,622,699 (Spriggs, 1986).

A version of the hospital gown patients use today has been around for at least a hundred years (“Who Invented the Hospital Gown?”, 2020). Separate garments worn by patients were even used as early as the fourteenth century and resembled long nightshirts (Lucas & Dellasega, 2020a). More recently, healthcare providers began using hospital gowns during routine care to help reduce the spread of infection, encourage and help patient hygiene, and identify the patient within the healthcare setting (Lucas & Dellasega, 2020a). The need for hospital gowns is still present in today’s medicine, but new medical practices may lead to gown modifications. However, little has been done since the 1920s to modify or change hospital gowns (Jankovska & Park, 2019).

The current hospital gowns were meant for outdated medical practices where patients were less ambulatory during their care. With current medical practices promoting

ambulation or walking during the recovery process, the current hospital gown design overexposes the patient (Lucas & Dellasega, 2020a). In addition, the hospital gown is ill-fitting and can harm patients when they are tasked with performing daily care activities or medical tasks (Lucas & Dellasega, 2020a).

Interestingly, to further stigmatize the hospital gown in the eyes of patients and healthcare providers, the hospital gown is often compared to a “prison-like” garment. This derogative label is used because the process of exchanging one’s clothing for a hospital gown when entering a hospital is like prisoners forfeiting their clothing when entering prison (Lucas & Dellasega, 2020a). However, where prison garments have standard minimum regulations, hospital gowns have none (Lucas & Dellasega, 2020a). Not surprisingly, prisoners find similar dissatisfaction with their uniforms as patients with hospital gowns, requesting modesty, better fit, and improved color options (Lucas & Dellasega, 2020a). It appears that, as a society, we have accepted that wearing a hospital gown does not require minimum safety and aesthetic standards. Therefore, the design of the hospital gown has been disregarded for decades. Thus, improvements to the hospital gown to better satisfy patients are necessary.

Purpose of the Study

The purpose of the research study is to discover how hospital gowns can preserve patients’ dignity, modesty, and comfort while maintaining functionality for healthcare providers. To achieve this objective, the functional, expressive, and aesthetic (FEA) consumer needs model and the life course perspective theory (LCPT) will be used as the guiding theoretical frameworks for this study and will be discussed in further detail in Chapter 2.

Significance of the Study

As previously stated, the hospital gown has not been significantly improved in a hundred years. Many patients are also not happy with the current design of the hospital gown widely used. The hospital gown is also known to hinder care provided by healthcare providers. The significance of the research study is to contribute to two main areas: patients and healthcare providers.

The research study can benefit patients wearing the hospital gown by giving the patient a voice. For the patients, this study acts to represent their opinions on a garment that has been widely used for many decades. The patients can comment on the fit of the hospital gown, how the hospital gown makes them feel, and ways to improve the hospital gown. Overall, the patients, through the research study, will be allowed to voice their wants and needs to help better improve future designs of the hospital gown.

The research study can benefit healthcare providers by understanding patients' preferences towards the garment. The research helps healthcare providers understand how patients feel when donning a hospital gown. By understanding how the patient feels, the healthcare provider will be able to improve their level of care towards the patient. The healthcare provider will also be able to use better judgement when understanding if the use of a gown outweighs the cost of the patient's emotional and physical discomfort.

Lastly, the researcher will be able to use the study to understand and suggest ways to improve the hospital gowns. The suggestions will benefit the hospital gown manufacturers to find a way to produce a hospital gown based on patients' preferences. It will also allow the manufacturers options on how a simple change can improve the patient's experience while not increasing the cost of the hospital gown tremendously.

Definitions of Key Terms

Below is a list of definitions of key terms used in the study.

Table 1.1

Definition of Key Terms

Aging	Degenerative changes occur in all living things (Shahri, 2011). Therefore, the research study classified an aging person as an older adult 65 years or older.
Comfort	“A state or situation in which you are relaxed and do not have any physically unpleasant feelings caused by pain, heat, cold, etc. or a state or feeling of being less worried, upset, frightened, etc., during a time of trouble or emotional pain” (Merriam-Webster, n.d.)
Dignity	“The quality or state of being worthy, honored, or esteemed. Formal reserve or seriousness of manner, appearance, or language” (Merriam-Webster, n.d.).
Functional, Expressive, and Aesthetic (FEA) Consumer Needs Model	The model assists with fixing design problems, either function or fashion-oriented, so the overall design incorporates the user's needs within their cultural context (Lamb & Kallal, 1992). The model helps enable design solutions.
Healthcare Provider	A person or company that provides medical services or care to patients (Davis, 2020). For the research study, a

	healthcare provider will include any medical provider who works in a hospital – doctors, nurses, technicians, etc.
Hospital Gown	The garment is a one size fits all dress with an opening at the center back used by patients for healthcare provider’s advantage in health care settings (hospital, doctor’s office, etc.) (Spriggs, 1986). Examples of the garment are shown in Figure 1 and Figure 2.
Inpatient	A person is admitted to the hospital for a long-term overnight stay (St. George’s University, 2019).
Life Course Perspective Theory	The theory helps explain the aging stages of life in individuals in different areas of their health (mental, physical, and social) ("Life Course Perspective," 2011).
Modesty	“The quality of proper or suitable dress by the person’s standards” (Merriam-Webster, n.d.)
Outpatient	A person that does not need hospitalization or monitoring for an extended period (St. George's University, 2019).
Patient	“An individual awaiting or under medical care and treatment” (Merriam-Webster, n.d). Persons seek medical help from a healthcare provider in a health care setting (hospital, doctor’s office, etc.).
Patient-Centered Care	Healthcare providers consider the patient’s desire for information and participation in their healthcare decision-making (Stewart, 2001).

Patient Satisfaction	An attitude based on specific information gathered by a patient – belief strength and attribute evaluations (Lidner-Pelz, 1982). Lidner-Pelz (1982) stated that patient satisfaction is “positive evaluations of distinct dimensions of the health care” (p. 580)
Self-Esteem	“A confidence and satisfaction in oneself” (Merriam-Webster, n.d.)

Organization of the Study

The thesis is organized into five chapters. Chapter 1 presents the introduction and the reasoning behind the research. Chapter 2 presents information outlining who is a patient, hospital gown improvements, and theoretical framework. Chapter 3 discusses the research methods, sample selection, recruitment, and data analysis. Chapter 4 presents the research findings and major themes. Finally, Chapter 5 summarizes the findings and concludes the study with a discussion of future recommendations to improve the current hospital gown based on patient preferences.

Chapter 2: Literature Review

Chapter 2 contains the following sections: (a) the concept of aging, (b) patients and patient-centered care, (c) hospital gown innovation, and (d) theoretical framework.

The Concept of Aging

People live longer today due to advances in education, technology, medicine, food distribution, and sanitary conditions (Chalise, 2019). However, they are not necessarily experiencing a quality of life as they age (Chalise, 2019). Some older adults remain independent, healthy, and socially active, while others battle illness and immobility (Chalise, 2019).

Aging is a complex concept defined as degenerative changes occurring in all living things (Shahri, 2011). Chalise (2019) posits that aging is categorized into three stages (a) growth and development, (b) maturation, and (c) senescence. Growth and development include infancy, while maturation encompasses the teenage and young adult years (Chalise, 2019). Senescence is derived from the Latin word “Senescere,” meaning to grow old (Shari, 2011). According to Shari (2011), senescence was used in scientific texts as a phase that ends in death. The senescence stage incorporates everyone after the age of 30 (Chalise, 2019). Within the senescence stage, Chalise (2019) segregates aging into four categories (a) young-old (65-74 years), (b) middle old (75-84 years), (c) old-old (85+ years), and (d) centenarians (100+). Therefore, senescence includes a large majority of the population (Chalise, 2019).

Chalise (2019) further categorizes aging by identifying the types of aging (a) chronological, (b) biological, (c) psychological, (d) social, and (e) functional.

Chronological aging is the most common way to view aging. It is the number of years a

person has lived. Biological aging, also known as physical aging, deals with the decline of cells over time. This means organs are less likely to function correctly or as quickly. Psychological aging consists of changes in memory, learning, intelligence, and coping. Social aging indicates changes in roles and relationships. For example, a mother becomes a grandmother. Lastly, functional aging is correlated with how people are aging compared to others their age (Chalise, 2019).

While most people will experience each type of aging, they will experience each type differently. Therefore, the aging process will have different outcomes for each person. According to Wiederhold, Riva, and Graffigna (2013), by 2025, 1.2 billion people worldwide will be sixty years or older. Thus, due to the rapid growth of the aging population, the researcher chose to focus this study on the aging population of 65+.

As this study explores patient satisfaction with hospital gowns, it is necessary to place the 65+ population into the context of the healthcare system. As one ages, their engagement with the healthcare system increases (Center for Health Workforce Studies, 2006). It is estimated that the aging population engages with the healthcare system three times as frequently as those 45 to 64 years old (Mattison, 2021). Aging adults represent forty percent of hospitalizations, with the average inpatient stay of 5.2 days (Mattison, 2021). To meet the needs of this growing population, healthcare organizations should take a more critical role in improving the health, well-being, and patient satisfaction of their patients. One way to support improved health, well-being, and patient satisfaction among the aging population is implementing patient-centered care (Wiederhold et al., 2013).

Patients and Patient-Centered Care

When humans contract an illness, break a bone, or experience various other medical issues, they seek professional medical help. This help may come from a primary care provider's office, urgent care, or the emergency room. According to the Centers for Disease Control and Prevention, as of 2018, 130 million people will visit the Emergency Department annually, and 16.2 million of those visits will result in hospital admissions (2021). During the person's visit to the health care setting, the provider will refer to them as a patient. A healthcare provider is a person or company that provides medical services or care to patients (Davis, 2020). For the research study, a healthcare provider will include any medical provider who works in a hospital – doctors, nurses, technicians, etc. A patient is defined as “an individual awaiting or under medical care and treatment” (Merriam-Webster, n.d.). A patient can either be classified as inpatient or outpatient.

Inpatient

An inpatient is admitted to the hospital for a long-term overnight stay (St. George's University, 2019). The patient's stay can last from forty-eight hours to weeks. An inpatient remains in the hospital, so healthcare providers can easily monitor them. The inpatient will interact with many healthcare providers but primarily with specialized physicians (St. George's University, 2019). Healthcare situations that would cause a person to be classified as inpatient include surgeries, serious illness, delivering a baby, and rehabilitation (St. George's University, 2019).

Outpatient

An outpatient refers to a person who does not need hospitalization or monitoring for an extended period (St. George's University, 2019). Typically, an outpatient will seek

medical care and be in a health care environment for less than twenty-four hours. The outpatient classification relates to primary care doctor visits and emergency room visits (St. George's University, 2019). Health care situations that would classify a person as an outpatient include imaging (x-rays or MRIs), lab tests, minor surgeries, colonoscopies, mammograms, consultations or follow-ups, and chemotherapy (St. George's University, 2019). Recently, there has been a rise in outpatient care due to inpatient care costs and medical advances (Davis & Russell, 1972). Mull et al. (2017) state that 60-80% of surgeries are now performed as outpatient care.

While patients are typically classified as either inpatient or outpatient, there are some instances when the patient is under observation. A patient classified as under observation means the physician evaluates the patient to determine if the patient needs hospitalization (St. George's University, 2019). Patients are typically under observation for twenty-four hours until the healthcare provider decides that the patient will move to either an inpatient or outpatient status (St. George's University, 2019). For this study, inpatients and outpatients are included in the data collection as they commonly don hospital gowns as part of their interaction with a healthcare provider or facility. Further, research has indicated that inpatients and outpatients are dissatisfied with their hospital gown experience, and therefore their insight is valuable to this study (Lucas & Dellasega, 2020a).

Patient-Centered Care

Whether inpatient or outpatient, patient care is an integral part of the medical treatment process. Patient care encompasses the prevention, treatment, and management of the patient's illness (Who invented the hospital gown? 2020). Patient-centered care

involves the patient's participation, establishing a relationship between the patient and healthcare provider, and how the health care is delivered (Hearn et al., 2019). Meaning, healthcare providers consider the patient's desire for information and participation in their healthcare decision-making (Stewart, 2001). Patients are "not simply collections of organ systems requiring pharmacological intervention but present as humans with historical and cultural narratives, values, goals, concerns, and sexual and relational functioning" (Hearn et al., 2019, p. 935).

Patients no longer exist in isolation. Instead, they have become an essential part of the healthcare community, and therefore, their satisfaction has become a critical component of patient-centered care (Hearn et al., 2019). To understand their needs, patients have become leaders in their health care participation. Patient input is used as a powerful insight for healthcare providers and healthcare systems to gain patient perspective and to improve patient satisfaction (Hearn et al., 2019). By understanding and learning about health issues affecting the community, the healthcare providers can analyze the group's needs and adapt as needs develop (Hearn et al., 2019).

Evidence has shown that patient-centered care leads to increased patient satisfaction and better health outcomes (Stewart, 2001). As medicine advances and patient involvement increases, patient care becomes increasingly important in the health care system. Patient satisfaction is directly related to health care improvements for the patient (Stewart, 2001). In a study observing both clinical encounters and patient perceptions of the health care system, Stewart (2001) found that the patient's perception of patient-centered care was a strong predictor of better health outcomes. Further, the study found that patient's perception of patient-centered care also predicted efficiency of

health care services leading to fewer diagnostic tests and fewer referrals. Thus, leading to improved patient satisfaction.

Patient satisfaction can also include interaction with additional medical items such as hospital linens, especially hospital gowns. Patients expect hospitals and healthcare providers to provide high-quality care. They also want care to be provided in thoughtful ways with excellent service, including the use of first-class linens and hospital gowns (Mullen et al., 2018). Moreover, healthcare research has shown that the psychological impact of being uncomfortable in your environment can affect a patient's recovery (Gordon & Guttman, 2013). When patients are not comfortable in their environment and feel exposed, patients are less likely to ambulate, or walk (Gordon & Guttman, 2013).

Further, how the patient is viewed by caregivers and visitors directly affects their care and the patient's mental and physical health (Mullen et al., 2018). For example, patients' clothing during their engagement in a healthcare environment impacts their mental and physical health (Cho, 2006). Hospital gowns have been the default item worn by patients in health care settings. All patients, either inpatient, outpatient, or under observation, must wear a hospital gown while receiving care at a hospital. However, patient satisfaction with the hospital gown has been a predominantly negative experience (Mullen et al., 2018).

Research has shown that by upgrading the hospital gown, healthcare providers can increase the hospital staff's perception and positively affect the patients' perceptions of care (Mullen et al., 2018). Mullen et al. (2018) conducted a study that evaluated patient satisfaction with hospital linens, including hospital gowns. The study surveyed patient satisfaction with their current hospital linens and then again after they were given

upgraded hospital linens. The intervention gowns featured a side-tie closure and brighter colors (Mullen et al., 2018). Other upgrades included higher thread counts for linens and larger sized towels (Mullen et al., 2018). The study results suggested that patients rated the quality of hospital linens and gowns at 53% satisfaction, whereas, after the intervention, patients rated the quality of hospital linens and gowns at 71% satisfaction (Mullen et al., 2018). Specifically, the study's findings suggested that patient satisfaction with the hospital gown in the context of modesty increased from 49% to 61%. Within the context of comfort, patient satisfaction increased from 34% to 57%. According to the study, the increase in satisfaction was due to the hospital changing the current back tie hospital gown to a side tie hospital gown (Mullen et al., 2018). Thus, addressing the issues of modesty and comfort.

As the literature suggests, patient satisfaction can be directly connected to their perception and fit of the hospital gown, specifically related to modesty and comfort. Therefore, for this study, exploring patient satisfaction with the hospital gown can provide valuable insight into how designers can improve the gown design to increase patient satisfaction with their overall healthcare experiences.

Hospital Gown Innovation

Over the years, hospital gowns have been researched by a few academic researchers and corporate companies. The common goal was to find ways to improve the hospital gown in their healthcare system or widespread. Discussed below are a few modifications or innovations the research has developed based on perceptions of patients and what healthcare providers outlined.

Hospital Gown Modifications

Few hospital gown modifications or new hospital gown designs have been implemented in many health care settings. This is partly due to cost—traditional hospital gowns average \$2 to \$3 (Lagnado, 2009). Therefore, if modifications or redesigns increase the costs significantly, hospitals will be limited in their ability to purchase new gowns considerably if the only benefit to the patient is improved coverage to reduce modesty issues or increase ambulation during recovery (Limbong, 2018). The healthcare institution will have to make budget decisions to reduce costs in other departments for the increased cost of hospital gowns. In addition, hospitals that have implemented new gown innovations or designs have only done so in certain hospital areas. For example, the Methodist Hospital in St. Louis Park and three other Minneapolis-based Allina Health Systems have implemented new gown designs (Snowbeck, 2017). The hospital gowns were implemented at these specified locations because they are a part of the Bloomington-based Health Partners who can rent the patient gowns from Health Systems Cooperative Laundries (Snowbeck, 2017). That means hospitals have room for improvement when it comes to providing patients with newly designed hospital gowns that better meet the needs of patients (Gordon & Guttman, 2013).

Several companies are working with design schools and hospitals to develop hospital gowns that meet the needs of doctors and nurses while also meeting patient satisfaction. Some companies include Carhartt, Henry Ford Hospital, Care + Wear, and Diane Von Furstenberg. One example of a gown redesign was the Model G gown developed by Carhartt and the Henry Ford Hospital. The gown was named in tribute after Henry Ford's Model T automobile (Henry Ford Health System, 2014).

The Model G hospital gown was designed as a wraparound robe that fully closes in the back and front with adjustable snaps on the front and shoulder of the gown (Henry Ford Health System, 2014). In addition, the gown uses a thicker cotton/poplin blend and features unique styles such as a double-breasted front using snaps instead of ties. Further, the gown design features contrasting colored trim and stitching for easier donning and a tailored fit. Moreover, the design maintains existing features that benefit the caregivers by allowing IVs and other medical lines (Henry Ford Health System, 2014). An example of the Henry Ford Model G hospital gown is shown in Figure 2.1. According to the Henry Ford Health System, the Model G gown was to be available to all patients by 2015 in their healthcare system. However, the Henry Ford Healthcare System has not released any new information since 2015.

Figure 2.1

Illustration of the Henry Ford Model G Hospital Gown



Note. Figure 2.1 was taken from a Daily Mail article (Associated Press & Szathmary, 2014).

Healthcare Provider Perceptions of the Hospital Gown

Healthcare providers interact daily with a patient wearing a hospital gown. The hospital gown was designed to provide the healthcare provider easy access to the patient's body to perform necessary medical tasks. The first thing medical professionals notice about the hospital gown is the visual appearance. According to Lucas and Dellasega (2020b), nurses described the gown as "drab," "one-size-fits-none," and "doll-like" (p. 56); while some healthcare providers stated, patients wearing hospital gowns appeared "sicker" and needing more help. In contrast, a patient wearing street clothes was viewed as "feeling better" and close to leaving the hospital (Lucas & Dellasega, 2020b, p. 57). Evardsson (2008) further explains that the healthcare providers are reinforcing the "sick role" with the patient by having them wear a hospital gown. This means the healthcare provider views the patient as more ill and less responsible for their care.

For some healthcare providers, the hospital gown causes them to lose sight of the patient and their identity, making them appear anonymous (Hoy et al., 2007). Healthcare providers also stated that they failed to view patients as individuals wearing hospital gowns (Lucas & Dellasega, 2020b). Instead, healthcare providers view patients wearing hospital gowns as having increased anonymity, stigmatizing their wearer, and symbolizing patients and illness (Evardsson, 2008).

Due to these first impressions, healthcare providers are more likely to negatively affect the patient due to the hospital gown. This leads to the healthcare provider feeling guilty for asking patients to wear a hospital gown (Lucas & Dellasega, 2020b). Additionally, healthcare providers have noted that the hospital gown design leads to confusion among patients as they are uncertain how to don the gown (Lucas & Dellasega,

2020b). Therefore, healthcare providers often need to demonstrate how to don the gown, leaving the patient exposed, uncomfortable, and powerless (Lucas & Dellasega, 2020b). Finally, healthcare providers have mixed feelings about the usefulness of the hospital gown during patient care. For some the multiple ties on the gown make for quick and easy access to the patient. However, difficulties outweigh the benefits as some healthcare providers feel the hospital gown can hinder their ability to deliver care (Lucas & Dellasega, 2020b).

Depending on the task, hospital gowns can make it hard for the patient to dress, causing difficulty for the healthcare provider (Lucas & Dellasega, 2020b). Further, as hospital gowns are oversized to accommodate a one-size-fits-most concept, patients are at a higher risk for falls because the garment can interfere with their mobility. For example, healthcare providers have started seeing patients struggle to manage the oversized hospital gown while walking with IV poles. Moreover, when performing abdominal exams, healthcare providers stated they must roll the patient back and forth on the bed, and the oversized nature of the hospital gown causes the gown to become tangled around the patient, causing discomfort and difficulty during the examination (Lucas & Dellasega, 2020b). Interestingly, healthcare providers have stated that there are times that their jobs would be easier and more efficient if the patient were wearing a regular t-shirt instead of a hospital gown (Lucas & Dellasega, 2020b).

Since hospital gowns were designed with the healthcare providers' needs in mind, rather than the patient's, it is critical to consider their preferences when redesigning a hospital gown (Cho, 2006). In addition, research suggests that by redesigning the hospital

gown, hospitals can increase healthcare providers' perceptions of the quality of care provided and positively impact patients' perceptions of care (Mullen et al., 2018).

Patients' Perceptions of the Hospital Gown

When patients enter the hospital, they assume they will be required to wear a hospital gown to provide convenience to the healthcare providers during treatment (Lucas & Dellasega, 2020b). A study by *Lancet* discovered that 58% of patients wore a hospital gown despite feeling it was not a medical necessity. Instead, patients believed wearing a hospital gown was more convenient for the healthcare provider and not a medical necessity (Oliver, 2020). Oliver (2020) suggests issuing hospital gowns only for legitimate reasons such as surgery or interventional procedures to offset patients' negative perception of the purpose of hospital gowns.

Comfort and Fit of the Hospital Gown. Comfort and fit are described by numerous patients as an issue when wearing hospital gowns (Lucas & Dellasega, 2020b). Research indicated that some patients would avoid having visitors during their stay in the hospital because of the humiliation of accidentally exposing one's body due to the fit of the hospital gown (Cho, 2006). According to a *Lancet* survey, 67% of patients reported that the hospital gown did not fit properly (Oliver, 2020). The most common fit issue for the hospital gown was related to the gown's neckline, back opening, and sleeves. Patients described the neckline as causing a "choking-like" experience because of the unbalanced design between the front and back of the gown (Jankovska & Part, 2019, p. 195).

The back opening also frustrated the patient, causing indecent exposure and modesty concerns (Jankovska & Park, 2019). Patients also discussed sleeve fit as a cause of concern as improperly fitting sleeves impaired movement for male patients due to the

sleeves' tightness in the shoulder area (Jankovska & Park, 2019). In addition, women were very uncomfortable walking when wearing a hospital gown as they were concerned they would expose body parts to the opposite sex (Salahuddin et al., 2021).

Patient Dignity, Self-Esteem, and Double Gowning. In addition to comfort and fit, hospital gowns can negatively impact the patient's self-esteem, identity, and dignity (Lucas & Dellasega, 2020b). *Comfort* is a state or feeling of being less worried, upset, frightened, etc., during a time of trouble or emotional pain (Merriam-Webster, n.d.). *Self-esteem* is "a confidence and satisfaction in oneself" (Merriam-Webster, n.d., para. 1); whereas dignity is "the quality or state of being worthy, honored, or esteemed" (Merriam-Webster, n.d., para. 2). According to a recent survey, 60% of patients feel self-conscious while wearing a hospital gown (Oliver, 2020). To offset this feeling, patients have taken it upon themselves to find a solution – double gowning.

Double gowning means wearing two hospital gowns, one with the opening toward the front of the body and the other with the opening toward the back of the body. Double gowning prevents exposure and modesty issues (Lucas & Dellasega, 2020b). However, double gowning is not a long-term solution to prevent exposure and improve patient's modesty issues as the practice increases cost as hospitals purchase more gowns to provide adequate stock on hand for departments. Further, double gowning causes increased laundering (Lucas & Dellasega, 2020a). However, the cost of double gowning in the long run might help the hospital purchase more patient-friendly hospital gowns.

Further, patients also suggest adding loose-fitting bottoms or pants when wearing the hospital gown. However, not every patient can participate in this option depending on the level of their medical care (Lucas & Dellasega, 2020b). While the literature suggests

the patients have developed strategies to cope with the poorly designed hospital gown, these solutions fail to provide adequate support for healthcare providers delivering health care to the patient or the patient receiving the care.

Patient Satisfaction with the Hospital Gown

Patient satisfaction is an attitude based on specific information gathered by a patient – belief strength and attribute evaluations (Lidner-Pelz, 1982). Lidner-Pelz (1982) stated that patient satisfaction is “positive evaluations of distinct dimensions of the health care” (p. 580). According to Linder-Pelz (1982, p. 578), there are ten constructs of patient satisfaction: (a) accessibility/convenience, (b) availability of resources, (c) continuity of care, (d) efficacy/outcomes of care, (e) finances, (f) humaneness, (g) information gathering, (h) information giving, (i) pleasantness of surroundings, and (j) quality/competence. The determinants of patient satisfaction are based on the patient’s perception of beliefs. Beliefs are information a person infers about an object (Linder-Pelz, 1982). According to Linder-Pelz (1982), a belief links an object to an attribute, which in turn causes an attitude towards an object. Thus, beliefs and association evaluations lead to the determination of an attitude.

According to Evarsson (2008), the hospital gown falls into the construct of (a) accessibility/convenience, (f) humaneness, and (j) quality/competence.

Accessibility/convenience and humaneness relate to the hospital gown when hospitals provide clothing for patients and the patient associates the gown with comfort, ease, and being cared for (Evarsson, 2008). However, as literature demonstrates, some patients do not associate the hospital gown with comfort. The gown's neckline, back opening, and sleeves are leading causes of discomfort for patients. The neckline causes a "choking-

like" hazard, while the back opening causes indecent exposure and modesty concerns (Jankovska & Park, 2019, p. 195). Evardsson further posited that while some patients appreciated the convenience of replacing the hospital gown when it became soiled, many others did not share the same satisfaction with the hospital gown (2008). Patient dissatisfaction with the gown falls under the humaneness, and quality/competence construct from Evardsson's (2008) research. Those patients wearing the hospital gown reported feeling depersonalized or less of a person and more patient-like (Evardsson, 2008).

Gordon and Guttman (2013) also found that the patients lacked satisfaction with the hospital gown as they felt a loss of dignity and modesty due to the open back feature, thin material, and difficult closures of the hospital gown (Gordon & Guttman, 2013). Moreover, Mullen et al. (2018) posited that patients felt dissatisfaction with the quality of the hospital gown fabric and the gown size. For example, the authors stated that longer gowns caused a tripping hazard for shorter patients. While the literature suggests that patients remain dissatisfied with the current hospital gown, there remains a dearth of literature exploring how patient dignity, modesty, and comfort impact patient satisfaction with the hospital gown. Therefore, this study aims to discover how hospital gowns can preserve patients' dignity, modesty, and comfort while maintaining functionality for healthcare providers.

Theoretical Framework

This research study used the functional, expressive, and aesthetic (FEA) consumer needs model and the life course perspective theory (LCPT) to determine if the current hospital gown is meeting patients' needs, as well as preserving patients' dignity,

modesty, and comfort while maintaining functionality for the patient and healthcare providers. By analyzing the design of the hospital gown using the FEA consumer needs model, the researcher can understand how the hospital gown can specifically meet the needs of the intended user (the patient). The LCPT allowed the researcher to analyze how a patient's interaction with a hospital gown affects them mentally, allowing the researcher to suggest future modifications or improvements.

Functional, Expressive, and Aesthetic Consumer Needs Model

Understanding consumers' needs is a crucial beginning to the garment design process (Orzada & Kallal, 2021). Lamb and Kallal (1992) developed the functional, expressive, and aesthetic (FEA) model to assist with correcting design problems, either function or fashion-oriented, and to support the inclusion of the user's needs within their cultural context overall design. Lamb and Kallal (1992) posit that the target consumer, the user, is at the center of the FEA model. Therefore, designers must develop a consumer profile to ensure the users' needs and wants are the focus of the user context.

By first identifying the users' needs and wants, the designer can establish design criteria that include functional, expressive, and aesthetic approaches. According to Lamb and Kallal (1992), the FEA model supports a user-centered focus when designing for a targeted market. While designers can target any population with their design, the FEA model assists designers by focusing on the needs and wants of a specific user, allowing the designer to advocate for certain features or values based on the users' needs or wants (Lamb & Kallal, 1992).

Within the FEA model, functional considerations relate to usefulness and effectiveness. Fit, comfort, ease of movement, and protection are examples of functional

considerations designers must consider (Lamb & Kallal, 1992). These attributes can help evaluate the usefulness of the performance and function of a garment (Cho, 2006).

Within the context of the FEA model, the hospital gown performs a functional purpose, and therefore, its features are critical to the users' satisfaction. For example, the effectiveness of the closures on a hospital gown can impact how easily a healthcare provider can access a patient's body. At the same time, the effectiveness of the closures can impact modesty for the patient.

Cultural implications also relate to the function criteria within the FEA model. Culture can act as a mediator for the user and the setting, and influence designer decisions regarding what design options are acceptable. Moreover, culture can impact the form and customary use of the garment (Lamb & Kallal, 1992). Within the healthcare system, hospitals can also be considered a community, where garments worn by patients determine the person's role within the community. For example, doctors and nurses wear scrubs, and patients wear gowns. This culture is disrupted when patients have visitors wearing casual clothing. Patients are left feeling uncomfortable when wearing the hospital gown, even though the hospital gown is culturally acceptable within the hospital community (Morton et al., 2020).

Cultural implications can also have a direct impact on specific consumer populations. Modesty in women's dress is a tenant of the Muslim culture. However, for Muslim women, the hospital gown does not allow for adequate modesty, and due to this, many women of the Muslim faith cancel doctors' visits (Associated Press, 2015). For women who feel uncomfortable exposing their bodies in public, regardless of culture, the hospital gown can cause many to feel ashamed for exposing their bodies in public

(Associated Press, 2015). For this study, modesty can play both a functional and cultural role for the user of hospital gowns. Therefore, designers must consider both the functional and cultural needs of the user (the patient) when designing hospital gowns.

Within the FEA model, expressive relates to the representational or communicative aspects of the garment between the wearer and the observer (Lamb & Kallal, 1992). Garments can provide appearance cues, causing observers to interpret and place meaning on the garment worn based on cultural context (Orzada & Kallal, 2021); for example, how the patient is viewed by the healthcare provider while wearing a hospital gown. Are they seen positively or negatively? From the patient's perspective as a user, the hospital gown may impact their feeling of autonomy (Lamb & Kallal, 1992).

Aesthetic considerations within the FEA model refer to the user's ability to feel beautiful. Design elements and principles impact the beauty of the garment and are essential when considering the aesthetic criteria of a design (Lamb & Kallal, 1992). Users engage with apparel within the context of a cultural reference of beauty, which aligns with current trends (Lamb & Kallal, 1992). Within the context of this study, an example of aesthetic consideration in the hospital gown design is how the patient feels when wearing the hospital gown and whether they are comfortable when wearing it. Primarily, the hospital gown's aesthetic has been ignored by designers (Cho, 2006). Patients often complain about how they look in the gown due to its appearance and fit (Cho, 2006). This can cause the patient to be self-conscious when wearing the gown and lead to psychological discomfort and physical discomfort (Cho, 2006). One way to address the design concerns is for the designer to advocate for patients' comfort and modesty when redesigning a hospital gown.

The FEA model integrates functional, expressive, and aesthetic design to encompass change in global, technological, business, and industry perspectives (Orzada & Kallal, 2021). Hospital gowns are the specialized dress that can influence the patient's behavior (Morton et al., 2020). For this study, the FEA model was used to understand the needs and wants of the patient as it relates to their satisfaction with the hospital gown. Further, this study used the FEA model to determine if user needs and wants were met. Utilizing the FEA model in this study allowed the researcher to provide design insight that supports a patient-centered care approach to the gown design (Lamb & Kallal, 1992).

Life Course Perspective Theory

According to the Association of University Centers on Disabilities, the life course perspective theory (LCPT) is a "multidisciplinary approach to understanding the mental, physical, and social health of individuals, which incorporates both life span and life stage concepts that determine the health trajectory" ("Life Course Perspective," 2011, p. 1). The LCPT connects the late experience to earlier life stages (Connidis & Barnett, 2019, p. 15). The different experiences an individual has throughout their lifetime can affect their success (Stowe & Cooney, 2015). Thus, different substantial experiences can shape a person's life (Starkey, 2016). One's experience during a visit to a healthcare facility or wearing a hospital gown, for example, can impact and shape their success based on how the experience made one feel.

The four main components that guide how the LCPT influences a person's life are (a) trajectories, (b) transitions, (c) turning points, and (d) timing (Connidis & Barnett, 2019). *Trajectories* are points through one's life that are influenced by social factors associated with maintaining health and persists over time (Wethington, 2005).

Transitions are a change in social roles or responsibilities (Wethington, 2005). For example, a person identifying as a patient can be in a transition in their life experience. *Turning points* are like transitions but are described as significant events that change a person's life path (Wethington, 2005). For example, a person diagnosed with a chronic disease can be at a turning point in their life. How the hospital gown affects that turning point can impact the patient positively or negatively. Lastly, *timing* is when specific exposures occur at a more vulnerable period of life and have lasting effects on a person (Wethington, 2005). For example, patients are asked to wear hospital gowns during a time of stress or discomfort due to an illness. However, requiring patients to don a hospital gown may increase their discomfort.

Elder is referred to as the “birth father” (Shanahan, 2008, p. 195) of the LCPT. “He encouraged behavioral scientists to appreciate the tangible complexities of space and time in the interactive processes of human development” (Shanahan, 2008, p. 196). As a result, Elder's research has transformed how we conceptualize problems, operationalize concepts, and interpret data (Shanahan, 2008). The LCPT developed mainly from sociology and psychology, but it is more broadly shaped by social, behavioral, and biological sciences (Elder, 1995).

The social concept of LCPT usually refers to the interrelatedness of age-graded trajectories (Elder, 1995). *Age-graded* trajectories can be work and family careers that change circumstances, future choices, or short-term transitions (Elder, 1995). Choices from early adulthood can play a significant role in later adulthood and old age (Elder, 1995). Due to human agency and self-regulation, people make choices that become building blocks for their life course (Elder, 1995). These choices can be influenced by

situations and interpretations for which the individual is engaged or the individual's life history of experience and beliefs (Elder, 1995). "Individual differences and life histories interact with changing environments to produce behavioral outcomes" (Elder, 1995, p. 110).

Even though Elder is credited with the development of the LCPT, many other authors have contributed to the development of this theory. John Laub and Robert Sampson have used the LCPT to understand criminological research to understand individuals' continuity and change in crime over time (Sampson & Laub, 2003). Jeylan Mortimer uses LCPT to research occupational careers, and Jacque Eccle understands academic motivation through the LCPT (Shanahan, 2008). Lastly, Silbereisen researched the German Reunification using the theory (Shanahan, 2008).

Elder (1995) posited that the LCPT views human development, socialization, and adaptation as lifelong processes. Therefore, the most researched areas using the LCPT include human development along history and time. Human lives are rooted in social relationships with family and friends during their life span. This is how individuals are connected to society. By locating individual connections to society during a historical time in their life course, researchers can specify the personal impact of social change (Elder, 1995).

To understand how history affected the life span, Elder (1995) studied children during the Great Depression. He focused on the implications the economic crisis had on children. The families studied turned to survival adaptations, which led the family to embrace more labor-intensive operations encompassing constructive roles for children and more burden for mothers (Elder, 1995). Due to the change in the family dynamic, the

girls became more involved with the family, whereas the boys became more independent (Elder, 1995). The loss of income also amplified the risk of family dissonance, disorder, and demoralization (Elder, 1995). Nevertheless, Elder's study did conclude that the children of these families were generally able to rise above the limitations and disadvantaged childhood (1995).

The LCPT involves aging, race, social needs and happiness, retirement, gender, and chronic disease. Coleman and Myerson conducted research using the LCPT and focused on age-aware design and inclusive design (Coleman & Myerson, 2001). Specifically, the authors conducted a study through the Royal College of Art (RCA) focusing on student designs for our future selves (Coleman & Myerson, 2001). The RCA encourages students "to think in terms of products and services that engage with aging as a natural part of the life-course" (Coleman & Myerson, 2001, p. 90). The products designed by the students include clothing that protects from impacts and abrasion, power tools, and the pedometer, and shares importance on understanding and interpreting the consumer experience (Coleman & Myerson, 2001). Further, Coleman and Myerson (2001) suggest that clothing that provides physical protection while remaining comfortable is the holy grail for the apparel industry.

Coleman and Myerson influenced Starkey's (2016) research. Starkey (2016) applied the LCPT to expand apparel design strategies for women in the boomer age cohort, positing that the fashion industry does not always acknowledge that older generations are interested in maintaining a sense of style. Starkey (2016) theorized that due to the continuous process of change and adaptation, clothing preferences need to be modified to suit the current needs and wants of boomer women (p. 25). Starkey's finding

indicated that boomer women still maintain an interest in fashion and style even as they age (Starkey, 2016). Additionally, her study found that boomer women were willing to try new or different clothing options if they were suitable to their current situation (Starkey, 2016).

Moreover, Starkey (2016) contextualizes apparel design for boomer women by stating, "The past, present, and future are all interrelated, and viewing design from a life course perspective aids in anticipating future needs [of the user]" (p. 25). Using the LCPT theory, as Starkey (2016) did with her study of boomer women, the hospital gown can also be designed with this mindset. Therefore, appropriate design features that accommodate the aging patient are critical to hospital gown design.

Starkey's research focused on boomer women and their need for style that endures time. Ethnographic evidence warrants a need for experience, strategies, and style as core functions from products that endure time (Dankl, 2013). The hospital gown has endured time but at the cost of the patient's discomfort. According to Dankl (2013), everyone should be regarded as a designer because of our life courses and experiences. When designing, products that enable an individual to age well, not in the sense of a user-friendly product (the hospital gown) but in creating a resume of a full life, is the ultimate goal (Dankl, 2013). By applying the LCPT to the hospital gown, each patient can become a designer, providing user-centered insight based on their life course to help better other individuals' life courses. Therefore, for this study, LCPT will be used as a theoretical framework to view how the life stage of the patient, when interacting with a hospital gown, may impact their life experience, either positively or negatively.

Additionally, the FEA consumer needs model is used in this study because of the significant impact of a hospital gown's design on a patient during and after their stay. The experience can either harm or help the patient depending on how their mental, physical, and social health was affected by wearing a hospital gown. Because of the significant impact hospital gowns have on patients, this study will use both the FEA consumer needs model and LCPT as the theoretical framework from which to answer the following research questions:

- RQ1: How can hospital gowns better meet patients' preferences while maintaining functionality during medical exams and procedures?
- RQ2: How can hospital gowns better preserve patients' dignity and meet the patients' degree of modesty or comfort?

Chapter 3: Method

Chapter 3 contains the following sections: (a) qualitative research, (b) sample selection, (c) recruitment, (d) data collection, (e) study recruitment, and (f) data analysis.

Qualitative Research

A qualitative research method was used for this research study as a guide to determine if patients' preferences of comfort, modesty, and dignity regarding the hospital gowns are met while maintaining the functionality for healthcare providers. The study was conducted in two phases. Phase I was a preliminary online survey using a random sampling method to participate in Phase II, semi-structured interviews.

“Research is a systematic process by which we know more about something than we did before engaging in the process” (Merriam & Tisdell, 2016, p. 5). Quantitative research mainly uses experimental approaches to determine why and predict future events, whereas qualitative researchers are interested in understanding a phenomenon (Merriam & Tisdell, 2016). According to Merriam and Tisdell (2016), qualitative research uses words as data to understand how people interpret life experiences and attribute meaning to their life experiences. There are many different methods to collect data or words from people, including interviews, observations, focus groups, narratives, notes, reports, and archives review (Ghaljaie et al., 2017). A qualitative research method was used to support the goal of this study, how hospital gowns can improve the patient experience. The study used a survey method and deployed a preliminary survey and conducted semi-structured individual interviews to gain an in-depth and contextualized understanding of patient experience with hospital gowns.

After receiving Institutional Review Board (IRB) approval, the researcher distributed a preliminary survey to establish patients' opinions of hospital gowns to guide future interview questions and help recruit interview participants. The preliminary survey was made available on social media and in person to numerous potential participants. A total of 46 individuals participated in the preliminary survey, with 33 individuals selected to complete the preliminary survey. Only 33 individuals were used because some did not qualify based on the time period of wearing the hospital gown or exiting out of the survey early. In addition, the preliminary study helped provide supplementary information for ongoing evaluation (Fernandez et al., 2021). The data collected from the preliminary survey supported the development of the interview questions for Phase II of the study.

Sample Selection

Sampling is the process of choosing a section of the population to represent the whole population. Two types of sampling include probability sampling and nonprobability sampling (Ghaljaie et al., 2017). According to Ghaljaie, Naderifar, and Goli (2017), nonprobability sampling is most often used in qualitative research. Nonprobability sampling is used most often due to the method focusing on small samples and examining real life phenomenon (Taherdoost, 2016). For nonprobability sampling, only a clear justification is needed for the inclusion of certain individuals rather than others (Taherdoost, 2016).

Purposeful sampling is a type of non-probability sample and is used for “identification and selection of information rich cases related to the phenomenon of interest” (Palinkas et al., 2013, p. 533). Purposeful sampling is used in a way to identify what is typical, normal, and average (Merriam & Tisdell, 2016). With individual

interviews, purposeful sampling should be used to select individuals who understand the most about a particular topic (Merriam & Tisdell, 2016). This method of sampling is also used more specifically with marginalized populations (Ruel et al., 2016). To find marginalized individuals who understand and know more about wearing patient hospital gowns, the researcher used criterion sampling.

For this study, patients are considered a marginalized population because they are asked to wear a hospital gown for a medical purpose and are placed in private and uncomfortable situations within the medical system. The Privacy Rule included in the Health Insurance Portability and Accountability Act of 1996 (HIPAA) safeguards “individually identifiable health information held or transmitted by a covered entity or its business associate, in any form or media, whether electronic, paper, or oral” (Office for Civil Rights, 2013, para. 14).

Further, the researcher used criterion sampling due to the difficulty of recruiting patients who have been in the hospital and worn a hospital gown. The method is also deployed to find participants who qualify for the research study. Criterion sampling is a method of purposeful sampling (Yin, 1994). This method is used often to build a complete understanding of research that meets certain pre-determined conditions (Suri, 2011). Criterion sampling is used for quality assurance when picking all cases that meet some benchmark (Yin, 1994). It states clear inclusion or exclusion measures based on the research specifications (Suri, 2011).

Participant criteria for the study included participants who were (a) 18 years or older and (b) have worn a hospital gown in the last 12 months of completing the survey, either as an inpatient or an outpatient. The second criterion was selected because patients

who have worn a hospital gown within the last 12 months are typically able to recall their recent experience more quickly.

Recruitment

Recruitment is a way “to seek to enroll” prospective individuals (Merriam Webster, n.d., para. 1d). For the research study, the researcher recruited from a specific sample selection. To find the sample selection needed, the researcher used a two-phased recruitment process.

Phase I: Preliminary Survey

For recruitment for Phase I of the study, the researcher developed a recruitment flyer that was distributed by the researcher in their local communities. The flyer was distributed in senior centers in two mid-size midwestern cities. The senior centers chosen were based on location to the researcher and who was willing to post and circulate the flyer within the community center. One senior center and one retirement community were used to distribute the flyer.

In addition, the researcher distributed the flyer online using social media platforms, Facebook and LinkedIn. Social media platforms help identify, obtain background information on, and establish contact with participants (Dosek, 2021). Social media offers speed, efficiency, and the ability to target and attract specific candidates in the recruitment process (Broughton et al., 2013, p. 1). According to Dosek (2021), Facebook especially helps identify informants while learning local context, contact possible participants and verify their responses, and ask for potential participants. While the sample population of 65+ are not high users of Facebook or LinkedIn, the researcher

was also using healthcare professionals as a means to distribute the flyer, and this population is more likely to use these social media platforms.

Phase II: Interview

During Phase II, the researcher recruited participants through email and phone who completed the survey and indicated interest in being interviewed. In addition, to find additional participants, the researcher asked friends and family to share their recruitment flyer with others who met the study criterion. The IRB-approved recruitment scripts can be found in Appendix B and Appendix C.

Data Collection

The researcher used data source, method, and theory triangulation to provide deep insight into understanding patient satisfaction with hospital gowns. A preliminary survey and semi-structured interviews were conducted in two different phases of the study. The University of Missouri IRB approval was granted before the collection of data and required only verbal consent to participate in the study. Verbal consent was given before recruiting study participants. The research study's IRB project number is 2051188, titled Hospital Gowns and Patient Satisfaction. The study was approved on March 8, 2021, and will expire on March 8, 2023. The verbal consent script used for the interview with participants is provided in Appendix A.

Phase I: Preliminary Survey

Phase I was a preliminary stage of the study. During this stage, the researcher deployed a survey to investigate patients' satisfaction towards the hospital gown and to help develop interview questions for Phase II of the research study. Surveys are proven to be a "highly effective method of measurement in social and behavioral science research"

(Ruel et al., 2016, p. 2). The method is a vital tool in academia, government, and the private sector (Ruel et al., 2016). Surveys are useful to gather information by individuals in many different fields or positions (Ruel et al., 2016).

During Phase I, a survey was deployed to understand current patient satisfaction and recruit participants for Phase II. The preliminary survey results provided the baseline for the semi-structured interview questions. Using the survey results as a baseline for the interview questions required that the data be analyzed to understand how patients felt towards the hospital gown. Further, the preliminary survey was used as a method to recruit the target group for the study.

The survey included 23 questions (see Appendix D for a list of the questions) and took no more than 20 minutes to complete. Qualtrics was used to distribute the survey. The researcher used social media platforms (Facebook and LinkedIn) and flyer advertisement to distribute the survey and recruit participants. Social media platforms help identify, obtain background information on, and establish contact with participants (Dosek, 2021).

Phase II: Semi-Structured Interviews

Phase II of the research study included the interview process. Participants in this phase were chosen from the preliminary survey or referral from friends and family based on a different set of criteria. The criterion included participants who were (a) 65 years or older, (b) resided in central Missouri, and (c) have worn a hospital gown in the last 12 months of completing the survey, either as an inpatient or an outpatient.

The goal of the study was to interview 12-15 participants. According to research, this sample size is justified when:

the study aim is narrow, if the combination of participants is highly specific for the study aim, if it is supported by established theory, if the interview dialogue is strong, and if the analysis included longitudinal in-depth exploration of narratives or discourse detail. (Malterud et al., 2016, p. 1756)

Therefore, this study supports the use of a small sample size, as the aim of the study is highly specific in the following areas (a) patient satisfaction with hospital gowns, (b) patients who have previously visited health care settings, (c) the study is supported by established theory (LCPT and FEA consumer needs model), and (d) the study utilizes strong and in-depth interview dialogue (semi-structured interviews).

Interviews were held by phone except for two participants who were interviewed in person due to hearing impairments that made it difficult to hear over the phone. The interviews lasted 10 minutes (see Appendix E for a list of interview questions). All interviews were audiotaped and then transcribed, word for word, using the transcription service Rev. Rev is used by many customers to import phone calls, academic research, video production, and content marketing securely (Rev, n.d.). The company makes sure all of the audio recorded files are private and protected from unauthorized access (Rev, n.d.). Lastly, employees of Rev are required to sign NDAs and confidentiality agreements, as well as work on secure platforms (Rev, n.d.).

Data Analysis

Data analysis is a crucial part of the research method. The data analyzed can either be numeric or text information (Creswell & Creswell, 2018). From the analysis, researchers can make interpretations of numerical results or statistical results and interpret themes from text information (Creswell & Creswell, 2018). The researcher used

two types of data analysis. First, the researcher used descriptive statistics to interpret Phase I, and secondly, the researcher used coding and theme development to interpret Phase II.

Phase I: Descriptive Statistics

Researchers can use statistics to organize, summarize, and analyze measurements or data (Privitera, 2019). Descriptive statistics is employed to “quantify the behaviors research measures” (2019, p. 5). The method can help researchers summarize or understand data that describes a particular phenomenon (Privitera, 2019). More specifically, descriptive statistics is used to clearly present and interpret data for individual measurements (Privitera, 2019). By analyzing the data using this method, the researcher was able to quantify and summarize the phenomenon briefly – satisfaction and comfort levels of patient hospital gowns.

In qualitative studies, descriptive statistics can be used to describe frequencies, percentages, and rates (Perez-Vicente & Ruiz, 2009). Qualitative variables in descriptive statistics measure qualities (Perez-Vicente & Ruiz, 2009). Using descriptive statistics, the researcher was able to gauge how well the individuals perceived the hospital gown. The survey also provided open-ended questions to allow the participants to provide further explanation as to their satisfaction with the hospital gown. The open-ended questions allowed the researcher to gather in-depth insight to the level of satisfaction indicated by each participant.

Even further, qualitative description is commonly used in qualitative research to describe healthcare and nursing-related phenomena (Kim et al., 2016). This method of analysis is important in discovering the who, what, and where of experiences from

individuals (Kim et al., 2016). According to Kim, Sefcik, and Bradway (2016), qualitative description is known to help to find a straight description of a phenomenon by refining surveys.

Through the analysis of the information summarized, the researcher was able to build interview questions for Phase II. The researcher used the descriptive statistics and open-ended question comments provided to help find common premises or topics to discuss with the interview participants in Phase II. Overall, the descriptive statistics method was used to interpret a preliminary survey to help the researcher understand a baseline for patient satisfaction and comfort levels of a hospital gown.

Phase II: Coding and Theme Development

Researchers establish a problem and select a sample to address the problem, but they do not know what will be discovered. The outcome is shaped by the data collected and analysis that conveys the process (Merriam & Tisdell, 2016). According to Merriam and Tisdell, data collection and analysis is a continuous process (2016). The process will ideally conclude when saturation is reached. Saturation in qualitative research refers to “when gathering fresh data no longer sparks new insights” (Creswell & Creswell, 2018, p. 186). When saturation is reached, the researcher will have collected sufficient data. Once saturation has been reached, the official coding and theme development process begins.

Defined by Merriam and Tisdell, coding is assigning a type of shorthand to different aspects of the data so the researcher can easily retrieve specific portions of data (2016). The codes can be words, letters, numbers, phrases, colors, or combinations of these (Merriam & Tisdell, 2016, p. 199). The identifying notes are needed to help analyze

and write up the research findings. The goal of coding, through data analysis, is to find answers to the study's research queries.

Answers are also known as categories, themes, or findings. Themes “can be a pattern, a finding, or an answer to a research question” (Merriam & Tisdell, 2016, p. 204). As the researcher conducts interviews, the data can be analyzed to find preliminary themes. However, once all the data is collected, there is a time of intensive analysis that consists of finding potential themes (Merriam & Tisdell, 2016). As the researcher is reviewing the coded transcripts, the patterns or regularities when sorted will develop into themes (Merriam & Tisdell, 2016). According to Merriam and Tisdell (2016), these themes become conceptual elements that occur across numerous individual examples. Overall, the themes should have a life of their own, separate from the data collected (Merriam & Tisdell, 2016).

The researcher, after the transcripts were transcribed, read through the interviews of the participants five times each. The first read was to familiarize the researcher with the interview content. After the initial read, the researcher started coding transcripts pertaining to the FEA consumer needs model and the LCPT. The researcher coded using a different colored highlighter for each conceptual theory. Once the transcripts were color coded, the researcher went through and underlined phrases or words that connected to the FEA model or the LCPT theory, or that were frequently used. Next, the researcher went back through and circled repeating words or potential themes found in the transcript. Lastly, the researcher starred words and phrases in the transcript that helped establish overarching themes. The researcher was able to find overarching themes from the

findings after categorizing the data based on the guiding theoretical framework. The themes overall evolved from the overlapping categories coded by the researcher.

Chapter 4: Findings

Chapter 4 contains the findings for the following sections: (a) Phase I: Preliminary Survey and (b) Phase II: Semi-Structured Interviews.

Phase I: Preliminary Survey

The preliminary survey was completed by 33 individuals ranging in various age groups. All the individuals who completed the preliminary survey identified as either male or female. Of the 33 individuals, seven chose not to list their demographic information. Table 4.1, below, lists the demographic information for the preliminary survey.

Table 4.1

Descriptive Statistics of Preliminary Survey Demographic Variables

Variables	Frequency	Percent
Age		
18 – 30	11	42.31%
30 – 50	5	19.23%
50 - 65	5	19.23%
65+	5	19.23%
Gender		
Female	21	80.77%
Male	5	19.23%

When analyzing the preliminary survey, the researcher found interesting results regarding patient satisfaction of the hospital gown. The most interesting finding was that

53% of the individuals surveyed found the hospital gown user friendly, whereas 47% of the individuals surveyed did not find the hospital gown user friendly. Based on the extensive literature review, the researcher found the majority of patients or individuals viewed hospital gowns as not user friendly. The main reasons the patients viewed the hospital gown as user friendly was due to functionality of the tie closures, oversized nature of the gown, and ease of medical procedures. For example, one of the individuals surveyed wrote, "One of the procedures was to use medical wipes over all of my torso. It was easy to do with the gown provided." Whereas another individual stated, "It was a little big but it did have ties and I was able to tie it without any problem." Lastly, another patient claimed, "It was pretied and designed with enough space to slip over the head."

On the other hand, the 47% who believed the gown not to be user friendly was due to functionality of the tie closures, overall fit of the gown, and modesty issues. For example, a previous patient stated, "It was hard to tie. The gowns seem very revealing." Another individual described the gown as "shaped like an article of clothing, more like a tablecloth with arm/head holes and strings on the back". Lastly, a patient also claimed the hospital gown was "one size and very big, I wasn't sure how to wrap it around my body securely for my modesty."

As the preliminary survey progressed, half of the patients reported needing help with donning the hospital gown. The main individuals who helped the previous patient don the hospital gown included their parent, significant other or life partner, or healthcare provider (i.e., nurse or technician). The main reasons reported for not being able to put on the patient gown by themselves was due to tie closures and certain types of medical conditions. For example, "My mom tied the gown at the back for me because I couldn't

reach it.” Another statement written by a previous patient was, “I had just given birth. A nurse helped me.”

Next, the individuals completing the survey were asked if they ever participated in double gowning. Only 22% of patients claimed to have double gowned, and of those, 50% were male and 50% were female; whereas 78% of previous patients had not chosen to double gown. The main reasons behind the individual choosing to not double gown included not being offered and medical conditions. For example, one patient chose to double gown due to “walking out of my hospital room into public areas,” or “modesty.” Whereas another chose not to double gown because the act was “way too much to deal with” due to her delivering a baby. However, most patients stated simply not having been given the option.

Lastly, the end half of the preliminary survey used the Likert scale to determine patient satisfaction levels with certain aspects of the hospital gown. The certain aspects gauged on the Likert scale were overall fit satisfaction, functionality, comfort level, and appearance. The results from these questions shine a more negative light on the hospital gown that may contradict the user-friendly nature of the hospital gown as previously stated at the beginning of the survey by individuals.

The overall fit satisfaction of the hospital gown resulted in most of the patients regarding the gown as neutral (46.43%), but a greater majority viewed the gown as unsatisfactory (21.43%) or highly unsatisfactory (7.14%) than satisfactory (25%) or highly satisfactory (0%). Patients who claimed the hospital gown to be satisfactory contradicted themselves in the reasoning behind the rating. For example, one patient stated, “It was comfortable length and allowed for moving around the bed without being

tangled or pulled too tight, was not overly big as previous ones have been. Did not close enough to allow complete modesty though if bending over or walking around.” Whereas another claimed, “It was just a gown and no one really enjoys wearing one but it was okay.” However, a few patients claimed satisfaction due to the oversized fit and adjustable tie closure in the back.

Some patients who claimed to be neutral still had negative opinions of the hospital gown. For example, “I found it neutral because it was comfortable enough to wear for the hour I was in the hospital but wouldn’t want to again.” Or another patient claiming to be neutral stated, “Not flattering. Didn’t like the ties.” Lastly, patients who found the hospital gown unsatisfactory stated it was due to the material or size. For example, one patient stated, “It was baggy and showed a lot.” Whereas another patient claimed, “The fit was very much contouring my curves. Considering that the fabric is the flimsiest one, a loose fit might have saved some of my modesty. The body hugging fit along with no bra showed everything that I don’t want people to see, specifically when surrounded by men.”

Next, the functionality of the hospital gown resulted in a vast majority stating the gown was satisfactory (32%) or highly satisfactory (7%). A total of 32% found the gown highly unsatisfactory (11%) or unsatisfactory (21%), and 29% were neutral towards the functionality of the hospital gown. According to the comments from participants, the gown was satisfactory due to the ease of use for the patient or hospital staff. For example, one individual wore a nursing gown that allowed her to breastfeed easier. Other participants stated the gown served its purpose. For example, “It served its purpose of covering my body, yet nurses and doctors still had access for their uses.”

Users who claimed to be neutral stated they had issues with the hospital gown. For example, one participant stated, “[I] didn’t like that my back was exposed when I had to get up.” Another patient, who claimed they were neutral regarding their satisfaction with the hospital gown, stated:

The gown worked for the doctors and nurses so they were able to reach my IVs and abdomen. But at most I just needed a top instead of a gown as I was able to wear pants. So, the gown was too much material with my own pants.

Finally, most patients who found the functionality of the gown to be unsatisfactory stated it was due to the design of the gown. Most patients claimed the hospital gown was not functional due to the ties in the back or the gaping nature of the gown. However, one patient felt very strongly about the hospital gown design by stating,

I am always left wondering what is the purpose of those! They do not offer any coverage, are taken off to expose every body part the moment a patient enters for surgery! And for the time in between, wearing it is like wrapping up myself in the skimpiest clothing available.

Another significant concern for the participants related to the comfort level of the hospital gown. Half of the patients claimed satisfaction with the comfort, while the other half remained split between neutral (25%), unsatisfied (21%), and highly unsatisfied (4%). However, even though patients claimed to be satisfied with their comfort levels while wearing a patient gown, many left negative comments when asked to explain why they found their experience to be satisfactory. For example, one patient wrote, “It covered me okay and when you are in that situation that is all you can ask for.” Another patient stated, “Satisfactory probably because I knew I was required to wear it.” While, the

participants are claiming satisfied, their comments relate to a more neutral feeling about the gown and its comfort.

Two patients that indicated they were satisfied with the gown explained that the gown was “soft” and “comfortable.” Many patients who viewed the gown as unsatisfactory stated their dissatisfaction as due to the fabric of the hospital gown they were provided during their stay. One patient stated, “[I] felt like it was washed 1000 times.” Another patient stated, “The gown was a very rough cotton material that was not very comfortable.”

Lastly, patients surveyed were asked their opinion on the appearance of the hospital gown. A majority of the patients found the appearance of the hospital gown highly satisfactory (15%) or satisfactory (35%). A total of 27% of the patient surveyed found the gown’s appearance highly unsatisfactory (4%) or unsatisfactory (23%), and a total of 19% of patients were neutral about the topic. For many patients, the hospital gown was rated as satisfactory due to the cleanliness or condition of the gown or their indifference to wearing the gown. A few patients stated the gowns appeared “clean, not torn,” “no stains,” or “not falling apart.” Whereas another patient stated, “I didn’t really care about the way it looked. I wasn’t in a fashion show.”

Many of the patients who claimed neutrality on the appearance of the gown echoed the comments stated by the patients who claimed satisfaction. Their main concerns related to whether the gown was clean and in good condition. One patient stated, “[I] felt neutral about this because it was a basic gown that has definitely been used for quite a while.” Another patient stated, “It was clean, and I don’t really have a preference on what it looks like.”

The findings from the preliminary survey present an overall patient satisfaction with the hospital gowns due to functionality of the tie closures, oversized nature of the gown, and ease of medical procedures. However, other patients stated high levels of dissatisfaction related to functionality of the tie closures, overall fit of the gown, and modesty issues. This insight was used by the researcher to develop the interview protocol for Phase II of the study, semi-structured interviews.

Phase II: Semi-Structured Interviews

The semi-structured interviews were completed by 13 individuals aging 65 years or older residing in central Missouri and who have worn a hospital gown in the last 12 months. All the individuals who completed the semi-structured survey identified as either male or female. Below is a table of the demographic information for the semi-structured interviews.

Table 4.2

Descriptive Statistics of Semi-Structured Interview Demographic Variables

Total Male Participants	5
Total Female Participants	8

After coding and analyzing the semi-structured interviews, the researcher found interesting information regarding the hospital gowns. Overall, the patients viewed the hospital gown as an unpleasant medical necessity that the patient had to endure as a part of the outpatient or inpatient experience. The patients were willing to endure the unpleasant experiences because they believed the gown was a medical necessity due to the ease it affords the healthcare providers. Through the researcher's analysis of the data

collected, the study data presented five key themes relating to patient satisfaction with hospital gowns: (a) oversized, (b) exposing, (c) self-conscious, (d) design changes, and (e) necessity.

Theme I: Oversized

The patients described the overall fit of the hospital gown as oversized or too large. The main concerns for the oversized nature of the gown were in the body of the garment and the length. When describing the body of the gown, most patients agreed it was oversized. However, depending on the height of the person, the length of the gown could be longer or shorter.

All but three individuals claimed the hospital gown was huge on their bodies. One individual described her experience with the hospital gown as so “aggravating” that they could not remember. Whereas another patient claimed the gown was perfect. Lastly, the third patient described the gown as too short and small. One patient discussed what they thought the best length for a hospital gown would be by stating, “Optimal would be about six inches longer, and ... probably should’ve been another four to six inches longer there [around the waist] also.”

The oversized nature of the hospital gown did not cause difficulty for most patients when performing daily activities. Most patients stated they were able to walk in the hallway, toilet, and move in and out of bed when wearing the gown, without much difficulty. One patient, however, reported there was difficulty when twisting or turning in bed. They stated the gown would get caught under them. Two other patients reported holding the gown up at the waist or under the armpit to support their movement without interference from the gown. As you can see, even if the patient had difficulties, they had

to develop strategies to help maneuver in the oversized hospital gown. This supports the researcher's overall theory that hospital gowns require additional design adaptations to better support the needs of patients.

The FEA consumer needs model can be used to design a patient-centered gown that incorporates a range of sizes. This will help with this oversized nature of the hospital gown and help the patients who may not feel the gown is big enough for them.

Additionally, the LCPT can be applied to patients who wear the oversized gowns due to affecting the way the patient views themselves in the gown. Since the gown is ill-fitting, it could lead to the patients feeling uncomfortable or sicker, resulting in a disruption to their life course.

Theme II: Exposing

Another significant concern stated by patients was that the oversize nature of the gown made it difficult for them to tie the back of the gown, resulting in the patient exposing themselves. One patient described the gown as "The length was to the knees, and the shoulders were very wide, and it's hard to tie when you're by yourself. So, you were pretty much open. It was very loose on the top and just hanging there."

The feeling of exposure or openness caused a lot of patients to struggle with modesty issues. Many patients felt exposed due to the design of the hospital gown, particularly the open back. One patient reported it was hard to not expose yourself because "You got to cover up your butt [bottom] every time you get out of bed." Another patient described wearing the gown as "... and you feel naked. You feel like your rear end's hanging out." The patients also reported always having to ensure they were not exposing themselves when getting in and out of bed. The exposure caused the patients to

feel uncomfortable as they were showing too much of their bodies. One patient explained the gowns “make you feel very uncomfortable because you’re always trying to cover yourself, and you don’t feel like you can get covered enough. So, very exposed is how I really felt.”

A few patients developed strategies to combat the exposure by double gowning, but not every patient was given the choice. Many of the patients interviewed had to cope with the feeling of being exposed and their limited modesty. The feeling of overexposure is also indicative of the need to redesign the hospital gown to better serve the confidence and modesty of patients. The difficulty with this approach to redesign is to balance the needs of the patients with the need to access the patient when delivering care.

The LCPT can be applied to the redesign of the hospital gown when understanding how the feeling of being exposed and experiencing limited modesty affected the patient’s overall mental health during the hospital stay. The effect on the life course and mental health is a reason to push forward with redesigning the hospital gown to be more patient-centered. The FEA consumer needs model can take into consideration the patient’s feeling of exposure due to the open back and redesign the hospital gown to not include an open back or one that allows for modesty.

Theme III: Self-conscious

Initially, the researcher faced difficulty gaining insight into the patient’s emotional feelings related to the gown. Patients, when interviewed, gave simple one- or two-word answers and did not want to expand upon their feelings. The researcher had to come up with strategic ways to broach the topic with the individuals interviewed. Once the patients were comfortable with describing their emotional status, many of them

described the hospital gown as uncomfortable, self-conscious, or annoying. However, three out of 13 patients interviewed did not have any issues with their emotional status while wearing the gown. One of the patients claimed the emotional status the gown caused was the least of her worries due to the extent of her injuries. Even when describing the hospital gowns as uncomfortable or annoying, the patients often downplayed their feelings by stating that the gown was a necessity and a normal thing when undergoing healthcare services.

However, for some patients, the feeling of being uncomfortable or exposed due to the design of the hospital gown caused them to feel self-conscious. The main reason patients felt self-conscious was due to the design of the gown, particularly the open back. Due to the design, the patients felt like their bodies were on display, causing them to view themselves self-consciously around healthcare providers or other patients. One patient, when asked if they felt self-conscious in the gown, replied, “Of course. I mean, I think I always will feel self-conscious in a gown.” Another patient felt the most self-conscious when exercising. The back opening caused the patient to feel self-conscious when doing exercises in the hospital. The movements of the exercises caused her to feel more exposed due to the hospital gown design. For two patients, their level of uncomfortableness with the gown was borderline uncomfortable. When asked to rate their level of uncomfortableness between 1 (most uncomfortable) and 10 (least uncomfortable), they stated “... would be about a four or five.”

The FEA consumer needs model can be utilized to develop a more patient-friendly hospital gown. The gown will allow the patients to cover their bodies more easily. This will allow for the patients to not feel as if their body is on display during the

patient's hospital stay. Also, the LCPT can be applied to incorporate ways to understand how the gown makes the patients feel and how it affects their overall life experiences. If we can design a gown that elevates their experience, creating a healthier mental outlook of themselves and healthcare settings, the patient's life course will overall improve.

Theme IV: Design Changes

When asked what they would like to change about the hospital gown, many patients listed specific things that dealt with exposure or feeling self-conscious. For many, the areas of most change involved ways to improve the open back, thicker material, sizing, and color schemes. Some ideas patients had to improve the open back were to create an apron flap instead of the ties, move the ties to the side or front of the garment, and replace the ties with Velcro. Further, patients asked for thicker material (i.e., flannel, fleece, or pajama material) so the gown was warmer, especially during the winter months. Patients stated that changes to the sizing of the gown would be beneficial to allow for multiple sizes instead of a one-size-fits-most. Lastly, brighter, more colorful hospital gowns were suggested. Patients also suggested Chief's, St. Louis Cardinals, Batman theme gowns along with floral patterns. This would allow for a more cheerful environment.

The FEA consumer needs model can be utilized in the design changes to focus on a more patient-centered hospital gown design. The changes and ideas outlined by the patients can be incorporated into future designs of the gown. This will allow for the patient's ideas or interests to be at the beginning stages of the design, creating a more user-friendly hospital gown. However, the LCPT will be supported, as the life experiences of the patients using the new hospital gown designs will increase positive

outcomes. This will allow the patients to have a better mental outlook while staying in the hospital and eliminate most feelings of self-consciousness or being uncomfortable.

Theme V: Necessity

The patients deem the hospital gown a medical necessity. The individuals interviewed believe the hospital gown allows for easier access to the patient's body by healthcare providers. The individuals interviewed specifically believe it is easier for the healthcare providers to exam parts of the body, administer medicine through an IV, and check vitals. One patient stated,

I know that the doctors and nurses have to be able to get to certain parts of your body... So, I know that that's easy for them to, I guess, do things. Of course, there's no sleeves, so that makes it easy to get to your arms for taking blood pressure and so on. I understand that it's just easier for them to treat a person.

A patient did comment on how wearing a gown and not your own clothes could be seen as an advantage to both the patient and the medical provider by stating, "If a person is bleeding or something, you don't have to worry about getting your own clothes soiled. So that's an advantage." Another advantage commented on by two patients were the ease of movement during medical procedures. One patient stated they were necessary because "it allows more freedom of movement." Whereas, the other patient stated, "The ease of getting a patient in and out of them... And so, I think it's the ease of so I didn't have to move around as much."

The LCPT helps support the theme of necessity because the patient associates this part of their life course experience as a requirement in order to get better. This is a coping mechanism the patient has developed while wearing the hospital gown. The patients tell

themselves they are a medical necessity, and it is “okay” to feel exposed or self-conscious. Whereas, the FEA consumer needs model does not apply in favor of the patient. The theme of necessity is for the hospital gown’s main user to be the healthcare providers – meaning the gown is designed with the healthcare provider in mind instead of the patient.

Overall, the findings indicate that patients are passive about wearing the hospital gown. They believe it is deemed as part of the experience when going to a healthcare setting. Most of them are not comfortable wearing the gown but associate it with healthcare settings. One patient said, “And you just have to do it. So, tear off [the Band-Aid], just to get it over with and get out.” While other patients stated, “It is what it is.” Lastly, another patient claimed, “It definitely needs to be redone to be more user-friendly for the staff, as well as making the patient feel more comfortable.”

Chapter 5: Conclusion

Chapter 5 contains the following sections: (a) research goals, objectives, and gaps; (b) summary of findings; (c) contributions and implications; and (d) limitations and future research.

Research Goals, Objectives, and Gaps

Today's medical practices of increased ambulation during the recovery process are causing patients to feel overexposed with the current hospital gown design (Lucas & Dellasega, 2020a). Every patient experiences their own feelings of discomfort differently, even across different age groups. Therefore, the aging process will have different outcomes on each person. By 2025, 1.2 billion people will be 60 years or older (Wiederhold et al., 2013). Thus, due to the rapid growth of the aging population, the researcher chose to focus this study on the aging population of 65+. To meet the needs of this growing population, healthcare organizations need to take a more critical role in improving the health, well-being, and patient satisfaction of their patients.

Patient input is used as a powerful insight for healthcare providers and healthcare systems to gain patient perspective and to improve patient satisfaction (Hearn et al., 2019). By understanding and learning about health issues affecting the community (hospital gown discomfort), the healthcare providers can analyze the group's needs and adapt as needs develop (Hearn et al., 2019). Moreover, healthcare research has shown that the psychological impact of being uncomfortable in your environment can affect a patient's recovery (Gordon & Guttman, 2013). When patients are uncomfortable in their environment and feel exposed, they are less likely to ambulate (Gordon & Guttman,

2013), which is a core function of the current recovery process practiced in healthcare settings.

The purpose of the research study was to discover how hospital gowns can preserve patients' dignity, modesty, and comfort while maintaining functionality for healthcare providers. To achieve this objective, the FEA consumer needs model and the LCPT were used as the guiding theoretical frameworks to determine if the current hospital gown is meeting patients' needs. By analyzing the design of the hospital gown using the FEA consumer needs model, the researcher can understand how the hospital gown can specifically meet the needs of the intended user (the patient). The LCPT allowed the researcher to analyze how a patient's interaction with a hospital gown affects them mentally, allowing the researcher to suggest further modifications or improvements. Additionally, the FEA consumer needs model was used in this study because of the significant impact of a hospital gown's design on a patient during and after their stay. The experience can either harm or help the patient, depending on how their mental, physical, and social health was affected by wearing a hospital gown.

Summary of Findings

Overall, for the preliminary survey, over half of the patients believed the hospital gown was user-friendly. However, half of the patients surveyed reported needing help donning the hospital gown. While wearing the hospital gown, many of the individuals were not given the choice to double gown to help combat modesty issues. Lastly, comfort levels of the individuals resulted in half claiming satisfied or unsatisfied. Most of the patients surveyed found the hospital gown unsatisfactory due to the material or size. In

the end, though, a vast majority of the patients who completed the survey believed the gown served its justified purpose.

The semi-structured interview results demonstrated patients 65 years and older describe the hospital gown as oversized, exposing, self-conscious, needing design changes, and a necessity. The patients are willing to comply with the hospital policy of wearing a hospital gown because the patients believe it is a medical necessity or a part of the inpatient or outpatient experience. The main concerns for the oversized nature of the gown were in the body of the garment, the length, and not having the ability to tie the back of the gown. However, the oversized nature of the hospital gown did not cause difficulty for most patients when performing daily activities. It did, however, hinder modesty and caused the patient to overexpose themselves.

The feeling of exposure or openness caused a lot of patients to struggle with modesty issues. Due to the over exposure, the patients described themselves in the hospital gown as uncomfortable and self-conscious. Being uncomfortable or being exposed due to the design of the hospital gown caused many patients to feel self-conscious. Due to the design, the patients felt like their bodies were on display, leading to the feeling of self-consciousness. Many patients, when asked what they would like to change about the hospital gowns, even listed specific things that dealt with exposure or feeling self-conscious. Lastly, most patients are not comfortable wearing the hospital gown but associate it with healthcare settings.

Based on the results, the data support the need for a redesign using the guiding principles of the FEA consumer needs model and LCPT. The FEA consumer needs model can be used to create a more user-friendly gown for patients. The re-design can

focus on the patients' needs to create a better overall patient-centered care experience. Whereas, the LCPT theory can take into consideration how the current hospital gown affects the patient's mental status. By understanding their emotional needs, the healthcare providers will be able to better care for the patients' physical concerns due to the patient feeling comfortable in the healthcare setting. Many patients even suggested ways to make the gown more patient-centered. The leading suggestions were using Velcro instead of ties at the back opening, changing the material, pattern, or color of the gown, and moving the access point of the hospital gown.

Lastly, the study's findings found that hospital is not meeting patients' preferences or preserving patients' dignity, modesty, and comfort, addressing RQ1 – how can hospital gowns better meet patients' preferences while maintaining functionality during medical exams and procedures? Further, the study's findings suggested that hospital gowns can better meet patients' preferences and preserve patients' dignity, modesty, and comfort by taking into consideration the concerns and needs voiced by the patients in this research study. Specifically, the hospital gown's open back, material, and sizing needs to be redesigned in order for patients to feel like their needs are being met while maintaining their dignity, modesty, and comfort. These findings addressed RQ2 – How can hospital gowns better preserve patients' dignity and meet the patients' degree of modesty or comfort?

Contributions and Implications

The research results regarding patient satisfaction of the hospital gown can contribute to academics, education, the apparel industry, and the healthcare industry. The academic contributions include providing insight on patient satisfaction to establish

further research goals or objectives. The research concluded about the hospital gown shows academic research institutions and research hospitals that there is still a lot of work that needs to be done to increase satisfaction regarding the hospital gown. The results of the study regarding the mental and emotional status of a patient wearing a hospital gown has laid groundwork that will help academic researchers pursue ways to further understand or solve the problems hospital gowns cause users.

Next, education contributions provided by the research allows professors and students to understand that user-centered or patient-centered designs should be the main focus of garment design. Educators and students can understand from the research that when an intended user is not considered during the design of a garment, it can cause emotional unrest for the user. This unrest can have negative effects on the user's overall life course. To prevent unwanted emotional strain or difficulty in use, education needs to teach how to include and focus on the intended user or all intended users.

Similarly, the research contributes to the apparel industry by outlining ways to improve the hospital gown. The industry has examples outlined in the research of concerns or difficulties the hospital gown has caused to the patient physically and mentally. The patients themselves have even suggested ways to improve or modify the hospital gown to help combat the issues they face when wearing the garment. The apparel industry can take the patients' concerns and ideas and create a finished product that is more user-friendly for patients.

Lastly, the findings of this research study will contribute to the healthcare industry specifically for patients and healthcare providers. For the patients, this study acts to represent their opinions on a garment that has been widely used for many decades.

Overall, patients through the research study will be allowed to voice their wants and needs to help better improve future designs of the hospital gown. Next, the research study can benefit healthcare providers by helping them understand patients' preferences towards the hospital gown. By understanding how the patient feels, the healthcare provider will be able to improve their level of care towards the patient.

Limitations and Future Research

There is still a significant opportunity for improvement in all research studies, as well as this one. First, the study only focused on patients as the only end-user of the hospital gown. The research is lacking input from healthcare providers and hospital administrators. If these groups had been included, the research could have developed a more well-rounded description of hospital gown satisfaction for end-users. Further research needs to be conducted to understand if hospital gowns are meeting healthcare providers' needs also. Further research is also needed to understand why administrators have not upgraded hospital gowns sooner and find ways to solve the complications.

Second, the study used a small sample size with not many diverse participants. The sample size was a group of individuals 65 years or older who resided around central Missouri. Due to the research criteria, only a small group of individuals were able to voice their opinions about the hospital gown. Future research should be conducted that includes all ages who have worn a hospital gown across multiple regions in the United States.

Third, the researcher found that recruiting participants 65 years and older was difficult. The research method deployed two types of recruitment methods for the semi-structured interviews – online preliminary survey and hard copy flyers. The older

population did not complete the online preliminary survey, therefore, leading the researcher to recruit the majority of participants via the hard copy flyer. Future research recruiting patients from this population should use a hard copy method instead of an online method.

Fourth, the study was conducted during COVID-19. Due to conducting research during a pandemic, stricter safety protocol and guidelines had to be followed for researchers and participants to keep everyone healthy and safe. As a result, the interviews were conducted via phone. This caused tremendous difficulty with participants being able to hear, becoming distracted, or building trust. Future research regarding patient satisfaction of the hospital gown should be conducted in person due to the sensitive nature. The individuals will feel more comfortable talking about their difficult experiences face to face instead of over the phone.

However, even with the limitations described, the research study can represent a broad picture of how patients perceive hospital gowns. As a result of the findings, future research could investigate ways to apply patients' opinions to a more patient-centered or user-friendly hospital gown. Further research could find ways to implement the patient-centered gown in all departments of the hospital. Also, research could be conducted to find ways to manufacturer patient-centered gowns at a more affordable price point. Further prospective research should be conducted to learn the benefits or hinderances the hospital gown provides healthcare providers.

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Appendix A

CONSENT WITH WAIVER OF DOCUMENTATION FOR PARTICIPATION IN A RESEARCH STUDY

INVESTIGATOR'S NAME: ASHTEN LORTS PROJECT

IRB #: 2051188

STUDY TITLE: HOSPITAL GOWNS AND PATIENTS SATISFACTION

STUDY SUMMARY

Hospital gowns are used daily by patients, nurses, and doctors in different settings. The purpose of my research study is to determine if hospital gowns are catering towards the users' needs sufficiently especially patients. The research will determine if patients' preferences are being met while wearing a hospital gown. On conclusion of the research, the researcher will make suggestions for ways the patient can be more comfortable while wearing a hospital gown and ways for the gown to be improved for the future.

We would like to invite you to take part in a research study that we are doing to determine "What are patient's preferences of hospital gowns while seeking medical care?". If you are interested, this form will explain what will happen if you join the study. If there is anything in this form that you do not understand, please email, amlbtc@umsystem.edu, for an explanation. If you decide to take part in this study, we recommend that you print a copy of this form.

Research studies help us to learn new things and test new ideas. Taking part in a research study is voluntary. You are free to say yes or no, and you can stop taking part at any time, without giving us a reason. There will be no penalty to you or loss of benefits or any effect on your medical care at University of Missouri Healthcare.

The purpose of this research is to determine if hospital gowns are catering toward the users' needs sufficiently especially the patients. The research will determine if patients' preferences are being met while wearing a hospital gown. On conclusion of the research, the researcher will make suggestions for ways the patient can be more comfortable while wearing a hospital gown and ways for the gown to be improved for the future.

We are inviting you to take part in this research because you qualify and meet the criteria of having worn a hospital gown within the last 12 months. We will only include you in the study if you first give us your permission.

We are asking about 30 people to take part in the study. Ashten Lorts in the Textile Apparel Management Department is the Principal Investigator/study doctor.

WHAT AM I BEING ASKED TO DO?

If you decide to take part in this study, we will ask you to complete a pre-survey that will take 30 minutes. The survey will have at maximum 20 questions and will be completed online. The survey will ask questions regarding the design, shape, and fit of the hospital gown. The questions will also ask about your comfort levels and satisfaction while wearing the gown. If you are chosen and willing to participate in the in person via zoom interview process. The interview will be conducted individually. If you do not wish

to show your face during the interview, you will not be required. The primary researcher will ask you a series of questions regarding to the design, shape, and fit of the hospital gown. The questions will also ask about your comfort levels and satisfaction while wearing the gown.

HOW LONG WILL I BE IN THE STUDY?

The study will be a 30 minute survey of 20 questions maximum either in person or online. If you are chosen and willing to participate in the interview process, you will need to be present via Zoom in the Fall of 2021 for a one hour interview. The study will only take place the time and length it takes to complete the survey. If you are willing and asked to participate in the interview, the interview will be scheduled during yours and the interviews availability. The interview will be held on one day for one hour in the Fall of 2021.

CAN I STOP BEING IN THE STUDY?

Yes, you can stop being in the study at any time without giving a reason. Just tell the researcher or study staff right away if you wish to stop taking part.

ARE THERE ANY RISKS TO TAKING PART IN THIS STUDY?

There are risks to taking part in any research study. There may be problems caused by the study that we do not know about yet. Some discomforts from being in this study include recalling on your comfort level while wearing a hospital gown. If we learn

about new important risks, we will tell you. We will tell you about any new information we learn that may affect your decision to continue taking part in the study.

WHAT OTHER CHOICES DO I HAVE IF I DON'T TAKE PART?

Instead of being in this study, your choices may include: Participating in the pre-survey only and not participating in the interview

WILL INFORMATION ABOUT ME BE KEPT PRIVATE?

The study team needs to collect some of your personal information. This information comes from questions we ask you. One risk of taking part in a research study is that more people will handle your personal health information, email address, and phone number. We are committed to respecting your privacy and to keeping your personal information confidential. The study team will make every effort to protect your information and keep it confidential to the extent allowed by law. However, it is possible that an unauthorized person will see it. The data will be kept on one computer under a password protected file. Each participant will be assigned a number by the primary investigator. This number will be assigned randomly to the list of participants. The information and/or samples we collect from you for this study will not be used or shared with other investigators for future research studies. This applies even if we remove all information that could identify you from your information and/or samples. We might collect information from you that indicate the possibility of neglect/elder abuse. One or more of the study staff are mandated reporters. This means that they are required by law

to report any of these findings to the appropriate state agencies. These agencies include Missouri Department of Health and Senior Services.

ARE THERE ANY BENEFITS TO ME FROM TAKING PART IN THIS STUDY?

If you take part in this study, there may not be any direct benefit to you. However, we hope that by taking part, you will benefit from knowing that you are contributing to helping us learn more about hospital gowns, which may benefit people in the future.

WILL IT COST ME ANYTHING TO TAKE PART IN THIS STUDY?

There is no cost to you for taking part in this study.

WILL I BE PAID FOR TAKING PART IN THIS STUDY?

You will not be paid to participate in the survey. If you are chosen for an interview, you will be given a gift card at the end of completing the interview.

WHAT ARE MY RIGHTS AS A STUDY PARTICIPANT?

Taking part in this study is voluntary. If you do decide to take part, you have the right to change your mind and drop out of the study at any time. Whatever your decision, there will be no penalty to you in any way.

If the study investigator decides to take you off the study, she must explain the reasons.

We will tell you about any new information discovered during this study that might affect your health, welfare, or change your mind about taking part.

WHO CAN I CALL IF I HAVE QUESTIONS, CONCERNS, OR COMPLAINTS?

If you have more questions about this study at any time, you can email Ashten Lorts at amlbtc@umsystem.edu.

You may contact the University of Missouri Institutional Review Board (IRB) if you:

- Have any questions about your rights as a study participant;
- Want to report any problems or complaints; or
- Feel under any pressure to take part or stay in this study.

The IRB is a group of people who review research studies to make sure the rights of participants are protected. Their phone number is 573- 882-3181.

If you want to talk privately about your rights or any issues related to your participation in this study, you can contact University of Missouri Research Participant Advocacy by calling 888- 280-5002 (a free call), or emailing MUResearchRPA@missouri.edu.

If you have any questions right now, please email, amlbtc@umsystem.edu.

Appendix B

Email Recruitment to Potential Participants

Hello,

My name is Ashten Lorts, and I am conducting research for my master thesis on patients' satisfaction with hospital gowns as part of the requirements for a M.S. in Textile and Apparel Management at the University of Missouri. I am inviting you to participate in this study.

The purpose of the research study is to discover how hospital gowns can preserve patients' dignity, modesty, and comfort while maintaining functionality for healthcare providers. The objectives of this study are as follows:

- Understand if the current hospital gown is meeting patients' needs
- Understand if the current hospital gown is preserving patients' dignity, modesty, and comfort levels
- Understand if the current hospital gown is maintaining functionality for the patient and healthcare providers
- Understand ways in which the hospital gown can improve if needed

This study is seeking participants who are (a) aged 65 years or older, (b) have worn a hospital gown in the last 12 months, and (c) reside in the state of Missouri.

If you meet these qualifications, you are kindly asked to participate in this research study. The following information is provided in order to help you make an informed decision about participation.

Your participation in the research study is completely voluntary, and your response will help me determine how hospital gowns can preserve patients' dignity, modesty, and comfort while maintaining functionality for healthcare providers.

If you decide to participate, you have the option of withdrawing from the study at any time; there is no penalty for withdrawing, and no explanation is necessary.

If you agree to participate, you will engage in a one-on-one individual interview that will last approximately 60 minutes. During the interview, you will decide which experiences you are comfortable talking about. There are no physical risks associated with this research. You may, however, feel temporary distress when answering questions about your experiences wearing a hospital gown. After the interview, you will receive a gift card as a thank you for your participation.

The interview will take place at a designated location or via Zoom in mid-Missouri that is easily accessible. All interviews will be audiotaped and eventually transcribed. You will be assigned a pseudonym for which you will be referred in the transcript. Information produced by this study will be stored in the researcher's file and identified by a code number only. The code key connecting your name to specific information about you will be kept in a separate, secure location. Information contained in your records may not be given to anyone unaffiliated with the study in a form that could identify you without your written consent, except as required by law.

To further protect confidentiality, all data will be summarized for reporting purposes. No individuals will be able to be identified or identifiable.

The results of this study may be published in scientific journals or presented at professional meetings, but if this happens, you will not be identified.

I plan to conduct the interviews in October and November 2020. If you are interested in participating in this research study, please contact me, Ashten Lorts, at amlbtc@umsystem.edu. In your email response, please include your full name, email address, and phone number. Once you have confirmed your interest in participating, I will provide follow-up communication about setting up the specific day and time for the interview. I will also forward you a copy of the informed consent form for your review.

Thank you for your consideration.

Sincerely,

Ashten Lorts, Graduate Assistant and Master Student

University of Missouri

Textile and Apparel Management Department

137 Stanley Hall

Columbia, MO 65211

amlbtc@umsystem.edu

Appendix C

Social Media Recruitment to Potential Participants

Hi, I am Ashten, and I am conducting research for my master thesis on patients' satisfaction with hospital gowns as part of the requirements for a M.S. in Textile and Apparel Management at Mizzou. I would like your help. My goal is to discover how hospital gowns can preserve patients' dignity, modesty, and comfort while maintaining functionality for healthcare providers.

If you are (a) 18 years or older and (b) have worn a hospital gown in the last 12 months, you can participate in my study. Your participation in the survey is voluntary and you can withdraw from this study at any time without penalty.

The survey consists of no more than 21 questions and should take no more than 30 minutes to complete.

After completing this survey, you may have the opportunity to participate in an interview for further research on this topic. As you complete the survey, you will be notified if you are eligible to participate in an interview, and you will be given the opportunity to provide additional contact information for follow up. If you do not wish to participate further in the research study, you will not need to provide any personal information.

If you have questions about this research, you may contact IRB at muresearchirb@missouri.edu or call (573) 882-3181, myself, Ashten at amlbtc@umsystem.edu, or my Thesis Advisor, Dr. Kerri McBee-Black at mcbeblackk@missouri.edu.

Thank you for your consideration.

Appendix D

Preliminary Survey Questions

Consent Question

The purpose of the survey is to discover how hospital gowns can preserve patients' dignity, modesty, and comfort while maintaining functionality for healthcare providers.

The objectives of this study are as follows:

- Understand if the current hospital gown is meeting patients' needs
- Understand if the current hospital gown is preserving patients' dignity, modesty, and comfort levels
- Understand if the current hospital gown is maintaining functionality for the patient and healthcare providers
- Understand ways in which the hospital gown can improve if needed

If you are (a) 18 years or older and (b) have worn a hospital gown in the last 12 months, you can participate in the study. Your participation in the survey is voluntary and you can withdraw from this study at any time without penalty.

If you meet the qualifications and wish to proceed, please chose (a) YES. If you do not meet the qualifications or do NOT wish to proceed, please chose (b) NO.

a. Yes

b. No

If the answer (b) No – survey ends

If the answer (a) Yes – survey goes to the next question

2. Were you asked or required by a medical professional during your visit to health care setting to wear a hospital gown for one or more hours within the last 12 months?

a. Yes

b. No

If the answer (b) No – survey ends

If the answer (a) Yes – survey goes to the next question

3. Did the hospital gown you wore at your most recent visit have a tie closure at the back opening?

a. Yes

b. No

4. Did you find the hospital gown you wore at your most recent visit user friendly?

a. Yes

b. No

If the answer (a) Yes – survey advances to the next question, number 4

If the answer (b) No – survey advances to question, number 5

5. You indicated that the hospital gown you wore at your most recent visit was user-friendly. Please explain why the hospital gown was user-friendly.

a. Short Answer

6. You indicated that the hospital gown you wore at your most recent visit was not user-friendly. Please explain why the hospital gown was not user-friendly.

a. Short Answer

7. Was there a time you required assistance when putting on the gown? This can either be by a medical professional or person that came with you during your visit.

a. Yes

b. No

If the answer (a) yes – survey advances to the next question, number 7

If the answer (b) no – survey advances to question number 8

8. If you required help while putting on the gown you wore at your most recent visit, please explain who helped you and why you required help.

a. Short Answer

9. How would you rate your overall satisfaction with the fit of the hospital gown you wore at your most recent visit?

a. 1 – Highly Unsatisfactory

b. 2 – Unsatisfactory

c. 3 – Neutral

d. 4 – Satisfactory

e. 5 – Highly Satisfactory

10. Please explain why you found the overall fit of the hospital gown satisfactory or unsatisfactory.

a. Short Answer

11. How would you rate the functionality of the hospital gown you wore at your most recent visit?

a. 1 – Highly Unsatisfactory

- b. 2 – Unsatisfactory
- c. 3 – Neutral
- d. 4 – Satisfactory
- e. 5 – Highly Satisfactory

12. Please explain why you found the overall functionality of the hospital gown satisfactory or unsatisfactory.

- a. Short Answer

13. How would you rate your comfort level when wearing the hospital gown, you wore at your most recent visit?

- a. 1 – Highly Unsatisfactory
- b. 2 – Unsatisfactory
- c. 3 – Neutral
- d. 4 – Satisfactory
- e. 5 – Highly Satisfactory

14. Please explain why your comfort level when wearing the hospital gown was satisfactory or unsatisfactory.

- a. Short Answer

15. Double gowning is the process of wearing two hospital gowns at once. One is worn with the opening at the front of the patient's body, and the other is placed on top with the opening at the back of the patient's body. Did you double gown during your most recent visit?

- a. Yes
- b. No

16. Please explain why you felt the need to double gown or not double gown during your stay in the hospital.
- a. Short Answer
17. How would you rate the appearance of the hospital gown? Was the gown in good or bad condition (i.e., clean, new, tattered, worn, etc.)?
- a. 1 – Highly Unsatisfactory
 - b. 2 – Unsatisfactory
 - c. 3 – Neutral
 - d. 4 – Satisfactory
 - e. 5 – Highly Satisfactory
18. Please explain why you found the appearance of the hospital gown satisfactory or unsatisfactory.
- a. Short Answer
19. What is your gender?
- a. Female
 - b. Male
 - c. Transgender Female
 - d. Transgender Male
 - e. Gender Variant/Non-Conforming
 - f. Not Listed: _____
 - g. Prefer Not to Answer
20. What is your age range?
- a. 18 – 30

b. 30 – 50

c. 50 – 65

d. 65+

If they answer (d) 65+ – survey advances to the next question, number 19

If the answer (a) 18 – 30, (b) 30 – 50, or (c) 50 - 65 – the survey ends

21. Do you reside in the United States of America in the state of Missouri?

a. Yes

b. No

If the answer (a) yes - survey advances to the next question, number 21

If the answer (b) no - the survey ends

22. Would you be willing to participate in a research study conducted by a University of Missouri Graduate Student? The student is studying the research question “How can hospital gowns better meet patient’s preference while maintaining functionality during medical exams and procedures?”. The research study will be a one-hour interview conducted at a later date. A five dollar gift card compensation will be provided to participants.

a. Yes

b. No

If the answer (a) yes – survey advance to the next question, number 20

If the answer (b) no – the survey ends

23. If you are willing to participate in the research study, please provide your name and email address AND/OR to be contacted by the researcher at a later date.

a. First name, Last name

b. example@missouri.edu ; 123-456-7899

Appendix E

Semi-Structured Interview Questions

- 1) When were you asked to put on a hospital gown? Upon arrival, after being admitted, for a certain test, etc.?
- 2) When asked to put on a patient hospital gown what were your thoughts?
- 3) How was the overall fit of the gown on your body?
- 4) Did you notice any difficulty when doing daily activities or functions while wearing the hospital gown?
- 5) Did you develop strategies on how to better wear the gown or make daily activities and functions more manageable?
- 6) How would you describe your comfort levels while wearing the hospital gown?
While wearing the gown, how was your emotional status? Do you believe wearing the gown made you feel more vulnerable and self-conscious?
- 7) Did you ever not allow anyone to come visit you during your time in the hospital due to wearing the hospital gown?
- 8) Why do you believe it is necessary for patients to wear hospital gowns during their stay?
- 9) If you could make changes to the hospital gown, what are some things you would like to change?
- 10) Are there any lasting remarks about the patient hospital gown you would like to provide at this time?