Walden University

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Steven Pippins

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Abstract

Patients' Experiences and Self-Reported Factors Identified as Important for Their Satisfaction of Home Oxygen Services

by

Steven Pippins

MPhil, Walden University, 2020

MHA, Grantham University, 2012

BS, University of Arkansas for Medical Sciences, 2006

Dissertation Submitted in Partial Fulfillment

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Abstract

Patient satisfaction is crucial to the evaluation of the overall quality of care and is associated with better healthcare service outcomes. Understanding the forces driving patient satisfaction and healthcare-related experiences can lead to improvements in overall quality of healthcare services. Despite this, no study has been performed to explore patients' experiences and self-reported factors identified as important for their satisfaction of home oxygen services. The purpose of this study was supported by three research questions focusing on how patients with recurring long-term oxygen therapy (LTOT) prescriptions describe their experiences with home oxygen services; factors identified by patients with LTOT as important to their satisfaction of home oxygen services; and how the five dimensions of the SERVQUAL model is used in patients' with LTOT, descriptions of factors necessary for their satisfaction of home oxygen services. Participants were purposefully selected from home oxygen-based Facebook groups and asked to perform in-depth email interviews. Data derived from the analysis of responses corresponding to the first two research questions were analyzed using Colaizzi's seven-step approach while directed qualitative content analysis was used for the analysis of responses corresponding to the third research questions. The SERVQUAL model dimensions were used in patients' descriptions and factors identified as important for their satisfaction of home oxygen service. The major implications of this study include improvement of service quality for home oxygen services at the organizational level leading to improvements in the health and well-being as well as the social conditions of home oxygen patients resulting in positive social change for that population.

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Chapter 1: Introduction to the Study

Most modern attention towards improving healthcare quality and value has been directed on the domains of care influenced by care providers and healthcare systems (Calabro et al., 2018). The patient perspective has often been missing from efforts to improve healthcare quality, and now, the importance of the patient perspective is being recognized as essential to healthcare quality assessment (Calabro et al., 2018). Patient and stakeholder participation in the healthcare quality improvement process is an essential component of patient-centered care (Calabro et al., 2018). The basic principles of patient-centered care include access to care, continuity and transition, involvement of family and friends, emotional support, physical comfort, information and education, coordination and integration of care, and respect for patients' preferences (Calabro et al., 2018). Contrary to the patient-centered approach, the biomedical model assumes that all diseases result from a single physical cause, such as cellular abnormalities or imbalances in homeostasis (Feo & Kitson, 2016). The biomedical model places priority on activities that lead to the diagnosis and cure of physical ailments, and places primary value on a rational and analytic approach to healthcare that is underpinned by objective knowledge and physician expertise (Feo & Kitson, 2016). The biomedical model, a dominant influence in modern healthcare, successfully contributed to the development of such modern healthcare staples as antibiotics and vaccinations and to substantial increases in life expectancy (Feo & Kitson, 2016). The model's singular focus on physical aspects of disease typically leads to the exclusion of those aspects of illness and treatment that are not easily explained by cellular and molecular processes (Feo & Kitson, 2016). Some of

those excluded aspects include social, psychological, relational, cultural, and spiritual determinants of health such as those emphasized in patient-centered care approaches (Feo & Kitson, 2016). In the patient-centered approach, people receiving care are not only seen as patients with a disease but as persons with unique circumstances that impact their illness (Feo & Kitson, 2016). When deciding to implement either biomedical or patient-centered care models, it must become a priority to employ models that encompass patient satisfaction since the concept of patient satisfaction has become a benchmark for quality healthcare (Calabro et al., 2018).

Patient satisfaction is one of the most important predictors used in the evaluation of outcomes and service quality of many healthcare programs and services (Owaidh et al., 2018). Patient satisfaction has not only been associated with good patient–physician relationships but has also been shown to influence treatment compliance, to guide payment reimbursement, and increasingly to gauge physician performance (Calabro et al., 2018; Owaidh et al., 2018). Other factors that have also been shown to impact patient satisfaction include general appearance of the healthcare facility, cleanliness of the healthcare facility, quietness of the healthcare facility, and waiting time of healthcare services within the facility (Owaidh et al., 2018). While those influential factors are comprised of services that are provided by the employees, nurses, and doctors within the healthcare facility, the evaluation of those factors shown to impact patient satisfaction can only come from patient reports of their experiences (Owaidh et al., 2018). Understanding patients' experiences through patient-reported outcomes illustrates healthcare systems' shift in focus towards providing patients with high-quality and high-

value care through patient-centered care (Calabro et al., 2018). As such, patient satisfaction has become an important concept frequently studied to identify the points of defect in healthcare systems and services with the aim of making improvements and ameliorating healthcare quality (Owaidh et al., 2018). Despite the shift towards patient-centered care, no study that I have found has been performed to explore patients' experiences and self-reported factors necessary for their satisfaction of home oxygen services using the SERVQUAL model as a conceptual basis. This may be the first study that I am aware of, to do so.

A principal factor used to evaluate healthcare quality and areas in need of improvement is patients' perceptions of their overall healthcare experiences (Samsson et al., 2017). Evaluating patients' healthcare experiences is a federally mandated task the goal of which is to assess the multiple pertinent events of a healthcare encounter from the patients' perspective (Cavanaugh, 2016). The assessment of these experiences is not only a key element in healthcare quality but has also been shown to be positively associated with improved health outcomes (Samsson et al., 2017). Assessing patients' experiences may lead to an increase in patients' involvement and collaboration in designing health services, especially for patients with chronic diseases such as those causing the need for long-term oxygen therapy (LTOT; Mira et al., 2016). Patients' experiences and prior knowledge of health services tend to influence their beliefs or expectations in relation to the benefits of treatments provided by the specific health service (Aujla et al., 2016; Samsson et al., 2017). Specifically, factors relating to positive patient experiences with

various health services have been associated with a better commitment to and compliance with treatments and treatment plan, leading to better health outcomes (Golda et al., 2018).

Assessing and understanding patients' experiences requires that patients reflect on those experiences and provide an account of their perceptions related to the quality of their unique encounter (Cavanaugh, 2016). Although healthcare professionals may provide the same service to all patients within each unique encounter, because of the demographic heterogeneity of the patients, each patient may experience or perceive the encounter differently due to the nature of their current condition (Vogus & McClelland, 2016). Due to the diversity-related variations in patient encounters, healthcare quality that is deemed to be high is greatly customized and based on an intimate understanding of the disparate patient population (Vogus & McClelland, 2016). Also causing variations in patient encounters is a knowledge gap between the patients and providers that may be compounded by the sensitive and vulnerable state of patients and family members coping with complex health problems (Vogus & McClelland, 2016). These conditions make it necessary to collaborate with and involve patients in healthcare services design through the understanding of patient experiences. As a means of providing a clearer basis for actionable improvements as well as the identification of organizational practices that influence positive or negative aspects of patient experiences, efforts have been made to tailor patient assessment measures to specific healthcare delivery contexts and services (Vogus & McClelland, 2016). To add to the body of literature concerning understanding patient experiences tailored to specific healthcare delivery contexts and services, in this study I explored patients' experiences and self-reported factors that are deemed important

to their satisfaction with home oxygen services. I used the SERVQUAL model as the conceptual basis for the interview questions and for providing a frame to interpret the data derived from this study.

Methods used in the measurement of patient experiences and patient satisfaction were first developed by medical anthropologist Irwin Press and sociologist and statistician Rod Ganey (Wilson et al., 2016). The founding of Press Ganey Associates and the subsequent creation of a survey used to measure patient satisfaction allowed patients' feedback to influence hospital performance by making improvements based on patients' perceptions (Wilson et al., 2016). Using patients' input in the development of action plans allowed service users to impact the quality of their own healthcare experiences (Wilson et al., 2016).

The concept of patient satisfaction was defined in Donabedian's quality measurement model as patient-reported measures of the structures and processes of care determined by patient-reported experiences (Wilson et al., 2016). Patient satisfaction has also been described as patients' perceptions of delivered healthcare services compared with their expectation of ideal care (Wilson et al., 2016). By either definition, patient satisfaction is crucial in the evaluation of the overall quality of care, and therefore the overall improvement of healthcare services (Luo et al., 2018). The subjective data derived from patient satisfaction assessments are often used to understand patients' concerns and determine specific areas for improvement (Thornton et al., 2017). Ameliorating healthcare services based on patients' perceptions of needed improvements, or their satisfaction, is necessary to develop long-term relationships and loyalty as it costs

more to attract new patients than to retain existing patients (Shabbir et al., 2016). Many factors influence patients' perception of satisfaction concerning their healthcare or use of healthcare services. Patient demographics such as age, gender, income, socioeconomic and general health status have all been shown to be influential to patient satisfaction assessment responses (Thornton et al., 2017). Characteristics of the medical or service provider, including demographics and experience, also have an impact on patient–provider interactions and as such, patient satisfaction (Thornton et al., 2017). Other factors may include the type of setting the patient is in along with patient wait times (Thornton et al., 2017).

The assessment of patient satisfaction and satisfaction ratings are subjective reflections of individuals' healthcare experience and are closely tied to healthcare reimbursement (Heath & Porter, 2017). Since 2012, changes made in Centers for Medicare and Medicaid Services (CMS) reimbursement have allowed for the withholding of hospital reimbursement-based patient satisfaction scores measured by the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey (Mazurenko et al., 2017). Despite the growing literature related to patient satisfaction, additional studies using various rigorous methodologies incorporating predictors at multiple levels (e.g., patient, hospital, market) are needed to clarify the complexities inherent in patients' overall satisfaction with hospital and healthcare services (Mazurenko et al., 2017). To date, I have found no study that has been performed to explore patients' experiences and self-reported factors necessary for patient satisfaction of home oxygen therapy services. To add to the body of literature concerning patient satisfaction

incorporating various predictors at different levels of care, in this study I explored patients' experiences and self-reported factors that are deemed important to their satisfaction with home oxygen services using the SERVQUAL model as the conceptual basis. The major sections of this chapter include the background, problem statement, purpose, research questions, conceptual frameworks, nature of the study, definitions, assumptions, scopes and delimitations, limitations, significance, and summary. The background section includes information on research literature and the gap in knowledge that the study addresses. The problem statement section includes the stated research problem and evidence of the problem's relevance. The purpose section includes the intent of the study. The research question section includes the research questions related to this study. The conceptual frameworks section includes an identification and description of the conceptual framework grounding this study. The nature of the study section includes the rationale for selecting the study design. The definition section provides concise definitions of key concepts in this study. The assumptions section contains information to clarify aspects of the study that are believed but cannot be demonstrated to be true. The scopes and delimitations section contains a description of specific aspects of the research problem and why the specific focus was chosen. The limitations section contains information concerned with methodological weaknesses. The significance section contains a description of how this study will contribute to the advancement of knowledge in the discipline as well as the study's implication for positive social change. Lastly, the summary contains information summarizing the main points of the chapter.

Background

In 2008, the CMS began publicly reporting HCAHPS survey results (Calcaterra et al., 2017). The intent of the HCAHPS initiative was to provide a standardized methodology for measuring patients' perspectives of hospital care (Calcaterra et al., 2017). Questions concerning patient-perceived satisfaction within the hospital were and still are among the survey's core questions (Calcaterra et al., 2017). HCAHPS survey scores are among the measures the federal government uses to calculate incentive payments to acute-care hospitals, and hospitals must achieve high scores to maximize federal incentive payments (Calcaterra et al., 2017). As such, patient satisfaction has become crucial to the determination of improvements necessary in healthcare services and is considered an important quality outcome indicator to measure success of healthcare services within these acute-care hospitals (Luo et al., 2018). Understanding the forces driving patient satisfaction and healthcare-related experiences can not only lead to quality-related improvements in healthcare services but can also help improve the patients' clinical course and adherence to treatments (Calabro et al., 2018). Healthcare providers and researchers must continue to develop and validate innovative methods to capture patient expectations, perceptions, and satisfaction to evaluate the healthcare services provided (Calabro et al., 2018). One of the most influential instruments used to measure and understand service quality in relation to expectations, perceptions, and satisfaction is the SERVQUAL model (James et al., 2017). This model proposes that service quality and thus patient satisfaction, is influenced by five dimensions: reliability,

tangibles, responsiveness, empathy, and assurance (Lee & Kim, 2017). The five dimensions of the SERVQUAL model are defined as follows:

- reliability (ability to perform services accurately)
- tangibles (physical facilities, staff, equipment, building, appearance, etc.)
- responsiveness (willingness to help and respond to customer needs)
- empathy (attention, caring, and individual service is given to the customer)
- assurance (staff ability to inspire, confidence, trust, and courtesy to staff; Ali & Raza, 2017)

Patients' perceptions and expectations of health-related services is frequently used in the exploration of overall service quality and patient satisfaction. Manulik et al. (2016) sought to determine whether patients from state and private health care facilities differed in terms of their qualitative priorities and assessments of received services. The main purpose of the study was to use patients' perceptions to compare the quality of services offered by a public health facility and a nonpublic health facility in the context of the SERVQUAL model (Manulik et al., 2016). The patients gave the highest scores to the domains making up the core aspects of health care services (Manulik et al., 2016). The private healthcare facility patients had the highest expectations relating to the equipment, and the state facility patients had the highest expectations relating to contacts with the medical personnel (Manulik et al., 2016). Quality service managers in healthcare facilities should focus on all dimensions of the SERVQUAL model when making service quality-related improvements and not just those identified by patients as priorities (Manulik et al., 2016). The monitoring of quality-related perceptions and expectations by

means of instruments such as the SERVQUAL model, should be a permanent element of the marketing activities performed at a health facility (Manulik et al., 2016). In this study, therefore, I explored patients' experiences and factors necessary for patient satisfaction of home oxygen services using the SERVQUAL model as the conceptual basis. Fraihi and Latif (2016) assessed both perceptions and expectations of patients who use hospital outpatient services by employing the SERVQUAL model as well as factors influencing the gaps between patients' perceptions and expectations. The dimensions of the SERVQUAL model had a good fit in this study and the significant gaps of all five dimensions need to be addressed by management to assure service improvement (Fraihi & Latif, 2016). The patients' expectations exceeded perceptions in all service quality dimensions indicating statistically significant service quality gaps with the empathy dimension contributed to most patients' expectations and perceptions scores (Fraihi & Latif, 2016). Patients' perceptions and expectations for service quality cannot be collected by one instrument; therefore, it is important to conduct qualitative research along with quantitative methods to better understand the complexity of service quality in future studies (Fraihi & Latif, 2016). This suggests the need for qualitative studies employing the SERVQUAL model such as that concerning patients' experiences and factors identified as important to patient satisfaction of home oxygen services.

As the SERVQUAL model is a quantitative tool, it must be adapted to be employed within qualitative studies. Pramanik (2016) measured the perception of patients regarding quality of healthcare services in India along with a comparative study on urban and rural hospitals. The status of healthcare service quality along with the preferred

service dimensions of urban and rural patients in India was investigated through literature review and questionnaire survey and verified using the SERVQUAL scale (Pramanik, 2016). Healthcare service quality was unsatisfactory, and patients' preferences of dimensions were distinct in urban and rural areas (Pramanik, 2016). The difference in patients' preferences of dimensions between urban and rural areas in India may be due to lack of knowledge and costly modern medical substances and treatments (Pramanik, 2016). Once the attributes of healthcare services from the customers' perspective are more clearly understood, service providers will be better able to anticipate consumers' requirements rather than to react to their dissatisfaction (Praminik, 2016). Clarity can be gained by understanding how patients use the five components of the SERVQUAL model in their descriptions of the requirements necessary for their satisfaction with home oxygen services. Al-Neyadi et al. (2018) evaluated the quality of healthcare services by investigating the factors affecting patient satisfaction in private and public hospitals in the United Arab Emirates based on five service quality dimensions of the SERVQUAL model. Results of the study revealed that the perceived healthcare services in private hospitals and public hospitals in the UAE do not significantly vary (AL-Neyadi et al., 2018). The five dimensions of the SERVQUAL appeared to be a consistent and reliable scale for measuring healthcare service quality in the UAE context (AL-Neyadi et al., 2018). Future research should focus on expanding the research instrument with new items and may include questions about the importance of certain variables for the patients (AL-Neyadi et al., 2018).

Expanding the research instrument can be accomplished by exploring factors identified by stakeholders as important to patient satisfaction. The SERVQUAL model is the standard tool for assessing or understanding service quality due to its reliability, its ease of use, results validated through many studies, and its ease in analyzing and interpreting data (Ali, 2018). Despite this, no study that I have found has been performed to explore patients' experiences and self-reported factors necessary for patient satisfaction of home oxygen therapy services using the SERVQUAL model as a conceptual basis.

Problem Statement

As previously stated, I have not found any study to explore patients' experiences and self-reported factors necessary for patient satisfaction of home oxygen therapy services using the SERVQUAL model as a conceptual basis. This study may be the first to do so. Key constructs that align to this problem are patient experience, service quality, and patient satisfaction. The concept of patient experience is linked with patient satisfaction since satisfaction is a result of the various experiences related to their encounters (Berkowitz, 2016). Patient satisfaction is also related to how a service meets expectations and if that service exceeds expectations, service quality is judged to be high; the reverse is true if care is below expectations (Berkowitz, 2016). Therefore, to provide a more complete understanding of patients' satisfaction with home oxygen services, it is necessary to explore patients' experiences, factors from patients' perspective that influence their satisfaction, and how patients use the components of a model or theory in describing those factors necessary for their satisfaction.

Understanding patient experience and satisfaction is key to evaluating the overall quality of care and the betterment of healthcare services (Luo et al., 2018). The results of this study can therefore serve as an indicator of an opportunity to review practices in home oxygen services for a specific population and determine whether there is a need to adjust or improve upon various quality-related measures (Riaz, 2015). The results of this study may also lead to positive social change. Positive social change is the purposive process of developing innovative ideas, processes, and actions that result in the improvement of human and social conditions (Walden University, 2017). These improvements can be made at the individual level, in communities, organizations, populations, or societies (Walden University, 2017). Improving the quality and delivery of home oxygen services at the organizational level may lead to improvements in the health and well-being as well as the social conditions of home oxygen patients resulting in positive social change for that population (Howlett et al., 2021). Individual level social change involves increased awareness and understanding along with attitudinal change resulting in changes at the institutional and community levels (Walden University, 2014). Making improvements in the institutional level of home oxygen services will require individual(s) responsible for providing home oxygen service to make a social change at the individual level by making the necessary attitudinal and behavioral changes that improve service quality.

Purpose of the Study

Despite previous studies focusing on healthcare service quality employing different approaches and associated factors, as well as from the perspective of various

stakeholders, there seems to be a paucity of studies exploring factors necessary for patients' satisfaction of home oxygen services. The purpose of this study was to explore patientss' experiences and factors that are deemed necessary to their satisfaction with home oxygen services. This study and the corresponding research questions were addressed employing a phenomenological approach as many patients' perspectives concerning their experiences and factors necessary for their satisfaction with home oxygen services is sought. The phenomenological approach focuses on exploring how human beings make sense of experiences by methodologically and thoroughly capturing and describing how people perceive, judge, remember, or make sense of some phenomenon (Patton, 2015). Gathering data describing how people experience some phenomenon requires the undertaking of in-depth interviews with people who have firsthand experience with the phenomenon of interest (Patton, 2015). The phenomenological approach allowed for a deeper understanding of patients' lived experience with home oxygen services of the phenomenon by allowing them to describe firsthand their perceptions of the service provided. This study was descriptive in that it described a phenomenon (i.e., patients' experiences with home oxygen services) and the real-life context in which it occurred (Elmoselhy, 2018). The conceptual basis employed in this study is SERVQUAL model and its five-dimensional structure.

Research Questions

I sought to gain an understanding of patients' experiences and self-reported factors that are deemed important to their satisfaction of home oxygen services by answering three research questions:

1. How do patients with recurring LTOT prescriptions describe their experiences with home oxygen services?
2. How do patients with recurring LTOT describe the factors that are deemed important or necessary to their satisfaction with home oxygen services?
3. How are the five components of the SERVQUAL model, used in patients with long-term oxygen prescriptions, descriptions of the factors necessary for their satisfaction with home oxygen services?

Conceptual Framework

The conceptual basis of this study is Parasuraman's model of service quality, SERVQUAL. The measurement, evaluation, and monitoring of service quality has been confirmed an essential component to gaining a competitive advantage in the healthcare arena (Kalaja et al., 2016; Manulik et al., 2016). Service quality can be defined as conformance to customer or patient specifications and patients' perceptions are considered a primary indicator when assessing the quality of service (Kalaja et al., 2016). Healthcare service quality can also be defined as the patients' evaluations of the complete healthcare package delivered to both meet and exceed the patients' needs (Agyapong et al., 2018). Evaluations made by patients reflecting their perceptions on healthcare are often based on both interpersonal and environmental factors and are necessary in understanding the importance of the intersecting relations between patients, satisfaction, and quality of life (Kalaja et al., 2016). Interpersonal factors may include personal qualities, knowledge, and skills, whereas environmental factors include convenient hours of operation, facility cleanliness, and privacy settings (Adhikary et al., 2018).

Understanding service quality and its relation to these interpersonal and environmental factors can help organizations identify their competitive advantage, prevent resource waste, and improve patient satisfaction (Fan et al., 2017). Service quality has been interpreted as a subjective construct that is dependent on contrasting patients' expectations of these interpersonal and environmental factors with their perceptions of the quality of service provided (Fan et al., 2017). Parasuraman, Zeithaml, and Berry studied those factors in relation to customers' perceptions and expectations regarding service quality in their 1985 article "A conceptual model of service quality and its implication for future research" (Fan et al., 2017). In this article, the authors proposed the "service quality gap model" or SERVQUAL (SERV-service, QUAL-quality) model which originally had 10 dimensions but was cut down to five (Fan et al., 2017).

The SERVQUAL model posits that service quality is related to patients' expectations before and during their acquired services and their perception of quality following the services specifically as they relate to the five dimensions (Zun et al., 2018). Good service quality always leads to high patient satisfaction and achieving high patient satisfaction requires being concerned with the five dimensions (Ahmed et al., 2017). Patient satisfaction with any corresponding dimension is indicative of patient expectations being met and results in a positive service quality gap (Zun et al., 2018). Patient dissatisfaction with any corresponding dimension is indicative of patient expectations not being met and results in a negative service quality gap (Zun et al., 2018). If patients' perceptions and expectations of hospital or health services were equal, the service quality gap is zero (Rezaei et al., 2018).

Researchers have shown increasing interest in examining the link between the SERVQUAL model and several factors related to organizational success (Ahmed et al., 2017). Several service quality studies conclude that the SERVQUAL model and its corresponding dimensions not only influence patient satisfaction but also impact organizational success-related factors such as loyalty in healthcare organizations, experience-related positive word of mouth, healthcare service costs, and profitability of healthcare services (Ahmed et al., 2017). A more thorough explanation of the connection among key elements of the SERVQUAL model will take place in Chapter 2.

This study focused on how patients with LTOT describe their experiences with home oxygen services, self-reported factors identified as important to patients' satisfaction with home oxygen services, and how the five components of the SERVQUAL model are used in the descriptions of the factors necessary for patients' satisfaction of home oxygen services. This aligns with the purpose of qualitative inquiry, which is to discover and describe in narrative reporting something of interest done in the lives of individuals (Winter, 2016). This study, used to understand patients' perceptions of their experiences and expectations of satisfaction in regard to the dimensions of the SERVQUAL model, is designed to be integrated in the exploration of factors needed for patient satisfaction of home oxygen therapy services. The in-depth interview questions used in this study were designed to elicit thick descriptions concerning this study phenomenon. Interview questions used to obtain data regarding patients' satisfaction with home oxygen services were designed to elicit responses describing the patients'

perceptions of what they require for satisfaction and whether those descriptions support each dimension of the SERVQUAL model.

Nature of the Study

Methods used in conducting academic studies may be qualitative, quantitative, or mixed methods. I employed qualitative methodology in exploring patients' experiences and factors identified as important for their satisfaction of home oxygen services. Data from this study were analyzed using words and concepts derived from in-depth interviews. This is in line with the notion that qualitative studies are concerned with understanding the social phenomena from the participants' perspectives (Nomazulu Ngozwana, 2018).

This qualitative study was performed following the interpretivist paradigm. Within the interpretivist paradigm, knowledge is generated through the in-depth exploration of the meaning and understanding that individuals assign to their environment (Kennedy, 2019). Use of this paradigm creates rich insight into patients' experiences and factors necessary for their satisfaction of home oxygen services (Kennedy, 2019).

Qualitative methods are often used by researchers in healthcare settings. Qualitative research is critical for multiple and various issues across all health professions (Squires & Dorsen, 2018). When the in-depth perspectives of stakeholders are desired, qualitative designs are often the best methodological choice to ensure that their viewpoints and experiences are accurately captured (Squires & Dorsen, 2018). Through the qualitative methodology, I explored patientss' experiences, factors identified as

important to patients' satisfaction of home oxygen services, and how patients use the five components of the SERVQUAL model in their descriptions of the factors necessary for their' satisfaction of home oxygen services.

The quantitative research method is used to predict phenomena and control variables through the process of identifying and isolating specific variables to discover correlation, relationship, and causality of those variables (Park & Park, 2016). I did not intend to discover correlations, relationships, or causalities of variables; therefore, the quantitative method was not appropriate. The samples selected in quantitative studies are usually large in number, representative of the population of interest, and are randomly selected (Park & Park, 2016). The selection of participants in this study was such that the quantitative method was, again, not appropriate.

Mixed methods research involves the collection and analysis of both qualitative and quantitative data (Mabila, 2017). The mixed method research design was not appropriate for this study as the purpose did not require the combination of quantitative and qualitative approach to explore patients' experiences with home oxygen services, factors necessary for patients' satisfaction with home oxygen services, or how patients use the five components of the SERVQUAL model in their descriptions of the factors necessary for their satisfaction of home oxygen services. While it is often believed that mixed methods research designs improve the quality of evidence and build strong foundational knowledge, this method was also not employed due to cost and time constraints (Hendren et al., 2018).

Several qualitative methodologies exist that could have served as the methodology for this study. Potential qualitative designs include ethnography, grounded theory, phenomenology, and narrative design (Liu, 2016). In this study, patients with LTOT had the opportunity to share their perceptions of their experiences of home oxygen services. The narrative design was not selected as a collection of individuals lived and told experiences with the aim of conveying a message was not suitable for this study (Creswell & Poth, 2018). The purpose of this study was not to search for theory and as such, grounded theory was not appropriate to use (Creswell & Poth, 2018). An ethnographical design was not appropriate for this study since the purpose of this study does not entail describing a culture and analyzing patterns of cultural themes using verbatim quotes from individuals (Creswell & Poth, 2018). A phenomenological approach is appropriate for this study as the goal of this study is to obtain comprehensive descriptions, from the perspective of patients with LTOT, of patients' experience and factors necessary for their satisfaction with home oxygen services (Ravitch & Carl, 2016).

I collected data from in-depth interviews of patients with recurring LTOT prescriptions. Data from face-to-face interviews concerning patients' experiences and self-reported factors identified as important for their satisfaction of home oxygen services were then analyzed using Colaizzi's seven-step method of phenomenological analysis and categorized (see Appendix C). These categories were based on the SERVQUAL model in terms of five dimensions, tangibility, reliability, responsiveness, empathy, and assurance. These dimensions have explicit definitions and as such, the categories will be

based on the definitions relating to the dimensions (Graneheim et al., 2017). While Colaizzi's approach to data analysis was used for the first two research questions of this study, the directed or deductive approach to data analysis can be used when the purpose of the research is to search for specific concepts or categories often based on prior research or literature as it is in the third research question (Ravitch & Carl, 2016). The deductive approach aligns with the research question, how are the five components of the SERVQUAL model, used in patients with long-term oxygen prescriptions, descriptions of the factors necessary for their satisfaction with home oxygen services?

Definitions

The five dimensions of the SERVQUAL model are defined as follows:

- Reliability (ability to perform services accurately);
- Tangibles (physical facilities, staff, equipment, building, appearance etc.);
- Responsiveness (willingness to help and respond to customer needs);
- Empathy (attention, caring and individual service is given to the customer);
- Assurance (staff ability to inspire, confidence, trust and courtesy to bank staff) (Ali & Raza, 2017).

Assumptions

This research was based on many assumptions, including that patients have a general interest in helping to improve their experiences with various healthcare services. According to Calabro et al. (2018), the importance of the patient perspective is recognized as an essential component to both healthcare quality and patient-centered care. Another assumption was that home oxygen users, who are burdened with healthcare

issues, would be willing and available to participate in this study based on their experiences and factors needed for them to be satisfied with their home oxygen services.

Scope and Delimitations

Qualitative research in healthcare is an increasingly complex research field particularly concerning phenomenology as there are several interpretations regarding the phenomenological approach (Sundler et al., 2019). Based on Husserl's work in phenomenology, the European philosopher Heidegger pioneered the phenomenological study of existence (i.e., phenomenological ontology; Churchill & Wertz, 2015). Martin Heidegger, initially a student of Husserl and later his assistant, rejected the idea of human being/subject as a spectator of objects maintaining that both the subject and object were inseparable (Horrigan-Kelly et al., 2016). Heidegger challenged Husserl's transcendental or descriptive phenomenology as it eliminated the essential structures of the consciousness (Horrigan-Kelly et al., 2016). Heidegger advocated the idea that phenomenology requires interpretation of experience as well as the clarification of "the meaning of being (Horrigan-Kelly et al., 2016). For Heidegger, "the meaning of being" was thus the descriptions or accounts that *Dasein* (being there or man's existence) provided of their everydayness or ordinary existence (Horrigan-Kelly et al., 2016). Heidegger's philosophy acknowledges that "being in the world" is understood as man's inseparability from the world and thus rejected Husserl's method of phenomenological reduction, bracketing, and transcendental ego (Horrigan-Kelly et al., 2016). Heidegger critiqued Husserl's notion of reduction because of its attempt to explore consciousness separate from the world in which the individual is living (Horrigan-Kelly et al., 2016).

While Heidegger, like Husserl, was interested in describing human experience, Heidegger was also interested in interpreting human experience but rejected "bracketing" because he accepted that prior understandings impact our interpretations of the world (Rodriguez & Smith, 2018). Heidegger, thus using the philosophy of interpretation called hermeneutics, developed interpretive phenomenology (Rodriquez & Smith, 2018).

For this study, I employed Husserlian descriptive (eidetic) phenomenology instead of interpretive phenomenology as study participants were asked to describe as accurately as possible, a poorly understood phenomenon (patients' experiences with home oxygen services). Descriptive phenomenology is an important approach in areas in which there is little or no evidence that previous research exists, supporting the choice to use the method in this study. No study, that I have found, has been performed using participants from online support groups, to explore patients' experiences with home oxygen services. Prior knowledge and insights that may be used by the researcher to interpret meanings concerning the phenomenon in this study were unnecessary as essential descriptions regarding the purpose of this study could best be obtained from those directly involved (Facebook group members who use home oxygen services). In this study, the impact I might have as the researcher on the inquiry was constantly assessed and biases and preconceptions negated so as not to allow my subjectivity to inform the rich descriptions offered by the participants.

The SERVQUAL model used in this study has received some criticism as a valid tool for the healthcare industry as it was initially designed for use in the service industry (Park et al., 2016). Previous studies have supported the multidimensional nature of the

SERVQUAL scale in different industries, yet no effort has been made to compare the generalized SERVQUAL model factor structure with a domain-specific one in a healthcare setting (Cengiz & Fidan, 2017). Results of a study by Cengiz and Fidan (2017), used exploratory factor analysis as well as confirmatory factor analysis to show that a domain-specific scale was a better fit with the healthcare quality-related data than the original SERVQUAL model scale. Another emerging patient-centric quality assessment framework, other than the SERVQUAL model, specifically designed for the healthcare service domain divides customers' experience into extrinsic and intrinsic values (Park et al., 2016). The framework posited that the extrinsic value is derived from functional value which captures aspects related to the usefulness and effectiveness of the service while the intrinsic value is derived from emotional value (active and reactive) (Park et al., 2016). These categories are said to be more suitable for healthcare services as they involve the emotional and social dimensions present in patient interactions (Park et al., 2016). This proposed patient-centric framework was also built upon the aggregation of multiple touchpoints as typical healthcare service is comprised of a series of service encounters or touchpoints, such as setting up appointments, reception, waiting, and healthcare provider interaction (Park et al., 2016). Despite the criticisms of the use of the SERVQUAL model in healthcare, the validity and reliability of the SERVQUAL model's five-dimensional structure has repeatedly been confirmed, and as such, the SERVQUAL model is still widely used in healthcare settings (Cengiz & Fidan, 2017).

Limitations

Trustworthiness in qualitative studies refers to whether the findings can be trusted to faithfully describe the research participants' experiences (Korstjens & Moser, 2018). Trustworthiness is viewed as a goal that necessitates systematic and methodological processes in the endeavor to achieve the goal (Ravitch & Carl, 2016). Although trustworthiness can never be fully ensured due to the complex lives and contexts qualitative researchers seek to explore, there are concepts that can be applied to the study to increase trustworthiness (Ravitch & Carl, 2016). Concepts were applied in this study to increase trustworthiness such as transferability and dependability (Ravitch & Carl, 2016). While this is the case, limitations or characteristics of the study design or methodology may be present that influence the interpretation of the study findings decreasing trust in those findings.

Transferability is how applicable qualitative studies are to broader contexts while still maintaining their context-specific richness (Ravitch & Carl, 2016). Transferability, or the case-to-case generalizability of the inquiry, was assured by providing detailed descriptions of the phenomenon, the research methodology, and the research analysis (Nowell et al., 2017). Detailed descriptions of the phenomenon, the research methodology, and the research analysis I provided in this study ensured that those who seek to transfer the findings or various aspects of this study to their own site can accurately judge whether those findings or aspects can and should be transferred (Nowell et al., 2017). Providing thorough descriptions of all facets of the research can aid other researchers to understand the multiple perspectives that define the phenomenon under

study so they may develop new conceptualizations of the phenomenon (Moon et al., 2016). While the above-mentioned steps were taken to mitigate transferability limitations, those limitations may still be present. Limitations relating to transferability are due to the nature of qualitative studies in that qualitative research is specific to both a small environment and a small number of study participants making it difficult to apply the findings to other populations.

Dependability refers to the consistency or stability of data over time (Ravitch & Carl, 2016). Dependability means that there is a reasonable argument for how the study's data are collected, and that the data are consistent with the argument (Ravitch & Carl, 2016). In order for studies to be considered dependable, the appropriate research methods must be used, and an argument must be made as to why specific research methodologies used are appropriate for answering the core concepts and constructs of the study (Ravitch & Carl, 2016). Dependability was achieved in this study by providing detailed documentation of the research design and implementation and by developing a thoroughly articulated justification for these research methodology choices (Moon et al., 2016; Ravitch & Carl, 2016). Developing a thoroughly articulated justification for research methodology choices helps to confirm the appropriateness of the data collection plan considering the research questions (Ravitch & Carl, 2016). While the above-mentioned steps were taken to mitigate dependability limitations, those limitations may still be present. Limitations that may influence dependability include those limitations concerning data collection, data analysis, and theory generation.

Also having the potential to influence study finding are biases. Performing a phenomenological study requires being cognizant of potential biases that the researcher may insert into various aspects of the study. A type of bias that may occur and must be recognized is interviewer or researcher bias. Researcher bias occurs when a researcher's personal views and opinions are allowed to interfere with the study's objectivity by affecting how data are interpreted and how the study is conducted (Cypress, 2017). This type of bias is evident when the researcher uses certain language, phrases, or asks leading questions prompting the respondents to reply in a manner that reflects what they believe the researcher wants to hear (Jager et al., 2020). Engaging in reflexivity using interviewer logs detailing how these presumptions and perceptions may influence the results of the interview and the entire study was a part of the research design as a means of enhancing the trustworthiness, transparency, and accountability of the research (Roller, 2020).

Significance

Significance to Discipline

Patient satisfaction and service quality should be considered together for the balance and stability of healthcare organizations (James et al., 2017). The perceived quality of an identified service would be the outcome of an evaluation process, where the patient compares their expectations with the perceived service (James et al., 2017). If provided care and services meet or exceed expectations, the result is expected to be an improvement in the level of satisfaction (James et al., 2017). Therefore, the conceptual basis for this study was the SERVQUAL model. The SERVQUAL model, developed by Parasuraman in 1985, posits that service quality is determined by five dimensions and the

gap between patients' perceptions and expectations of these dimensions determine patient satisfaction (James et al., 2017). The five dimensions of the SERVQUAL model's key factor structure that influence patient satisfaction include tangibility (equipment, appearance and physical facilities), reliability (accurate and independent service providing ability), responsiveness (willingness in help customers and providing prompt services), empathy (caring and individualized attention towards customers, covering access to and understanding of the customers) and assurance (service providers' knowledge, ability and courtesy to show trust and confidence) (James et al., 2017). An exploration of these dimensions regarding patients' perceptions and expectations of home oxygen services could aid determining areas of needed improvements. It is, therefore, the purpose of this study, to explore patients' experiences and factors identified by patients that are deemed important to their satisfaction with home oxygen services. These factors identified by patients can be construed as their expectations of home oxygen services.

Significance to Practice

This study addressed a gap in understanding by specifically focusing on patients' experiences and self-reported factors that influence their satisfaction with home oxygen services. This project is unique in that no study was found to explore patients' experiences and self-reported factors that are deemed important to their satisfaction of home oxygen services. Suggestions have been made that healthcare services and providers should focus on patients' experiences to improve patient satisfaction (Berhane & Enquselassie 2016). Studies should include various healthcare services and their providers to develop a complete picture of patient satisfaction and the match in

expectation between patients and health service providers (Berhane & Enquselassie 2016). Exploring patient satisfaction of healthcare services and their providers is not only crucial to the understanding of overall quality of care, but also highlights factors needed to be addressed for overall improvement of healthcare services (Luo et al., 2018). The results of this study can serve as an indicator of an opportunity to review practices in home oxygen services as they relate to various quality service gaps and the need to adjust or improve upon specific quality-related measures (Kennedy, 2017).

Studies have also shown that a culture of patient engagement drives the patient experience by supporting the exchange of ideas among healthcare stakeholders, reducing patients' fear of healthcare procedures and therapies, and strengthening patients' confidence in the healthcare provider (Jha et al., 2017). Engaging patients with communicative tools exploring their perceptions and experiences results in a paradigm shift from doing things for the patient to doing things with the patient (Jha et al., 2017). Patient engagements relating to the understanding of patients' perceptions and experiences, have been shown to lead to better clinical outcomes, quality of life, and reduced healthcare costs (Jha et al., 2017). Most studies aimed at understanding patient experience, though, are based on inpatient settings (Jha et al., 2017). Further research is needed for outpatient and ambulatory services regarding services design and other organizational variables (Jha et al., 2017). This study, using patients on LTOT to explore patients' experience and self-reported factors that are deemed necessary for their satisfaction with home oxygen services, required the use of outpatient service.

Significance to Social Change

This study, addressing a gap in understanding by specifically focusing on patients' experiences and self-reported factors that influence their satisfaction with home oxygen, is unique in that no study that I have found, has been performed to explore this topic. Furthermore, there is a need for better-designed patient satisfaction studies to address the shifting trend from inpatient to outpatient healthcare services, such as home oxygen services, since a majority of performance measurement studies are currently based on inpatient settings (Jha et al., 2017). The exploration of patient satisfaction in any setting is key to understanding the overall quality and as such, the betterment of healthcare services in general (Luo et al., 2018). As such, the results of this study can serve as an indicator of an opportunity to review practices in home oxygen services for a specific population and determine whether there is a need to adjust or improve upon various quality-related measures. The results of this study may also lead to positive social change. Positive social change is the purposive process of developing innovative ideas, processes, and actions that result in the improvement of human and social conditions (Walden University, 2017). These improvements can be made at the individual level, in communities, organizations, populations, or societies (Walden University, 2017). Incorporating continuous improvement practices at the organizational level, such as improvements in the quality and delivery of home oxygen services, drives healthcare process improvements (Bastian et al., 2016). Health service quality has been shown to impact individual health and thus the social conditions of the individual resulting in positive social change (Office of Disease Prevention and Health Promotion, 2019).

Individual level social change involves increased awareness and understanding and attitudinal change resulting in changes at the institutional and community levels (Walden University, 2014). Making improvements in institutional level home oxygen service delivery will require individual(s) responsible for providing home oxygen service to make a social change at the individual level by making the necessary attitudinal and behavioral changes that improve service quality.

Summary

The establishment of the Affordable Care Act (ACA) along with the CMS Quality Services has precipitated policies that place an emphasis on providing a quality experience for patients navigating the healthcare system (Berkowitz, 2016). Assessing patients' experiences is a federally mandated objective to help ensure that delivered care is patient-centered (Cavanaugh, 2016). Patient experiences, particularly of healthcare-related processes and structures are determinants of patient satisfaction which as previously stated, is a component of patient-centered care (Al-Momani, 2016; Shabbir et al., 2016; Wilson et al., 2016). Since patient satisfaction is an important aspect of healthcare service quality, measuring service quality is a necessity that requires the utilization of a model taking both patient satisfaction and service quality into consideration (Pramanik, 2016). The SERVQUAL model remains one of the most popularly accepted methods for measuring service quality employing patient satisfaction-related tenants (Pramanik, 2016). As such, in this study, I explored patient satisfaction of home oxygen services by focusing on patients' experiences and factors necessary to their

satisfaction of their home oxygen service using the SERQUAL model as the conceptual basis.

Chapter 2: Literature Review

As previously stated, I have not found any study to explore patients' experiences and factors necessary for satisfaction of home oxygen services. Key constructs that align to this problem are patient experience, service quality, and patient satisfaction. The concept of patient experience is linked with patient satisfaction since satisfaction is a result of the various experiences related to their encounters (Berkowitz, 2016). Patient satisfaction is also related to how a service meets expectations and if that service exceeds expectations, service quality is judged to be high; the reverse is true if care is below expectations (Berkowitz, 2016). Despite previous studies focusing on healthcare service quality employing different approaches and associated factors, as well as from the perspective of various stakeholders, there seems to be a paucity of studies using participants from online support groups, exploring factors necessary for patients' satisfaction of home oxygen services. The purpose of this study, therefore, was to explore patients' experiences and factors that are deemed necessary to their satisfaction with home oxygen services.

Relevant Scholarship

Policies triggered by the establishment of the ACA and the CMS Quality Services, have prioritized healthcare that delivers quality patient experience (Berkowitz, 2016). Patients' perceptions of their overall experiences with health services are a principal factor in not only exploring performance and healthcare quality, but also in receiving reimbursements and making necessary service-related improvements (Samsson et al., 2017). Since reimbursement and performance policies based on patient experience

have become normative within healthcare, more research offering clarity around factors that impact patients' experiences is available (Berkowitz, 2016). Clèries et al. (2016) assessed the opinions, perceptions, and attitudes of patients and their caregivers regarding home oxygen. High appreciation for healthcare providers along with the need for better coordination between various levels of care and companies supplying oxygen were demonstrated. A comprehensive study to identify basic home oxygen therapy service quality issues would be useful (Clèries et al., 2016). These issues can be discovered by performing studies that seek to understand patients' experiences with home oxygen services as the exploration of patient experience is a major component of healthcare quality. Bueno et al. (2022) sought to understand the experiences of elderly people with COPD using LTOT with respect to their feelings attributed to therapy. In this study, it was found that LTOT in elderly people with COPD was associated with a poor self-image, feelings of sadness and impacted on others apart from the patient (Bueno et al., 2022). This study's findings that LTOT negatively impacted on self-image are consistent with patient experiences described in my study. In this study, it was found that the psychological condition associated with the condition causing the need for LTOT is responsible for this lack of control, causing the patient to feel ashamed to attract even more attention (Bueno et al., 2022). Self-care may be compromised, leading to embarrassment, worsening self-image, decreasing pleasure and worsening isolation for these patients (Bueno et al., 2022). When LTOT is prescribed, healthcare practitioners should proactively address these concerns to minimize the negative biopsychosocial experiences caused by LTOT (Bueno et al., 2022). These concerns can be discovered by

exploring patients experiences with home oxygen services using the SERVQUAL model. Gualandi et al. (2019) performed a qualitative study of orthopedic patients with the aim of understanding how different methodologies of qualitative research can capture patient experience of the hospital journey. Eight patients were shadowed from their initial hospital admittance to the time they were transferred to rehabilitation. Four patients and 16 healthcare workers were interviewed concerning the patients' journey. Four main themes emerging from the data were the information gap, the covering patient-professionals relationship, the effectiveness of family closeness, and the micro-integration of hospital services. The three different standpoints (patient shadowing, health professionals' interviews and patients' interviews) allowed different issues to be captured in the various phases of the patients' journey (Gualandi et al., 2019). Hospitals can make significant improvements to the quality of service provided by exploring and understanding the individual patient journey in relation to the different standpoints (Gualandi et al., 2019). Further studies in the academic field can explore practical, methodological, and ethical challenges more deeply in capturing the whole patient journey experience by using multiple methods and integrated tools (Gualandi et al., 2019).

Phenomenological exploration of the patient journey experience occurs in studies such as the proposed exploration of patients' experiences and factors necessary for their satisfaction of home oxygen services using the SERVQUAL model. Anhang Price et al. (2018) assessed the quality of outpatient and inpatient care in VA at the national level and facility level and compared performance between VA and non-VA settings using

recent performance measure data. Findings from this study indicate that VA hospitals performed on average the same as or significantly better than non-VA hospitals on all six measures of inpatient safety, all three inpatient mortality measures, and 12 inpatient effectiveness measures, but significantly worse than non-VA hospitals on three readmission measures and two effectiveness (Anhang Price et al., 2018). The performance of VA facilities was also significantly better than commercial health maintenance organizations (HMOs) and Medicaid HMOs for all 16 outpatient effectiveness measures and for Medicare HMOs, it was significantly better for 14 measures and did not differ for two measures (Anhang Price et al., 2018). High variation across VA facilities in the performance of some quality measures was observed, although variation was even greater among non-VA facilities (Anhang Price et al., 2018). The observed high variation in the performance of some quality measures across both VA facilities and non-VA facilities indicate a need for targeted quality improvement to ensure that both Veterans and civilians receive uniformly high-quality care at all healthcare facilities (Anhang Price et al., 2018). This can be achieved by systematically performing studies such as this, exploring patients' experiences and factors that are deemed important to their satisfaction with home oxygen services. This may lead to measurable quality improvements in home oxygen services. AlMutairi et al. (2018) explored the perceived limitations that chronic obstruction pulmonary disease (COPD) patients experience when using LTOT devices. Findings from this study suggests that the type of LTOT device plays a significant role in patients' overall quality of life, specifically relating to their level of mobility and freedom of choice regarding daily activities, choice

of work, and social interactions (AlMutairi et al., 2018). There is a need for more studies that are designed to discover, from COPD patients' perspectives and experiences, which outcomes matter most (AlMutairi et al., 2018). This can be initiated by exploring patients' experiences with home oxygen services as LTOT is often recommended for COPD patients by current treatment guidelines (Pavlov, Haynes, Stucki, Jüni, & Ott, 2018). Khor, Goh, McDonald & Holland (2017), explored the experiences and perspectives of adults with interstitial lung disease (ILD) concerning their use and nonuse of domiciliary oxygen. Findings from this study suggest that patients naïve to oxygen therapy expected oxygen to relieve dyspnea whereas patients not naïve to oxygen therapy emphasized physical benefits not related to dyspnea (Khor et al., 2017). These physical benefits include increased energy as well as an improved activity level (Khor et al., 2017). With the paucity of knowledge related to the use of oxygen therapy with ILD, future studies should address patients' concerns and information related to oxygen therapy to improve outcomes afforded using oxygen on ILD (Khor et al., 2017). Addressing these concerns can be initiated by exploring patients' experiences with home oxygen services as ILD is a pulmonary disease often requiring the use of LTOT and therefore home oxygen services. Almost 2 million adults in the United States use supplemental oxygen therapy for a plethora of respiratory disorders to prolong survival and improve their quality of life (Jacobs et al., 2018). The demand for LTOT is increasing and it is a key service where quality, efficiency, patient experience, outcomes, and value for money are important factors (Pickstock, 2016). Nevertheless, this was the

first study that I have found, to explore both patient experiences and factors necessary for their satisfaction of home oxygen services.

The major sections of this chapter include the literature search strategy, conceptual framework, the literature review related to key variables and concepts, and the summary and conclusion. The literature search strategy section contains information concerning the search terms used as well as the various databases and search engines used in this study. The conceptual framework section contains information about writings by key philosophers and seminal researchers relating to this study's phenomenon and concepts. The literature review related to key variable and concepts section contains descriptions of studies relating to the methodology and methods consistent with the scope of this study. The summary and conclusion section contains summaries of major themes found in the literature, what is not known in the discipline related to the topic of study, and who this study will fill a gap in the literature.

Literature Search Strategy

Searching for relevant literature, I used both the Thoreau Multi-Database Search and the CINAHL & MEDLINE combined search. The searches were limited to peer-reviewed, full-text, scholarly journals published since 2016. I first performed a search using the terms *satisfaction, patient perception or attitude or opinion or experience or* perspectives or views or feelings or thoughts (268 results from Thoreau Multi-Database Search). I also performed a search using the terms *patient satisfaction and oxygen therapy* (116 results from Thoreau Multi-Database Search). I also searched for articles using the search terms, *satisfaction, outcome assessment,* and *qualitative study* (478

results from Thoreau Multi-Database Search). The search terms *service quality, patient satisfaction,* and *healthcare* were also used (1,470 results from Thoreau Multi-Database Search). Searches across the same database were used, targeting peer-reviewed printed material employing a combination of the constructs of interest within the same period. Specifically, the search term combinations used were *service quality, healthcare, SERVQUAL model, outcome assessment, patient perception or patient perspective or patient experience or patient view,* and *qualitative study*. Using the CINAHL & MEDLINE Combined Search in the Boolean/Phrase search mode, narrowing the search to full-text articles published since 2016, and employing the same combination of terms derived fewer and more specific results. Using the terms, *satisfaction, patient perception,* and *oxygen* (48 results). Using the terms, *satisfaction, outcome assessment,* and *qualitative study* produced 69 results. The search terms *service quality, patient satisfaction,* and *healthcare* produced 363 results. Searches across the CINAHL & MEDLINE Combined Search database were also made using combinations of the terms, *service quality, healthcare, SERVQUAL model, outcome assessment, patient perception or patient perspective or patient experience or patient view,* and *qualitative study*. The results were likewise fewer in number and more specific to the desired subject matter when compared to the Thoreau Multi-Database Search.

Conceptual Framework

Providing the necessary philosophical basis of this study requires a brief introduction to the philosophy of phenomenology as well as its principal founder Edmund Husserl and his contemporary, Martin Heidegger. Husserl, a German mathematician,

introduced his concept of phenomenology in his seminal work, *Logical Investigations*, in 1900. Husserl developed phenomenology as a means of defining a philosophical method different from the natural sciences to which he was disillusioned, which would provide insight into the experiences of conscious objects (Christensen et al., 2017). Husserl's disillusionment occurred with the abstract quantitative nature of mathematics and so he began to question what it (his disillusionment) was related to (Fry et al., 2017). He argued that the "whatness" or essence of a phenomenon was the most important thing to consider and this by its nature involved a qualitative dimension (Fry et al., 2017). Husserl maintained that the "whatness" of a phenomenon could only be clarified by garnering descriptions of the "lifeworld" or the world that is directly experienced in the subjectivity of everyday life (Fry et al., 2017). His main concern was epistemological in nature; to provide a foundation for inductive knowledge about a phenomenon through the study of this "lifeworld" (Jackson et al., 2018). In order to reach the essence of a phenomenon, Husserl declared it was necessary to describe, and not measure or explain, its qualities as they were experienced in the lifeworld (Fry et al., 2017). With this understanding, the researcher employing Husserl's approach to phenomenology, also known as descriptive or transcendental phenomenology, should focus descriptively on how the phenomenon is qualitatively experienced (Fry et al., 2017). Husserl believed that getting to the essence of a phenomenon requires bracketing the natural attitude, or everyday ways of thinking and being (Allen-Collinson & Evans, 2019). Bracketing, also called phenomenological reduction, is central to Husserlian descriptive phenomenology and entails standing back from extant beliefs and presumptions about a phenomenon to return 'to the thing's

themselves' (Allen-Collinson & Evans, 2019). In other words, bracketing involves seeking the essence of a phenomenon by removing what is perceived through the act of phenomenological reflection (Englander, 2016). Phenomenological reflection, a metacognitive act, is the practice of rigorous and introspective self-examination with the aim of understanding one's biases and presuppositions and suspending those beliefs to not influence data analysis or the participants' description of their experiences (Mortari, 2015). Upon the successful use of phenomenological reflection to bracket out subjective perceptions and presumptions, the researchers arrive at the epoché (Butler, 2016). This epoché, simply put, is the point at which the descriptions of the study participant's understanding of the phenomenon are free from the researcher's influence.

Qualitative research in healthcare is an increasingly complex research field particularly concerning phenomenology as there are several interpretations regarding the phenomenological approach (Sundler et al., 2019). Based on Husserl's work in phenomenology, the European philosopher Heidegger pioneered the phenomenological study of existence (i.e., phenomenological ontology; Churchill & Wertz, 2015). Heidegger, initially a student of Husserl and later his assistant, rejected the idea of human being/subject as a spectator of objects maintaining that both the subject and object were inseparable (Horrigan-Kelly et al., 2016). Heidegger challenged Husserl's transcendental or descriptive phenomenology as it eliminated the essential structures of the consciousness (Horrigan-Kelly et al., 2016). Heidegger advocated the idea that phenomenology requires interpretation of experience as well as the clarification of "the meaning of being (Horrigan-Kelly et al., 2016). For Heidegger, "the meaning of being"

was thus the descriptions or accounts that *Dasein* (being there or man's existence) provided of their everydayness or ordinary existence (Horrigan-Kelly et al., 2016). Heidegger's philosophy acknowledges that "being in the world" is understood as man's inseparability from the world and thus rejected Husserl's method of phenomenological reduction, bracketing, and transcendental ego (Horrigan-Kelly et al., 2016). Heidegger critiqued Husserl's notion of reduction because of its attempt to explore consciousness separate from the world in which the individual is living (Horrigan-Kelly et al., 2016). While Heidegger, like Husserl, was interested in describing human experience, Heidegger was also interested in interpreting human experience but rejected bracketing because he accepted that prior understandings impact our interpretations of the world (Rodriguez & Smith, 2018). Thus, using the philosophy of interpretation called hermeneutics, Heidegger developed interpretive phenomenology (Rodriquez & Smith, 2018).

This study employed Husserlian descriptive (eidetic) phenomenology instead of interpretive phenomenology as study participants were asked to describe as accurately as possible, a poorly understood phenomenon. Descriptive phenomenology is an important approach in areas in which there is little or no evidence that previous research exists, supporting the choice to use the method in this study. No study, that I have found, has been performed to explore patients' experiences and self-reported factors necessary for patient satisfaction with home oxygen services. Prior knowledge and insights that may be used by the researcher to interpret meanings concerning the phenomenon in this study is unnecessary as essential descriptions regarding the purpose of this study can best be

obtained from those directly involved (patients using LTOT) who are members on online support groups). In this study, my impact as the researcher on the inquiry was constantly assessed and biases and preconceptions negated as to not allow my subjectivity to inform the rich descriptions offered by the participants.

Literature Review

Since the enactment of the ACA, patient engagement has been mandated an essential component of the healthcare process (Heath & Porter, 2017). The focus on patient engagement is due to recent studies demonstrating a clear link between patient engagement and patient satisfaction ratings derived from the HCAHPS survey (Heath & Porter, 2017). These patient satisfaction ratings reflect the patients' perceptions of what occurred during their care and are not only tied to reimbursements but are also important outcomes in healthcare (Heath & Porter, 2017). As such, patient satisfaction has become one of the most keenly studied indicators in healthcare (Voutilainen et al., 2016). Jameel et al. (2019) examined the impact of the SERVQUAL model on patient behavioral consent and explored the mediating role of patient satisfaction on the service quality–patient behavioral consent relationship. A survey questionnaire was used to collect the data from public sector hospitals in Pakistan (Jameel et al., 2019). Using confirmatory factor analysis and structural equation modeling, this study found positive and significant relationships between service quality and patient behavioral consent, service quality and patient satisfaction, and patient satisfaction and patient behavioral consent (Jameel et al., 2019). Results further revealed that patient satisfaction partially mediates the relationship between service quality and patient behavioral consent (Jameel et al., 2019). Assessing

healthcare services by the patient is an individual procedure and using a quantitative technique such as the survey employed, cannot fully echo all the patients' judgments (Jameel et al., 2019). Employing qualitative techniques in addition to the quantitative methodology in future research might offer a greater understanding of the association between the service quality, patient satisfaction, and patient behavioral consent (Jameel et al., 2019). Studies such as this, using a qualitative method to explore patients' experiences and factors that influence their satisfaction of a healthcare service can more accurately reflect the patients' judgements and perceptions of that healthcare service.

Employing qualitative techniques such as those used in this study along with quantitative studies may offer greater understanding of service quality and patient satisfaction when seeking an association with patient behavioral consent. Mussa et al. (2018), evaluated patient satisfaction regarding current portable oxygen delivery devices, perceived mobility, and perceived quality of life. Results of this evaluation revealed that the median perceived device satisfaction score was significantly higher in the liquid oxygen device group compared with the portable oxygen cylinder and portable oxygen concentrator groups (Mussa et al., 2018). Future research is needed to investigate the association between various LTOT devices and physical activity, quality of life, number of exacerbations, and survival in oxygen-dependent individuals with COPD (Mussa et al., 2018). Investigating the association between various LTOT devices and quality of life can be initiated by exploring patients' experiences with and satisfaction of the home oxygen therapy program responsible for providing the various LTOT devices. Ferreira et al. (2017) evaluated sleep apnea patients' satisfaction with the domiciliary care provided

by home respiratory therapy companies, and its influence on therapy adherence. Home respiratory therapy companies are responsible for providing oxygen, aerosol, or ventilation therapy (Ferreira et al., 2017). Results from this study revealed a relation between patient satisfaction and adherence of the various treatments and therapies provided by the home respiratory therapy company (Ferreira et al., 2017). It is important to have more studies in this relevant field, Home Respiratory Therapy Care, due to the important role of these companies in therapy compliance (Ferreira et al., 2017). The aligns with the need to explore patients' experience and factors necessary for their satisfaction of the home oxygen services.

Patient satisfaction is an important concept as it tends to mirror patients' perceptions and expectations about quality (Mohebifar et al., 2016). As such, health service quality and patient satisfaction in relation to patient perceptions and expectations have become some of the most important and keenly studied indicators in healthcare (Mohebifar et al., 2016; Voutilainen et al., 2016). Fraihi and Latif (2016) explored both perceptions and expectations of patients who use hospital outpatient services by employing the SERVQUAL model as well as factors influencing the gaps or differences between patients' perceptions and expectations. The dimensions of the SERVQUAL model had a good fit in this study and the significant gaps of all five dimensions need to be addressed by management officials to assure healthcare service improvement (Fraihi & Latif, 2016). The patients' expectations exceeded perceptions in all service quality dimensions indicating statistically significant service quality gaps with the empathy dimension contributing to most patients' expectations and perceptions scores (Fraihi &

Latif, 2016). Patients' perceptions and expectations of healthcare service quality cannot be collected by one instrument; therefore, it is important to conduct qualitative research along with quantitative methods to better understand the complexity of healthcare service quality in future studies (Fraihi & Latif, 2016). This suggests the need for qualitative studies employing the SERVQUAL model such as that concerning patients' experiences and self-reported factors identified as important to their satisfaction of home oxygen services. As the SERVQUAL model is a quantitative tool, it must be adapted to be employed within qualitative studies. Pramanik (2016) measured the perception of patients regarding quality of healthcare services in India along with a comparative study on urban and rural hospitals. The status of healthcare service quality along with the preferred service dimensions of urban and rural patients in India was investigated through literature review and questionnaire survey and verified using the SERVQUAL scale (Pramanik, 2016). Healthcare service quality was unsatisfactory, and patients' preferences of dimensions were distinct in urban and rural areas (Pramanik, 2016). The differences in patients' preferences of dimension between urban and rural areas in India may be due to lack of knowledge and costly modern medical substances and treatments (Pramanik, 2016). Once the attributes of healthcare service quality from the customers' perspective are more clearly understood, service providers will be better able to anticipate consumers' requirements rather than to react to their dissatisfaction (Praminik, 2016). Clarity can be gained by understanding patients' experiences and self-reported factors necessary for their satisfaction of home oxygen services. Razmjoee et al. (2017) evaluated patients' satisfaction levels and the gap or difference between their

expectations and perceptions in Shahid Rajaee Hospital in Shiraz using the SERVQUAL model and its corresponding dimensions. Results of this evaluation revealed a significant difference between the patients' expectations and perceptions with the largest gap between expectations and perceptions belonging to responsiveness indicating less satisfaction with this dimension (Razmjoee et al., 2017). The largest gap between expectations and perceptions belonged to physical aspect or tangibles indicating the most patient satisfaction with this dimension (Razmjoee et al., 2017). To increase the generalizability of the results to other studies, there is a need to perform studies concerning patient expectations and perceptions in other hospitals, including private hospitals and social con or government funded hospitals (Razmjoee et al., 2017). This can be performed by exploring factors necessary for patients' satisfaction (expectations) and their perceptions of home oxygen services employing the SERVQUAL model. Not only have healthcare quality studies using the SERVQUAL model explored patient satisfaction in relation to their perceptions and expectations, studies employing the SERVQUAL model have also been performed exploring the influence of patient satisfaction on success-related factors such as patient loyalty (Ahmed et al., 2017; Mohebifar et al., 2016). Anabila et al. (2019), investigated the role of service quality (SQ), customer satisfaction (CS) and customer loyalty (CL) in Ghana's health sector and a comparative analysis of private and public hospital service quality. This study draws on the SERVQUAL scale and its five corresponding dimensions. Results of this study revealed that except for reliability, all the other dimensions of the SERVQUAL model (responsiveness, assurance, empathy, and tangibility) had a significant positive effect on

customer satisfaction (Anabila et al., 2019). Customer satisfaction was also shown to have a significant positive effect on customer loyalty illustrating the important role of healthcare practitioners in ensuring that patients are kept satisfied to maintain or improve their loyalty to the hospitals (Anabila et al., 2019). Greater attention should be accorded to service quality as a fundamental component for achieving both customer satisfaction and loyalty (Anabila et al., 2019). Customer satisfaction and loyalty reflect the trust and confidence that patients have in both the healthcare system as well as the healthcare service provider (Anabila et al., 2019). Studies such as this, exploring how LTOT patients, use the five components of the SERVQUAL model in their descriptions of the factors necessary for patient satisfaction with home oxygen services, provide the needed attention to service quality and patient satisfaction. This study may also add to the body of knowledge concerning the fundamental role that service quality plays in customer satisfaction and thus loyalty. Jan & Ishtiaq (2017) assessed and compared patients' satisfaction with services provided in public and private sector hospitals to determine the factors associated with patients' satisfaction in these hospitals. A pre-designed patient satisfaction questionnaire based on the SERVQUAL model was used to collect data (Jan & Ishtiaq, 2017). With regards to factors affecting patient satisfaction, hospital related factors were associated with SERVQUAL dimensions while patient related factors were factors such as age, gender, level of education, and marital status (Jan, & Ishtiaq, 2017). Results of this study revealed that overall patients' satisfaction in private sector hospitals was higher than in public sector hospitals because the quality of care is higher in private sector hospitals (Jan, & Ishtiaq, M, 2017). Hospitals in the private sector received higher

patient satisfaction scores on all indicators of quality of care, for both hospital and patient related factors, except for accessibility where public sector hospitals received higher scores (Jan & Ishtiaq, 2017). Further studies are recommended to determine satisfaction in terms of other components or services of private sector and public sector hospitals (Jan & Ishtiaq, 2017). This can be performed by exploring patient satisfaction in terms of hospital components relating to various healthcare services such as home oxygen services. It must be stated that since the SERVQUAL model is a quantitative tool, it must be modified to be used in qualitative studies.

The use of the SERVQUAL model has received some criticism as a valid tool for the healthcare industry as it was initially designed for use in the service industry (Park et al., 2016). Previous studies have supported the multidimensional nature of the SERVQUAL scale in different industries, yet no effort has been made to compare the generalized SERVQUAL model factor structure with a domain-specific one in a healthcare setting (Cengiz & Fidan, 2017). Results of a study by Cengiz and Fidan (2017), used exploratory factor analysis as well as confirmatory factor analysis to show that a domain-specific scale was a better fit with the healthcare quality-related data than the original SERVQUAL model scale. Another emerging patient-centric quality assessment framework, other than the SERVQUAL model, specifically designed for the healthcare service domain divides customers' experience into extrinsic and intrinsic values (Park et al., 2016). The framework posited that the extrinsic value is derived from functional value which captures aspects related to the usefulness and effectiveness of the service while the intrinsic value is derived from emotional value (active and reactive)

(Park et al., 2016). These categories are said to be more suitable for healthcare services as they involve the emotional and social dimensions present in patient interactions (Park et al., 2016). This proposed patient-centric framework was also built upon the aggregation of multiple touchpoints as typical healthcare service is comprised of a series of service encounters or touchpoints, such as setting up appointments, reception, waiting, and healthcare provider interaction (Park et al., 2016). Despite the criticisms of the use of the SERVQUAL model in healthcare, the validity and reliability of the SERVQUAL model's five-dimensional structure has repeatedly been confirmed, and as such, the SERVQUAL model is still widely used in healthcare settings (Cengiz & Fidan, 2017).

Almost 2 million adults in the United States use supplemental oxygen therapy for a plethora of respiratory disorders to prolong survival and improve their quality of life (Jacobs et al., 2018). The demand for LTOT is increasing and it is a key service where quality, efficiency, patient experience, outcomes, and value for money are important factors (Pickstock, 2016). Despite this, no study that I have found has been performed to explore patients' experiences and factors deemed important to their satisfaction of home oxygen therapy services.

Summary and Conclusions

The establishment of the ACA, along with the CMS Quality Services, has precipitated policies that place an emphasis on providing quality experience for patients navigating the healthcare system (Berkowitz, 2016). Assessing patients' experiences is a federally mandated objective to help ensure that delivered care is patient-centered (Cavanaugh, 2016). Patient experiences, particularly of healthcare-related processes and

structures are determinants of patient satisfaction which as previously stated, is a component of patient-centered care (Al-Momani, 2016; Shabbir et al., 2016; Wilson et al., 2016). Since patient satisfaction is an important aspect of healthcare service quality, measuring service quality is a necessity that requires the utilization of a model taking both patient satisfaction and service quality into consideration (Pramanik, 2016). The SERVQUAL model remains one of the most popularly accepted methods for measuring service quality employing patient satisfaction-related tenants (Pramanik, 2016). As such, I explored patient satisfaction of home oxygen services by focusing on patients' experiences and factors necessary to their satisfaction using the SERQUAL model as the conceptual basis. As previously stated, the SERVQUAL model must be modified to employ in qualitative studies such as this.

Understanding service quality through the exploration of patients' experiences requires that patients reflect on those experiences and provide an account of their perceptions related to the quality of their unique encounter (Cavanaugh, 2016). While healthcare professionals may provide the same service to all patients within each unique encounter, because of the demographic heterogeneity of the patients, each patient may experience or perceive the encounter differently due to the nature of their current condition (Vogus & McClelland, 2016). Ascribed to the diversity-related variations in patient encounters, healthcare quality that is deemed to be high is greatly customized and based on an intimate understanding of the disparate patient population (Vogus & McClelland, 2016). Also causing variations in patient encounters is a knowledge gap between the patients and providers that may be compounded by the sensitive and

vulnerable state of patients and family members coping with complex health problems (Vogus & McClelland, 2016). These conditions make it necessary to collaborate with and involve patients in healthcare services design through the understanding of patient experiences. As a means of providing a clearer basis for actionable improvements as well as the identification of organizational practices that influence positive or negative aspects of patient experiences, efforts have been made to tailor patient assessment measures to specific healthcare delivery contexts and services (Vogus & McClelland, 2016).

To add to the body of literature concerning understanding patient experiences tailored to specific healthcare delivery contexts and services, this study explored patients' experiences and self-reported factors that are deemed important to their satisfaction with home oxygen services. Data concerning patients' experiences and self-reported factors deemed important to patient satisfaction were ascertained from in-depth interviews of patients who use LTOT and who are members of various Facebook home oxygen-related groups. Studies such as this is best explored using the Husserlian approach to descriptive phenomenology as this study's focus is on understanding descriptively, how the poorly understood phenomenon, patients' experiences and factors necessary to their satisfaction of home oxygen services, is experienced.

Chapter 3: Research Method

The purpose of this study was to explore patients' experiences and factors that are deemed necessary to their satisfaction with their home oxygen service. This study employed the SERVQUAL model as the conceptual basis. The purpose of this study was supported by three research questions focusing on how patients with recurring LTOT prescriptions describe their experiences with home oxygen services; factors identified by patients with recurring LTOT as important to their satisfaction with home oxygen services; and how the five components of the SERVQUAL model is used in patients' with LTOT prescriptions, descriptions of factors necessary for their satisfaction of home oxygen services. This chapter is divided into several sections addressing the rationale for the research design, role of the researcher, methodology, selection of participants, instrumentation, pilot study, data analysis, issues of trustworthiness, and summary. The research design and rationale section contain a description as to why the research design for this study was chosen. The role of the research section contains information describing my role in this study and any biases that may be present. The methodology section contains information describing the selection of study participants and the data collection instrument or interview protocol. The pilot study section contains information describing the procedures for recruitment, participation, and data collection associated with the pilot study and the main study. This section also contains information describing the relationship of the pilot study to the main study. The data analysis section contains information describing the procedures for coding the data. The issues of trustworthiness section contain information about the concepts of credibility, transferability,

dependability, and confirmability as they relate to this study. Lastly, the summary contains information summarizing the main points of this chapter.

Research Design and Rationale

In this study, I sought to gain an understanding of patients' experiences and self-reported factors that are deemed important to their satisfaction of home oxygen services by answering three research questions:

1. How do patients with recurring LTOT prescriptions describe their experiences with home oxygen services?
2. How do patients with recurring LTOT describe the factors that are deemed important or necessary to their satisfaction with home oxygen services?
3. How are the five components of the SERVQUAL model, used in patients with long-term oxygen prescriptions, descriptions of the factors necessary for their satisfaction with home oxygen services?

No study that I have found has been performed to explore patients' experiences and factors deemed necessary to their satisfaction of home oxygen therapy services using the SERVQUAL model as the conceptual basis. Gaining an understanding of this phenomenon requires a comprehensive discussion of patient experiences, patient satisfaction, and the SERVQUAL model.

Objective reporting of patients' reflections of their experiences about the quality of their encounters with health services is an important factor driving continual change in the relationship between patients, providers, and healthcare systems (Cavanaugh, 2016). Care that takes these relationships into consideration in all phases, from planning to

delivery, is considered to be patient-centered (Cavanaugh, 2016). In 2011, as a part of the ACA, assessing patient experience became a uniquely federally mandated objective to help ensure that delivered care is indeed patient-centered (Cavanaugh, 2016). Aspects of the ACA instituted policies necessitating care in which (a) respect is maintained for patients' values, needs, and preferences; (b) there is proper dissemination of information and education; (c) emotional support is provided for; and (d) the family is involved (Cavanaugh, 2016). Data related to the patient-centered care characteristics initiated by the ACA can be provided by no one other than the patients through various patient experience assessment tools (Cavanaugh, 2016).

Patient satisfaction is an important outcome related to factors such as both patient experiences as well as their relationship with healthcare providers (Moore et al., 2016). The recent shift towards patient-centered care or care that takes these factors (patient experiences and patient/provider relationship) into consideration, often results in increased attention being given to patient satisfaction studies to identify areas of improvement (Moore et al., 2016). Patients' perception of these factors (patient experiences and patient/provider relationship) have been shown to strongly influence how satisfied they are with their healthcare experiences and can be provided by no one other than the patient or exploring patients' perspectives (Berkowitz, 2016; Cavanaugh, 2016).

This study and the corresponding research questions were addressed employing a phenomenological approach as the phenomenological approach focuses on exploring how human beings make sense of experiences by methodologically and thoroughly capturing and describing how people perceive, judge, remember, or make sense of some

phenomenon (Patton, 2015). Gathering data describing how people experience some phenomenon requires the undertaking of in-depth interviews with people who have firsthand experience with the phenomenon of interest (Patton, 2015). The phenomenological approach allowed for a deeper understanding of patients' lived experience with home oxygen services by allowing them to describe firsthand their perceptions of the service provided. This study was descriptive in that it described a phenomenon (self-reported factors deemed by patients' as important to their satisfaction of home oxygen services) and the real-life context in which it occurred (Elmoselhy, 2018).

This study specifically employed Husserlian's descriptive (eidetic) phenomenological approach instead of Heidegger's interpretive phenomenological approach in that it described as accurately as possible a poorly understood phenomenon (patients' experiences and factors identified as important to their satisfaction of home oxygen services). Descriptive phenomenology is an important approach in areas in which there is little or no evidence that previous research exists, supporting the choice to use the method in this study. No study, that I have found, has been performed to explore patients' experiences and factors deemed necessary to their satisfaction of home oxygen therapy services using the SERVQUAL model as the conceptual basis. Prior knowledge and insights that may be used to interpret meanings concerning the phenomenon in this study is unnecessary as essential descriptions regarding the purpose of this study can best be obtained from those directly involved (factors identified by patients, that contribute to their satisfaction of home oxygen services). In this study, reflexivity was implemented or

my impact as the researcher on the inquiry was constantly assessed, and biases and preconceptions negated as to not allow my subjectivity to inform the rich descriptions offered by the participants.

Role of the Researcher

The reporting of qualitative research across health-related disciplines should address the researcher's reflexivity (Busso & Leonardsen, 2019). This reflexive practice is understood as being integral to the production of rigorous and trustworthy research outcomes (Busso & Leonardsen, 2019). As such, it would behoove qualitative researchers to engage in reflexive processes concerning their own positioning and interactions with the participants (Busso & Leonardsen, 2019). In qualitative studies, employing reflexivity as a methodological tool means that the researcher is devoted to utilizing self-reflection throughout the entire research process (Busso & Leonardsen, 2019). This process of adopting a reflective stance involves attempting to take a fresh look at the world while suspending certain preexisting knowledge. This process has its underpinning in Husserlian philosophy. Along with adopting a reflective stance, I must clarify that my role in this study is that of phenomenological researcher and not as a respiratory therapist or a healthcare worker, it is however acknowledged that these roles influence my knowledge and experience of the phenomenon. In employing reflexivity, the researcher is encouraged to define the origin of his interest concerning the phenomenon under study.

My interest as the researcher in this topic is rooted in my personal experience as a respiratory therapist and grounded in my firsthand experience in assisting the home oxygen coordinator in qualifying and requalifying patients for their recurring LTOT

prescriptions. Conversations with patients concerning their supplemental oxygen revealed the various perceptions that patients have relating to their oxygen usage, equipment, as well as the service provider. The various narratives given by the patients relating to their experiences and satisfaction with home oxygen services spawned multiple questions, which studies have shown need further research. I conducted in-depth interviews to garner the various narratives relating to patients' experiences and factors identified by them as important to their satisfaction with home oxygen services. Adopting a reflective stance while interacting with the study participants requires being cognizant of potential biases that I, as the researcher, may insert into various aspects of the study. A type of bias that may occur and must be recognized is interviewer bias, in which the interviewer-interviewee interaction is exacerbated by presumptions related to behaviors, cultures, or political orientation (Roller, 2020). Concerning the study exploring patients' experiences and factors that are deemed important to their satisfaction with home oxygen services, presumptions related to satisfaction are made when patients continue to smoke. Patients who continue to smoke may not receive the full medical benefits of LTOT and may continue to experience dyspnea. It is often assumed that due to their shortness of breath not being alleviated, patients will not be as satisfied with home oxygen services. The initially desired setting for this study was face-to-face interviews in a VHA facility home oxygen clinic in Little Rock, Arkansas. The occurrence of the COVID 19 pandemic prevented this from happening as the requirement of social distancing within all VHA facilities along with policies put in place to reduce all face-to-face interactions with patients to those that are medically necessary caused the need to move all research to a

virtual environment which in this case, was email. Due to this change in the study's participant setting, technological literacy may also be a barrier to response collection, such as from individuals with limited rapid typing skills or those who may not be as comfortable using computers or the internet (Amri et al., 2021). Participants, therefore, who are members of the online support group/community may be better educated or from higher socioeconomic strata, limiting the study's generalizability and resulting in sampling bias (Amri et al., 2021). Engaging in reflexivity using interviewer logs detailing how these presumptions and perceptions may influence the results of the interview and the entire study was a part of the research design as a means of enhancing the trustworthiness, transparency, and accountability of the research (Roller, 2020).

Methodology

Participant Selection Logic

According to Patton (2015), the logic and power of purposeful sampling lies in selecting information-rich cases for study, that is, cases from which a researcher can learn a great deal about issues that are of vital importance to the purpose of a study. As such, I employed purposive sampling, which is the strategic selection of information-rich cases that by their nature will illuminate the research question being investigated (Patton, 2015). Purposeful sampling was appropriate in this study because of the ability to select a sample based on this study's specific purpose and because of the power to save time and effort by selecting from among a population with direct knowledge of the subject being studied (Patton, 2015). The selection of participants or sources of data used in this study was based on their anticipated richness and relevance of information (concerning the use

of LTOT from home oxygen services) in relation to the study's research questions (Palinkas et al., 2015).

The inclusion criteria for this study concerning patients' experiences and factors deemed necessary for their satisfaction of home oxygen services are specific to the medical necessity of LTOT. Therefore, the best sources for finding participants for purposive sampling who fit the criteria for inclusion in the study are from patients with LTOT prescriptions. Since this study employed interviews involving home oxygen patients who actively participate in online home oxygen therapy-related support groups, permission was sought from the site administrators or moderators before any interviews take place. Only after receiving institutional review board (IRB) approval from Walden University was I able to begin gathering data. Participants were found by passive online recruitment or placing advertisements relaying pertinent information about this study in health or patient support group websites (Gelinas et al., 2017). In passive online recruitment, individuals are not targeted to take part in a study; rather, requests are made to the site gatekeepers, (moderators of the social media platforms of healthcare-focused organizations) to post a link, an overview of the study, and the researcher's email address should they agree to participate in the study (Bamdad et al., 2022). This type of collaborative partnership with site moderators of these online groups mitigates issues of trust, study integrity, and respect for participants during study recruitment (Bamdad et al., 2022). Patients who agreed to participate were provided with information concerning the study, including any possible risks via email. Employing email correspondence, I assessed whether the patient fit the inclusion criteria and further discussed participation in

the study with patients. Upon confirmation that the patient fit the inclusion criteria, I emailed the potential participant an informed consent form. The consent form could be returned to me in several ways: returning via fax or snail mail a signed form that was sent as an email attachment, emailing back a signed form, or replying via email affirmatively to an invitation to participate by stating in the message that the consent form was read and agreed to. The potential participant was asked to return the consent form within two weeks. The inclusion and exclusion criteria that I used for the purposeful selection of participants is located in Appendix A.

In phenomenological studies such as this, the nuanced understanding of study participants emerges through each individual's expressions (Bartholomew et al., 2021). The unique expressions describing the study participants' lived experience inherently influence the sampling in phenomenological studies (Bartholomew et al., 2021). Interviewing too many participants has the potential to foster discord when presenting results, whereas a more focused sample size may encourage a more coordinated expression of the participants' lived experiences (Bartholomew et al., 2021). This focused sample size should be between five and 25; as such, the number of participants used in this study was between 10 and 15 (Bartholomew et al., 2021). A sample size between 10 and 15 participants was deemed sufficient to ensure that saturation was reached, which is the point at which thematic patterns in participant responses are repeated (Weller et al., 2018).

Instrumentation

Interviews used in phenomenological studies such as this are often semi structured and open-ended (Patton, 2015). In such studies, the researcher schedules interviews with people who possess relevant information on the case issues and follows a particular interview design or structure in order to collect information (Patton, 2015). Standardized open-ended interview questions allow the participants to contribute as much detailed information as they desire, and it allows the researcher to ask probing questions as a means of follow-up (Rubin & Babbie, 2017). The open-ended interview questions I used in this study were based on the responsive interview structure. Responsive interviews are built around main questions, follow-up questions, and probing questions (Rubin & Babbie, 2017). Main questions begin the discussion concerning each part of the research question (Rubin & Babbie, 2017). Follow-up questions are used to seek detailed information on the themes and concepts that the participant introduces (Rubin & Babbie, 2017). Probing questions are used to help manage the conversation by keeping it on topic, signaling the desired level of depth, and asking for clarification (Rubin & Babbie, 2017). This interview guide was developed to capture the richness and nuances concerning patients' experiences and factors deemed important to their satisfaction with home oxygen services. Semi structured interviews were conducted using a topic guide based on questions from previous literature (see the interview protocol in Appendix B).

Procedures for Pilot Study

Pilot work in qualitative inquiry has proven a useful procedure for the preparation of a full-scale study (Majid et al., 2017). Pilot interviews can be employed to ensure

validity, reliability, and strengthen interview protocols by identifying flaws or limitations in the interview design and making subsequent modifications (Majid et al., 2017). To begin exploring patients' experiences and self-reported factors necessary for their satisfaction with their home oxygen service, a pilot study had to be conducted. I conducted the interviews through email with a select group of individuals who met the inclusion/exclusion criteria for this study. Letters of informed consent were given to each informant through email, and I obtained approval from the selected informants. The potential participants were asked to respond to the informed consent form by emailing the words "I consent" within 2 weeks. The pilot interviews were conducted asynchronously through email. The pilot interviews allowed me to obtain experience in conducting in-depth, semi structured interviews and to build rapport with the informants. Importantly, the pilot study assisted me in learning the skills pertaining to interviewing and the flow of conversation. The IRB approval number for this study is 06-10-22-0156049.

Procedures for Recruitment, Participation, and Data Collection

According to Patton (2015), the logic and power of purposeful sampling lies in selecting information-rich cases for study. Information-rich cases are those cases from which a researcher can learn a great deal about issues that are of vital importance to the purpose of a study (Patton, 2015). As such, this study employed purposive sampling. Purposeful sampling is the strategic selection of information-rich cases that by their nature will illuminate the research question being investigated (Patton, 2015). I used purposeful sampling in this study because of the ability to select a sample based on this study's specific purpose and because of the power to save time and effort by selecting

from among a population with direct knowledge of the subject being studied (Patton, 2015). The selection of participants or sources of data to be used in this study was based on their anticipated richness and relevance of information (i.e., concerning the use of LTOT from the patients' home oxygen service) in relation to the study's research questions (Palinkas et al., 2015).

Patients who agreed to participate were provided with information concerning the study, including any possible risks via email. Employing email correspondence, I assessed whether the patient fit the inclusion criteria and further discussed participation in the study with patients. Upon confirmation that the patient fits the inclusion criteria, I emailed the potential participant an informed consent form. The consent form could be returned to me by responding to the informed consent email with the words "I consent". The potential participants were asked to return the consent form within 2 weeks.

The inclusion criteria for this study concerning patients' experiences and self-reported factors deemed necessary for their satisfaction of their home oxygen service are specific to location, healthcare facility, and the medical necessity of LTOT. As such, the best source for finding participants for purposive sampling who fit the criteria for inclusion in the study are from individuals who have appointments with their home oxygen service. I contacted Walden University's IRB specialist concerning the ability to gain IRB approval for this study. Participants were found by passive online recruitment or placing advertisements relaying pertinent information about this study in health or patient support group websites (Gelinas et al., 2017). In passive online recruitment, individuals are not targeted to take part in the study; rather, requests are made to the site

gatekeepers (moderators of the social media platforms of healthcare-focused organizations) to post a link and an overview of the study (Bamdad et al., 2022). This type of collaborative partnership with site moderators of these online groups mitigates issues of trust, study integrity, and respect for participants during study recruitment (Bamdad et al., 2022).

Data collection events and thus total interview times varied as email exchange times may vary from hours to weeks (Fritz & Vandermause, 2018). This variation is because flexibility of responsiveness may be needed to accommodate the natural variations to the rhythm and flow of conversations with individuals (Fritz & Vandermause, 2018). Anticipating an individual's rhythm of response to interview questions may help with overall mental organization of thought and management of time; however, due to the unpredictable nature of email interviews, the overall process of data collection from interview responses can be inconsistent (Fritz & Vandermause, 2018). As such, the duration and frequency of data collection events varied.

Although technology has made available new strategies for interviewing study participants, it also presents significant challenges (Amri et al., 2021). One of the challenges is that the recruitment process may result in too few participants. This issue may be the result of poor internet connectivity discouraging individuals from participating, system crashes, inactive email accounts, or just an unwillingness to participate (Amri et al., 2021). These issues are not unique to email interviewing and can be overcome (Amri et al., 2021). I mitigated these recruitment issues by building

connections with gatekeepers of multiple online support groups/communities to recruit participants from multiple sources (see Amri et al., 2021).

Upon completion of the interview, all the information provided through email correspondence was noted, compiled, and analyzed. Permission was also obtained from the participant to perform a follow-up interview within 2 weeks of completion of the study interview if necessary. A follow-up interview may be necessary for response clarification or elaboration. A complete summary of the interviewer's responses to the interview questions asked in the email correspondence with me was provided to the interviewer through email within 4 weeks of the completion of each semi structured email interview. The participant then had the option of confirming the accuracy or changing the responses to the interview questions.

Data Analysis Plan

The data from this study were analyzed using Colaizzi's seven-step approach to phenomenological data analysis for Research Questions 1 and 2, which focus on how patients with recurring LTOT prescriptions describe their experiences with home oxygen services and factors identified by patients with recurring LTOT as important to their satisfaction with home oxygen services. Colaizzi, an existential phenomenologist who was largely influenced by Husserl, proposed that in order to understand human experience, the researcher must connect with the phenomenon as the people experience it (Paré, 2015). Colaizzi's method is dependent on rich first-person accounts of peoples' experiences with phenomena, which are often elicited from face-to-face interviews (Morrow et al., 2015), although this study employed asynchronous email interviews.

Colaizzi's approach provides a rigorous analysis, with each of the seven steps staying close to the data, resulting in a concise yet all-encompassing description of the phenomenon under study (Morrow et al., 2015). Step 1 involves reading the subjects' transcripts or protocols in order for the researcher to gain a thorough understanding of the meaning behind the words (Paré, 2015). After the researcher has read through each of the transcripts, the researcher then returns to the information to begin the process of extracting significance (Paré, 2015). In Step 2 of the process, the researcher meticulously reviews each transcript and extracts significant statements (Paré, 2015). The significant statements are defined as those statements having importance with the phenomenon being investigated (Paré, 2015). If repetitious statements are found during this review, those repeating statements are eliminated (Paré, 2015). Statements referring to specific events or feelings can be altered from a specific meaning to a more general formulation (Paré, 2015). In this stage of analysis, significant statements and phrases pertaining to patients' experiences and factors needed for their satisfaction are extracted from each transcript. These statements are written in separate sheets and coded based on their "transcript, page, and line numbers." Step 3 of Colaizzi's method requires the researcher to attempt to creatively and thoughtfully formulate a meaning for each significant statement (Paré, 2015). Each underlying meaning is coded in one category as they reflect an exhaustive description. Step 4 includes a process of grouping all of the formulated meanings from the significant statements into categories that reflect a cluster or theme (Paré, 2015). Each cluster must then be coded to include all potential meanings related to that cluster (Paré, 2015). Once that process is complete, groups of clusters of themes must be integrated to

form a unique construct of theme (Paré, 2015). This requires that all themes be internally similar and externally different (Paré, 2015). Each created meaning must cascade into only one theme cluster that is distinguished in meaning from other constructions (Paré, 2015). Step 5 includes defining all the evolving themes into a thorough and exhaustive description of the phenomenon being studied (Paré, 2015). Once this thorough description has emerged, the entire structure of the phenomenon of study becomes clear (Paré, 2015). It is then that the researcher may choose to have an expert researcher review findings to validate the richness and thoroughness of the process (Paré, 2015). Step 6 encompasses the development of a complete description of the phenomenon of study in as unambiguous a statement of meaning as possible (Paré, 2015). During this process, changes may be applied (discarding vague structures) to elucidate clear relationships between clusters of themes and their extrapolated meanings (Paré, 2015). In this step a reduction of findings is made in which redundant, misused, or overestimated descriptions are eradicated from the overall structure of the phenomenon under study. This is done to place an emphasis on the fundamental structure of the phenomenon under study. Step 7 is aimed at validating study findings which requires the researcher to return to the study participants (Paré, 2015). The participants are asked to review the transcript of their interview and validate that the transcript thoroughly represents their perceptions (member checking technique) (Paré, 2015). Participants are allowed to contribute additional information during this step or to refute any discernable errors in the transcription of the data (Paré, 2015).

As previously stated, this study employed a phenomenological research design. The phenomenological approach focuses on exploring how human beings make sense of experiences by methodologically and thoroughly capturing and describing how people perceive, judge, remember, or make sense of some phenomenon (Patton, 2015). The semi structured interview approach used in this study means that in addition to predefined questions, spontaneous follow-up questions were asked. Data derived from the semi structured interviews concerning the first two research questions in this study were analyzed using Colaizzi's approach and later, deductively analyzed employing directed qualitative content analysis. The directed or deductive approach to data analysis can be used when the purpose of the research is to search for specific concepts or categories often based on prior research or literature as it is in the third manuscript (Ravitch & Carl, 2016). The deductive approach aligns with the third research question, how do patients with long-term oxygen prescriptions, use the five components of the SERVQUAL model in their descriptions of the factors necessary for their satisfaction with their home oxygen service? Data derived from the use of Colaizzi's method of data analysis from the first two research questions were placed in predefined schemes based on the elements composing the SERVQUAL model using the directed or deductive approach to content analysis.

In qualitative studies, a proposition is a statement of the qualitative (and not quantitative or statistical) nature of the relationship between various concepts contained in the literature (Pearse, 2019). Propositions, which are derived from theory, direct the attention of the researcher to what should be focused upon within the study (Pearse,

2019). The proposition of this study includes the SERVQUAL model and its corresponding dimensions as components of patient satisfaction. The proposition advanced in this study is that patients use each dimension of the SERVQUAL model (tangibles, responsiveness, reliability, assurance, and empathy) in their descriptions of experiences and factors necessary for their satisfaction with their home oxygen service. Also concerning the proposition, its positioning in the conceptual framework should be evident (Pearse, 2019). The predefined schemes used to categorize patients' descriptions of their experiences and factors needed for their satisfaction coincide with the dimensions that make up the SERVQUAL model (the conceptual framework of this study), thus, linking the derived data to the propositions. All additional concepts arising during interviews were documented and reported.

The findings from a directed or deductive approach to content analysis offered supporting and non-supporting evidence for the SERVQUAL model (Ebrahimi Belil et al., 2018). Being an existing theory or model, the SERVQUAL model provides descriptions about the components making up the model which helps to determine the initial coding scheme when performing data analysis (Ebrahimi Belil et al., 2018). The strategy used in directed qualitative content analysis developed by Hsieh and Shannon (2005), starts with a theory or relevant research findings as guidance for initial codes. Using existing theory or prior research, such as that pertaining to the SERVQUAL model, I began by identifying key concepts (SERVQUAL model's five dimensions) as initial coding categories (Hsieh & Shannon, 2005). I then developed operational definitions or employ the previously accepted operational definitions of concepts such as

the five dimensions of the SERVQUAL model (tangibility, reliability, responsiveness, assurance, and empathy) identified and defined by Parasuraman 1985 (Hsieh & Shannon, 2005; Miller, 2015). Next, I reviewed all transcripts carefully, highlighting all text that appear to illustrate the service quality (SERVQUAL) dimensions used by patients to describe their satisfaction with their home oxygen service (Hsieh & Shannon, 2005). All highlighted text was coded using the predetermined categories wherever possible (Hsieh & Shannon, 2005). Text that could not be coded into one of these categories was coded with another label that captures the essence of the emotion (Hsieh & Shannon, 2005). After coding, I examined the data for each category to determine whether subcategories were needed for a category (Hsieh & Shannon, 2005). Data that could not be coded into one of the five categories derived from the theory were reexamined to describe different service quality factors that influence patients' satisfaction (Hsieh & Shannon, 2005). Finally, I compared the extent to which the data are supportive of the SERVQUAL model versus how much represented different service quality factors (Hsieh & Shannon, 2005). As stated, the dimensions of the SERVQUAL model (tangibles, reliability, responsiveness, assurance, and empathy) provided the basis for categories by which the data were coded. Since confidence exists that initial coding would not bias the identification of text related to patient satisfaction, coding could begin immediately with predetermined codes based on the five SERVQUAL dimensions (Hsieh & Shannon, 2005). Because the study design and analysis are unlikely to result in coded data that can be compared meaningfully using statistical tests of difference, methods of interpreting the findings included the use of rank order comparisons of frequency of codes to measure

relevance (Hsieh & Shannon, 2005). The category corresponding to the SERVQUAL dimension used most frequently by the patients in their descriptions of factors needed for their satisfaction of their home oxygen service was ranked first. The SERVQUAL dimension used second most was ranked second and so on. I also descriptively reported the percentage of supporting versus non-supporting codes, in relation to the SERVQUAL model, for each participant and for the total sample (Hsieh & Shannon, 2005). The study findings were described by reporting the incidence of newly identified codes as well as codes representative of the five main categories derived from the dimensions of the SERVQUAL model. The presence of a predominance of identified codes representative of the five main categories derived from the SERVQUAL model dimensions served as corroboratory evidence that the model may be useful in understanding healthcare quality and patient satisfaction in this setting. Newly identified categories either offer a contradictory view of the phenomenon or might further refine, extend, and enrich the theory (Ebrahimi Belil et al., 2018).

Issues of Trustworthiness

Trustworthiness in qualitative studies refers to whether the findings can be trusted to faithfully describe the research participants' experiences (Korstjens & Moser, 2018). Trustworthiness is viewed as a goal that necessitates systematic and methodological processes in the endeavor to achieve the goal (Ravitch & Carl, 2016). Although trustworthiness can never be fully ensured due to the complex lives and contexts qualitative studies seek to explore, there are concepts that can be applied to the study to increase trustworthiness (Ravitch & Carl, 2016). Concepts that I applied in this study to

increase trustworthiness are credibility, transferability, dependability, and confirmability (Ravitch & Carl, 2016).

Credibility is confidence that can be placed in the truth of the study's findings (Korstjens & Moser, 2017). Credibility is whether the research findings represent plausible information derived from the original data and whether the findings are an accurate and truthful depiction of a participant's lived experience (Korstjens & Moser, 2017). Credibility in qualitative studies is established by using the strategies of triangulation, member checking, presenting thick description, discussing negative cases, prolonged engagement in the field, using peer debriefers, and/or having an external auditor (Ravitch & Carl, 2016). Credibility and depth of study findings were increased in this study through the convergence of viewpoints and common experiences from participants of multiple sites providing multiple perspectives, a form of triangulation (Hawkins, 2018). Credibility was also increased through prolonged engagement in the field. Prolonged engagement involves the investment of a sufficient amount of time with home oxygen patients to understand the culture, build trust and rapport with participants, test for misinformation introduced by distortions of the researcher or the participants, and identify characteristics and elements within the groups that are most relevant to the problem or issue being investigated (Lincoln & Guba, 1985).

As a respiratory therapist, I have had numerous interactions with home oxygen patients. Repeated exposure to home oxygen patients who could potentially be study participants also has the potential to create bias and role confusion. As such, the investigator must clarify his role in this study is that of phenomenological researcher and

not as respiratory therapist. It is however acknowledged that this role influences the researcher's knowledge and experience of the phenomenon. Respiratory therapists are bound to nurture and protect the health of patients. As such, if participants confuse the researcher's role with that of a respiratory therapist, and unrelated issues or concern surface, the participants health and welfare must always take priority over the research. As the researcher though, one must be vigilant in his effort does not move from the role of instrument in the investigation to that of a respiratory therapist. As a researcher, one may attempt to guide the interview and must maintain focus on the topic being investigated. One must also be mindful that the in-depth interview is not a time for therapeutic intervention and the researcher must avoid asking questions that may elicit more information from the participants than they consented to. The researcher must at all times maintain awareness of the role of respiratory therapist and that of researcher and the need to be focused on one's intention at varying points of time to avoid role confusion. The researcher's reflection and reporting on steps taken to manage the effects of their experiences on aspects of the research as a means of ensuring the results of the study are based on the experiences of the research participants is a major criterion of confirmability (Moon, Brewer, Januchowski-Hartley, Adams & Blackman, 2016).

Confirmability concerning the data of qualitative studies is the ability of the researchers to achieve relative neutrality and freedom from unacknowledged biases or being conscientious about the unavoidable biases that exist (Ravitch & Carl, 2016). The goal of confirmability is to acknowledge researcher biases and prejudices and explore the ways that they influence the interpretations of data (Ravitch & Carl, 2016).

Confirmability can be achieved through the implementation of triangulation strategies, researcher reflexivity, and external audits (Ravitch & Carl, 2016). Confirmability was achieved in this study with the use of researcher reflexivity. In order to "bracket out" personal experiences and viewpoints and explore the experiences of the study participants with an open mind, an identity memo was written (Ravitch & Carl, 2016). This identity memo highlighted biases brought into the study and included my reflections on past experiences, prejudices, and orientations that my influence data interpretation and study approach (Ravitch & Carl, 2016).

I also used member checking to support credibility as participants of the study were asked to review and verify the interpretations to ensure the accuracy of the data (Birt et al., 2016). Within 2 weeks of each semi structured interview, each participant's responses were summarized, and the summary was provided to them via email for member checking. Lastly, I used data source triangulation to support credibility as data were collected from different people for the purpose of exploring different perspectives relating to the phenomenon in question (Ravitch & Carl, 2016).

Transferability is how applicable qualitative studies are to broader contexts while still maintaining their context-specific richness (Ravitch & Carl, 2016). Transferability, or the case-to-case generalizability of the inquiry, was assured by providing detailed descriptions of the phenomenon, the research methodology, and the research analysis (Nowell et al., 2017). Detailed descriptions of the phenomenon, the research methodology, and the research analysis I provided in this study ensured that those who seek to transfer the findings or various aspects of this study to their own site can

accurately judge whether those findings or aspects can and should be transferred (Nowell et al., 2017). Providing thorough descriptions of all facets of the research can aid other researchers to understand the multiple perspectives that define the phenomenon under study so they may develop new conceptualizations of the phenomenon (Moon et al., 2016).

Dependability refers to the consistency or stability of data over time (Ravitch & Carl, 2016). Dependability means that there is a reasonable argument for how the study's data is collected, and that the data are consistent with the argument (Ravitch & Carl, 2016). In order for studies to be considered dependable, the appropriate research methods must be used, and an argument must be made as to why specific research methodologies used are appropriate for answering the core concepts and constructs of the study (Ravitch & Carl, 2016). Dependability was achieved in this study by providing detailed documentation of the research design and implementation and by developing a thoroughly articulated justification for these research methodology choices (Moon et al., 2016; Ravitch & Carl, 2016). Developing a thoroughly articulated justification for research methodology choices helps to confirm the appropriateness of the data collection plan taking into account the research questions (Ravitch & Carl, 2016).

Ethical Procedures

Only after receiving IRB approval from Walden University was I able to begin gathering data. The IRB approval number for this study is 06-10-22-0156049. Participants were found by passive online recruitment or placing advertisements relaying pertinent information about this study in health or patient support group websites

(Gelinas et al., 2017). In passive online recruitment, individuals are not targeted to take part in the study; rather, requests are made to the site gatekeepers, (moderators of the social media platforms of healthcare-focused organizations) to post a link, an overview of the study, and the researcher's email address should they agree to participate in the study (Bamdad et al., 2022). This type of collaborative partnership with site moderators of these online groups mitigates issues of trust, study integrity, and respect for participants during study recruitment (Bamdad et al., 2022). Individuals agreeing to participate in the pilot study were asked to sign an informed consent form, which could be returned via mail, emailing back a signed form, or emailing affirmatively to an invitation to participate by stating in the message that the consent form was read and agreed to. The potential participants were asked to return the consent form within 2 weeks.

When employing passive online recruitment, the researcher must reflect on the concept of power, specifically on how the imbalance of power between the patient and the researcher can undermine patient involvement in the study (Val et al., 2017). To establish a relationship in which the potential participants could feel safe and ask questions concerning the study, patients were assured that their confidentiality would be maintained. The participants were notified that all identifiers, or information that identifies the respondents such as name and email address, would be removed from the study to maintain privacy and confidentiality.

Privacy issues are inherent to online services so, it is essential to investigate the privacy, confidentiality, and data collection policies of all online platforms and services used in this study (Lobe et al., 2020). Communication via email may compromise

anonymity if they are done using email addresses that are identifiable (i.e., that use first or last names) (Lobe et al., 2020). I took special care to prevent any linkage between the data collected and email addresses (Lobe et al., 2020). I printed off the emails with expression of consent, archiving them in a paper form and immediately deleting the electronic version (Lobe et al., 2020). Privacy was assured on an individual basis.

The confidentiality of the stored data was maintained through the process of de-identification. Specifically, the process involved the removal of identifiers and information that could be used with the combination of other information to identify the research participant. Some of these identifiers include the following: names, email address, and telephone numbers. A unique code was given to the set of de-identified information to permit re-identification by the covered entity. I will retain the data sets in a confidential, secure manner for 5 years beyond CAO approval.

Summary

The purpose of this study was to explore patients' experiences and factors that are deemed necessary to their satisfaction with their home oxygen service employing the SERVQUAL model as the conceptual basis. The purpose of this study was supported by three research questions. Data derived from the first two questions were analyzed using Colaizzi's seven-step approach to phenomenological data analysis while data derived from the use of Colaizzi's seven-step approach were analyzed using directed qualitative content analysis for the third research question. Data derived from this study contained no identifying information to ensure participant confidentiality, as participants may be more

comfortable completing the interview, leading to richer results, if they have some assurance that the researcher will not reveal the information provided (Allen, 2017).

Chapter 4: Results

The purpose of this study was to explore patients' experiences and factors that are deemed necessary to their satisfaction with their home oxygen service. This study employed the SERVQUAL model as the conceptual basis. The purpose of this study was supported by three research questions focusing on how patients with recurring LTOT prescriptions describe their experiences with home oxygen services; factors identified by patients with recurring LTOT as important to their satisfaction with home oxygen services; and how the five components of the SERVQUAL model is used in patients' with LTOT prescriptions, descriptions of factors necessary for their satisfaction of home oxygen services. This chapter is divided into several sections addressing the pilot study, the results of the pilot study, and changes made to the main study because of the pilot study results. Sections in this chapter will also address the study setting, participant demographics, data collection from the main study, main study data analysis, evidence of trustworthiness, results derived from the main study, and finally a summarization of answers to the research questions.

Pilot Study

To begin exploring patients' experiences and self-reported factors necessary for their satisfaction with their home oxygen service, I conducted a pilot study to refine the research protocols, preempt possible challenges and increase my training and confidence in conducting qualitative research. The pilot study interviews were conducted asynchronously through email with a select group of individuals who met the inclusion/exclusion criteria for this study. Before conducting the interviews, I sent letters

of informed consent to each informant through email and obtained approval from the selected informants. The potential participants were asked to respond to the informed consent form by emailing the words “I consent” within 2 weeks. The pilot interviews allowed me to obtain experience in conducting in-depth, semi-structured interviews and to build rapport with the informants. Importantly, the pilot study assisted the researcher in learning the skills pertaining to interviewing and the flow of conversation.

Data collection for the pilot study began with the participant identified as AK on July 6, 2022, and ended on July 19, 2022. There was a total of six email interactions with the participant between this time to answer two primary questions and four probing questions in the pilot study. There was no delay by AK in their responses to the interview questions lasting more than 2 days. Data collection for another participant, DJ, took place concurrently with the participant AK beginning of July 6, 2022, and ending on July 21, 2022. There was a total of 10 email interactions with DJ between this time to answer two primary questions and eight probing questions. There was no delay by DJ in their responses to the interview questions lasting more than 2 days. Data collection for the last participant, SP, began on July 23, 2022, and ended on July 29, 2022. There was a total of six email interactions with SP between this time to answer two primary questions and four probing questions. There was no delay by SP in their responses to the interview questions lasting more than 2 days.

Technological issues are common in asynchronous interviews such as this. One such issue that arose during the data collection phase of the pilot study concerned

participant verification or identification. Another issue that had the potential to occur was mixing up of participants' descriptions when performing concurrent interviews.

Pilot Study Results

The response time associated with the email exchanges with each participant was the same ($M = 2$, $SD = 0$). There was no delay in response for each participant lasting more than 2 days. Concerning technological issues, specifically participant verification or identification, to confirm the identity of the study participant, I sent a message on Facebook Messenger to each participant to verify the date on which they initially responded to the email interview questions and the date on which the last response took place. Each participant responded with the appropriate dates of email correspondence. To reduce the potential for mixing up participants' descriptions when performing concurrent interviews, each participant's email correspondence was color coded, and each complete interview was stored in separate folders.

Setting

The time period of this study influenced the setting in which this study would take place. The ideal and initially desired setting for this study was face-to-face interviews in a Veterans Health Administration (VHA) facility home oxygen clinic in Little Rock, Arkansas. The occurrence of the COVID 19 pandemic prevented this from occurring as the requirement of social distancing within all VHA facilities along with policies put in place to reduce all face-to-face interactions with patients to those that are medically necessary caused the need to move all research to a virtual environment. The setting most conducive to participants at this time and allowing for the most demographically diverse

group of participants who are involved in the phenomenon being studied was virtually, such as through email. The setting of the email interview took place in a home office space where privacy and confidentiality were maintained.

The use of email interviews in this study may influence the interpretation of the study results due to the inability to visualize the effect of the participants. The ability to see the participants as they respond to the interview questions allows the interviewer to recognize and react to visual cues determining if there is understanding and if it necessary to initiate probing questions to provide clarity and deeper understanding of the discussion topic.

Demographics

The participants of this study are English speaking supplemental oxygen therapy users who are at least 18 years of age. Participants of this study reside in various locations in the United States. Study participant DJ is a 72-year-old male who was diagnosed with COPD and currently resides in Pahoa, Hawaii. Study participant SP is a 76-year-old female who was diagnosed with bronchiectasis and currently resides in Cave Creek, Arizona. AK is an 81-year-old female who was diagnosed with COPD and currently resides in Chaska, Minnesota. BB is a 62-year-old female who was diagnosed with ILD and currently resides in Sierra Madre, California. TS is a 74-year-old female who was diagnosed with COPD and currently resides in Sierra Vista, Arizona. The diagnoses of all study participants often cause hypoxemia or low blood oxygen levels resulting in chronic shortness of breath and the need for long-term supplemental oxygen. These supplemental oxygen users receive their supplemental oxygen from companies

based in the United States and have had a recurring and active prescription for long-term supplemental oxygen for greater than 1 year.

Data Collection

This study employed the use of in-depth email interviews. The five participants of this study agreed to be interviewed via email correspondence. Each participant was asked primary interview questions concerning a description of their experiences with their home oxygen service and a description of the factors necessary for them to be satisfied with their home oxygen service. The probing questions that were asked to each participant varied as a means of eliciting more and deeper information about their responses to the primary questions. The number of emails required to elicit complete responses varied (M = 11.8, SD = 1.92). Data collection for the first respondent, AK, began on October 26, 2022, and ended on November 27, 2022. There was a total of 11 email interactions with the participant between these dates to answer eight primary questions and five probing questions in this study. There was no delay by AK in their responses to the interview questions lasting more than 2 days. Data collection for the participant DJ took place concurrently with the participant AK beginning of October 25, 2022, and ending on November 27, 2022. There was a total of 10 email interactions with the participant during this time to answer eight primary questions and nine probing questions. There was no delay by DJ in their responses to the interview questions lasting more than 2 days. Data collection for the participant SP began on October 28, 2022, and ended on December 29, 2022. There was a total of 12 email interactions with the participant between these dates to answer eight primary questions and five probing

questions. There was no delay by SP in their responses to the interview questions lasting more than 3 days. Data collection for BB began on December 28, 2022, and ended January 25, 2023. There was a total of 15 email interactions with the participant between these dates to answer eight primary questions and four probing questions. There was no delay by BB in their responses to the interview questions lasting more than 3 days. Data collection for TS began on January 4, 2023, and ended on January 18, 2023. There was a total of 11 email interactions with the participant between these dates to answer eight primary questions and four probing questions. There was no delay by TS in their responses to the interview questions lasting more than two days. The response time for the interviews was shorter than expected (M = 2.4, SD = .55).

There was a change in the data collection setting from the method originally proposed for this study. As stated before, the initially desired setting for this study was face-to-face interviews in a VHA facility home oxygen clinic in Little Rock, Arkansas. The occurrence of the COVID 19 pandemic prevented this from happening as the requirement of social distancing within all VHA facilities along with policies put in place to reduce all face-to-face interactions with patients to those that are medically necessary caused the need to move all research to a virtual environment which in this case, was email.

There were various unusual circumstances encountered in the collection of data during this study. Data collection events and thus total interview times were expected to vary since email exchange times have the potential to vary from hours to weeks (Fritz & Vandermause, 2018). There is a natural variation in individual rhythm of response to

interview questions and knowledge of the existence of this helped with the overall mental organization of thought and management of time (Fritz & Vandermause, 2018). During the data collection process, some participants provided more in-depth responses than others, there was little regularity with some responses to the interview questions, and some participants stopped responding to the interview questions all together. This led to some periods of inconsistency in communication with participants which made the process of coding and analyzing their responses unpredictable. For example, the interview for participant DJ lasted 32 days. Although DJ was consistent in the timing of their responses, their lengthy responses and subsequent need to read and understand the response and develop probing questions to clarify the response, led to inconsistency in communication as there was a delay of sometimes 2 days when asking follow-up interview questions, which impeded the ability to code and analyze data. Two individuals who initially agreed to participate in the pilot study, AC and PB, seemed enthusiastic when expressing their desire to participate in the study. After the first primary question was asked, both AC and PB provided somewhat thick responses within 2 days. As probing questions were asked to obtain more in-depth data, the was little to no regularity with responses. AC responded to the first probing question with a very short response after 5 days and stopped responding altogether after being asked a second probing question. PB responded to three probing questions in 2 weeks and stopped responding after the fourth. When questioned as to their reason for discontinuing the interview, both decided they no longer wanted to participate and were thanked for their time. Other unusual circumstances encountered in data collection are discussed next.

Unusual Circumstances Encountered in Data Collection

Issues and Barriers Related to Participant Recruitment

Participants for this study were found by passive online recruitment or placing advertisements relaying pertinent information about this study in supplemental or home oxygen related groups on Facebook (Gelinas et al., 2017). Individuals were not targeted to take part in this study; rather, requests were made to the group gatekeepers, (moderators of the Facebook groups) to post a link, an overview of the study, and the researcher's email address should anyone agree to participate in the study (Bamdad et al., 2022). This type of collaborative partnership with site moderators of these Facebook groups was to mitigate issues of trust, study integrity, and respect for participants during study recruitment (Bamdad et al., 2022). Despite my attempts to mitigate issues of trust and respect for participants, several group moderators would not allow study invitations to be posted within the group owing to the lack of group participation or because of group no-solicitation policies. Some moderators even declined my request to join groups altogether due to the lack of a physical abnormality necessitating a supplemental oxygen prescription. Many group moderators and their members were more than happy to participate in this study, whereas some group moderators required consistent group participation before allowing any posting of this study, which I was obliged to do.

Adaptations Made to Interview Protocol

The primary questions from the interview protocol elicited thick and rich responses from the participants. Probing questions in the interview protocol were added or modified to improve the flow of discourse between the participant and me. Probing

questions were added to obtain more information about an answer or clarify something said by the participant. Probing questions from the interview protocol were also sometimes omitted from the interview when the participant freely disclosed the information without being asked.

Timing Issues Performing Asynchronous Email Interviews

The inability to anticipate the participants' changes in the rhythm and flow of responses created unpredictability when performing email interviews in this study (see Fritz & Vandermause, 2018) As such, flexibility in responsiveness was needed to accommodate the inconsistencies in the timing of correspondence with the study participants (see Fritz & Vandermause, 2018). It was important to make note of the time and date of participant responses to ensure correct ordering of correspondence with study participants since, in some cases, the time between responses was several days to weeks. Some participants in this study provided more in-depth responses than others, making the process of coding and analyzing their responses longer. This along with the respondents' scheduling and personal lives, led to some periods of irregularity in communication with other participants. Instances like this were anticipated because of the nature of email interviews but still could have influenced the experience of the participants since, over time, the participants may lose interest in the study.

Ensuring the integrity of the interview is of utmost importance when conducting a qualitative study using email to interview participants. To confirm the identity of the study participant and help to ensure the integrity of the interview, I sent a message on Facebook Messenger to each participant to verify the date on which they initially

responded to the email interview questions and the date on which the last response took place. Each participant responded with the appropriate dates of email correspondence.

Data Analysis

Colaizzi's Descriptive Phenomenological Method

Familiarize

The analysis of data from this study was based on Colaizzi's seven-step approach to phenomenological analysis. The first step involved reading and re-reading each of the five participants' responses to the interview questions to develop an overall understanding of the concepts that the participant was trying to convey. Any thoughts or feelings that may have arisen because of my previous experience about the phenomenon were added to my reflexive journal. This helped to account for any potential researcher bias, bracket any presuppositions, and explore the phenomenon fully as experienced by participants.

Extract Significant Statements

Step 2 involved extracting what is believed to be the most significant statements from each interview question response and eliminating any repeating statements. The extracted statements relevant to the phenomenon were written on separate sheets of paper and identified by the participants' coded name, page, and line numbers (see examples in Table 1). All relevant statements of similar thought used to respond to a single interview question were kept in a single paragraph and the entire paragraph was coded while different concepts or thought processes introduced from that same interview question were coded separately. In this step, specific names, such as those of the users' home

oxygen companies and equipment brand names were omitted. Specific terms that could be viewed as derogatory or offensive were changed to describe more general concepts or ideas. For example, one participant described a home oxygen staff member as "seemingly stupid". This was changed to "educating staff members is important." This step was performed to leave only information that is truly important to the phenomenon being studied and to be cognizant that various thought processes may be introduced by the participant from a single interview question.

Table 1

Extracted Significant Statements

Significant statements	Participant code name	Page number	Line number
"My supplier is very prompt in resolving any problems I have with my equipment."	AK	1	1
"Even though I continually pay more of the cost, I am not sure if I will ever own the concentrator."	DJ	5	3
"They were not very accommodating when I requested to switch from tanks to a portable unit."	SP	5	11

Formulating Meanings

The next step, Step 3, involved creating meaning for the thoughts conveyed by the participant when responding to each interview question. This required reading the participants' interview question responses for understanding and deriving a single

concept adequately describing the meaning of the statement or group of statements (see examples in Table 2).

Table 2

Formulating Meanings of Interview Responses

Significant statements	Meanings
They were not very accommodating when I requested to switch from tanks to a portable unit (SP; Page 5; Line 11). Took 6 months to make this happen (SP; Page 5; Line 12). I had to go to the upper-level management to get a response (SP; Page 5; Line 13).	Prompt compliance with customer wishes is important.
The delivery person really went out of his way to show me that the company really cares about their customers and will work hard to take care of the customers' needs (DJ; Page 8; Line 20). He was very pleasant and patient when I asked him to explain something more than once (DJ; Page 8; Line 21).	Belief that the company cares about its customers is important.

Clustering Themes

Step 4 involved clustering the identified meanings derived from the participants' significant statements into themes that are common across all accounts (see examples in Table 3).

Table 3

Clustering Meanings into Themes

Meanings	Themes
Prompt compliance with customer wishes is important.	Timely service is provided/expected.
Belief that the company cares about its customers is important.	Attentive service is provided/expected.
Educating users on equipment is important.	
Supplier should mitigate users' apprehension of equipment function.	

Defining all Themes into a Thorough Description of the Phenomenon and Developing a Complete Description of the Phenomenon

Step five involved defining all themes into a thorough description of home oxygen users' experiences and factors necessary for their satisfaction of their home oxygen service using the themes produced in step four. Step six involved developing a complete description of the phenomenon of study. In this study, step five and step six were combined. After defining all the evolving themes into a thorough description of the phenomenon, the theme most often derived from the home oxygen users' descriptions of their lived experiences with their home oxygen services and factors needed for them to be satisfied with their service, was the provider caring about the users. The provision of caring was deemed important to the home oxygen users in issues concerning their feeling insignificant to the company, proper equipment usage/function, affective issues (social/emotional well-being), and concerns that the provided equipment limits the user's

daily activities. The home oxygen supplier and the representative were expected to be attentive to the customers' feelings of anxiety concerning whether the equipment is properly functioning and to the user's ability to manipulate their equipment. The company is also expected to show compassion when the customer expressed concerns about their diminishing daily activities associated with the need for supplemental oxygen, their desire to continue having a fulfilled life by providing equipment that allows for an active lifestyle and ensure service continuity in the event of potential utility disruption. The theme second most often derived from the participants' descriptions was the provider convinces users of their knowledge and professionalism. The home oxygen company's employees were expected to establish and bolster the customers' confidence in the company's courtesy, honesty, communication, and service utilities through their knowledge and professionalism. The ability to convince home oxygen users of staff members' knowledge and professionalism was deemed important in issues concerning user trust in the company's charges and billing, concerns of oxygen users being heard, and effective communication between company representatives and users. The theme third most frequently derived from the participants' descriptions was the desire for their home oxygen service to be receptive to the user's needs and wishes. Regarding issues of receptiveness, timely service and the willingness to help were expected when concerning issues of equipment availability, being heard, equipment ownership, and promptness in help or problem solving. Also, regarding issues of receptiveness, timely service and the willingness to help was also expected from the home oxygen provider when users desired equipment and supplies that they felt would improve their lives. The forth most common

theme derived from home oxygen users' descriptions of their lived experiences with their home oxygen services and factors needed for them to be satisfied with their service, was provides promised services. Of particular importance with providing promised services are the concerns of availability of equipment and confidence in the company. The supplier was expected to instill confidence in the user of the supplier's ability to provide services wherever and whenever needed while impressing upon the user their ability to accurately and conveniently deliver the specific services needed by the customer. The themes least derived from the home oxygen users' descriptions of their lived experiences with their home oxygen services and factors needed for them to be satisfied with their service, was provides up-to-date equipment. With respect to the provision of up – to – date equipment, the description of the idea elicited by all users was that the equipment provided was up to date to ensure equipment function and dependability. The primary proposition given by the oxygen users was that the equipment provided was expected to be new and/or up to date to instill user confidence in the equipment's function and serviceability.

Overall, the home oxygen users apparently felt that their home oxygen services should have been more attentive or caring in any interaction with the customers and specifically in the realm of education when first administering equipment, and equipment checks after user has had equipment for a length of time. They were expected to provide dependable and timely service whenever and wherever the user needs it, along with providing modern-looking equipment, while performing these and other service-related acts in a manner that instills confidence in their customers.

Validating Study Findings

Step seven of Colaizzi's phenomenological approach to data analysis is aimed at validating study findings. Early in the study, the process of validating the study was to take place by returning to the participants. The participants were to be asked to review the transcripts of their interviews and validate that the transcripts thoroughly represented their perceptions. This step was altered as the interview transcripts were statements coming directly from the study participants and as such, the comprehensiveness of the transcripts cannot be refuted as there should not be any perceived errors in the transcription of the data. Findings in this study were validated through the process of prolonged engagement within the various Facebook groups. Prolonged engagement involved the investment of a sufficient amount of time with home oxygen patients in Facebook groups to understand the culture, build trust and rapport with participants, test for misinformation introduced by distortions of the researcher or the participants, and identify characteristics and elements within the groups that are most relevant to the problem or issue being investigated (Lincoln & Guba, 1985). The Facebook groups from which the study participants were recruited required consistent group participation before allowing any posting related to study participation. Before recruiting was allowed in the Facebook groups with potential study participants, it was necessary to consistently offer knowledgeable information pertaining to the issues being discussed for a period of time. It was decided that after 4 weeks of consistent interaction within the groups, the moderators would be contacted concerning displaying a study recruitment post within the groups. Participation within the groups occurred for approximately 30 minutes a day for

at least 4 days a week. Topics of discussion ranged from thoughts about various respiratory related devices and different therapeutic modalities to providing encouragement to individuals having difficulty dealing with the emotional impact that comes with being diagnosed with lung disease. These discussions were performed after informing the individual or group that while being a healthcare professional, no diagnoses or opinions of treatment options can or will be given. This consistent and thoughtful engagement within the groups allowed for both trust and rapport to be built with potential participants and for the development of an understanding of the home oxygen users' culture. Prolonged engagement within these groups also helped to identify, or in this case, reinforce relevant elements of the issues in this research, which were discussed organically within the groups such as what users don't like about their home oxygen company and what users wish their home oxygen supplier would do. Prolonged engagement with participant PB, for example, enabled the testing for misinformation introduced by distortions of this participant. When asked to describe their experience with their home oxygen service, PB stated, "They didn't make an effort to deliver supplies on time when they said they would." When asked probing questions of this response to elicit more detail, it was discovered that this participant lived out of hotel rooms and did not have a permanent address. This made delivery difficult if not impossible. Although the diseases necessitating the use of home oxygen may vary within these groups, home oxygen users within these groups offer support, experience-based knowledge, and much needed encouragement to one another. Some group moderators are understandably very protective of group members, such as those with potentially terminal

diseases. These group moderators did not allow any solicitation or group membership unless there is a diagnosis of a specific pulmonary disease to ensure that any discussions or advice was experience-based, and members of these groups were not introduced to individuals with questionable ethics.

Directed Qualitative Content Analysis

Data derived from the interviews concerning the first two research questions in this study was analyzed using Colazzi's approach and the resulting data was deductively analyzed employing directed qualitative content analysis. The strategy used in directed qualitative content analysis for this study started with the five dimensions of the SERVQUAL model (reliability, responsiveness, assurance, empathy, and tangibles) as initial coding categories. The operational definitions for the model's five dimensions were developed by Parasuraman in 1985. Data derived from Colaizzi's approach was analyzed highlighting all text that appear to illustrate the operational definitions of the service quality (SERVQUAL) dimensions used by patients to describe their experience with their home oxygen service as well as factors needed for the users to be satisfied with their home oxygen service. All highlighted text was coded using the predetermined categories wherever possible (See Table 4).

Table 4

Themes from Colaizzi's Approach to SERVQUAL Dimensions

Themes from Colaizzi's approach	SERVQUAL operational definitions	SERVQUAL dimensions
Provider is receptive to users' needs	Willingness to help and respond to customer needs.	Responsive
Provides promised services	Ability to perform guaranteed services dependably and accurately.	Reliable
Provider cares about users	Attention, caring, and individual service is given to the customer.	Empathy
Provider convinces users of their knowledge and professionalism	Staff ability to inspire, confidence, trust, and courtesy to home oxygen users.	Assurance
Provides up-to-date equipment	Physical appearance of facilities, staff, equipment, building, appearance etc.	Tangibles

If there was any text or data derived from the use of Colaizzi's approach that could not be coded into one of the categories derived from the SERVQUAL dimension, this data was to be coded with another label that captured the essence of the emotion. After analyzing the data using both methods, there was no data derived from Colaizzi's approach that could not be coded into one of the SERVQUAL dimensions after using directed qualitative content analysis. After coding, the researcher examined the data for each category and determined that subcategories were not needed. Finally, the researcher compared the extent to which the data was supportive of the SERVQUAL model versus how much represented different service quality factors. All of the data derived from this study was supportive of the SERVQUAL model.

Because the study design and analysis were unlikely to result in coded data that could be compared meaningfully using statistical tests of difference, methods of interpreting the findings included the use of rank order comparisons of frequency of codes to measure relevance (Hsieh & Shannon, 2005). The category corresponding to the SERVQUAL dimension used most frequently by the patients in their descriptions of factors needed for their satisfaction of their home oxygen service was ranked first. The provision of caring was used in 32 instances by home oxygen users in issues concerning their feelings of being insignificant to the company, proper equipment usage/function, affective issues (social/emotional well-being), and concerns that the provided equipment limits the user's daily activities. The SERVQUAL dimension used second most often was assurance. The assurance dimension was employed in 18 instances by home oxygen users when the company's employees were expected to establish and bolster the customers' confidence in the company's courtesy, honesty, communication, and service utilities through their knowledge and professionalism. The SERVQUAL dimension, responsiveness, ranked third in its use by home oxygen users. This dimension was used in 17 instances where timely service and the willingness to help were expected in matters concerning equipment availability, being heard, equipment ownership, and promptness in help or problem solving relating to thing they felt would improve users' lives. The SERVQUAL dimension, reliable, was ranked forth and was used in 12 instances by home oxygen users when guaranteed services were provided or expected. This dimension was used in issues concerning the availability of equipment and confidence in the company. The supplier was expected to instill confidence in the user of the supplier's ability to

provide services wherever and whenever needed while impressing upon the user their ability to accurately and conveniently deliver the specific services needed by the customer. The fifth ranked dimension was tangibles. This SERVQUAL dimension was used five times in home oxygen users' descriptions of instances when the equipment provided was up to date or modern. Providing new and/or up to date equipment helped to instill user confidence in the equipment's function and serviceability. All codes derived from the directed or deductive approach to data analysis can be used to corroborate the SERVQUAL model's five-dimensional structure. The presence of a predominance of identified codes representative of the five main categories derived from the SERVQUAL model dimensions may serve as corroboratory evidence that the model can potentially be useful in understanding healthcare quality and patient satisfaction in this setting.

Evidence of Trustworthiness

Credibility

Credibility is whether the research findings represent plausible information derived from the original data and whether those findings accurately and truthfully reflect the participant's lived experience (Korstjens & Moser, 2017). Credibility in qualitative studies is established by using the strategies of triangulation, member checking, presenting thick descriptions, discussing negative cases, prolonged engagement in the field, using peer debriefers, and/or having an external auditor (Ravitch & Carl, 2016). Credibility and depth of study findings was increased in this study through prolonged engagement with the participants via email and within Facebook groups as well as the convergence of viewpoints and common experiences from participants of multiple sites

providing multiple perspectives (Hawkins, 2018). The Facebook groups from which the study participants were recruited required consistent group participation before allowing any posting related to study participation. Before recruiting was allowed in the Facebook groups, it was necessary to consistently offer information that was relevant to the issues being discussed for a period of time. After 4 weeks of consistent interaction within the groups, occurring approximately 30 minutes a day for at least 4 days a week, the group moderators were contacted concerning the posting of a study recruitment advertisement within the groups. Also, rather than a single meeting with participants, which can be common when performing face-to-face interviews, the asynchronous nature of the email interviews allowed access to participants from multiple states for several days (M = 34.8, SD 17.50). Instead of several participants in a single state, participants located in Hawaii, Arizona, California, and Minnesota provided varying perspectives, which once again, increased credibility by providing a convergence of viewpoints and common experiences from participants of multiple sites. Credibility was also ensured through repetitive correspondence via email as a convenient forum for asking questions aimed at elucidating ideas and ensuring that the accuracy of the description of the phenomenon was promoted (Hawkins, 2018). Questions aimed at clarifying ideas took the form of probing questions. Having extended access to participants via email allowed them time to carefully create and edit their responses to both primary and probing questions before being sent. The additional response time afforded through the nature of asynchronous email interviews may have helped to ensure an accurate account of the participants' experiences and descriptions. The ability to ensure an accurate account of the participants' descriptions is

a method of member checking and increases trustworthiness of the findings (Lincoln & Guba, 1985). In this study, an accurate account of the participants' descriptions can be ensured as the responses are unmodified verbiage provided by the participants themselves.

Transferability

Transferability, or how this study could be applied to broader contexts while still maintaining their context-specific richness, was assured by providing detailed descriptions of the phenomenon, the research methodology, and the two methods of data analysis (Nowell, Norris, White, & Moules, 2017). Detailed descriptions of the phenomenon, the research methodology, and the methods of data analysis that I provided in this study ensured that those who seek to transfer the findings or various aspects of this study to their own site are able to accurately judge whether those findings or aspects can and should be transferred (Nowell et al., 2017). The phenomenon (home oxygen users' experiences with their home oxygen services and factors needed for them to be satisfied with their service) was described in detail throughout this study. Although the research methodology was described in great detail, changes were made in the research methodology, specifically the sample size needed to achieve saturation. A sample size between 10 and 15 participants was expected to be sufficient to ensure that saturation is reached but saturation was achieved after interviewing 5 participants. The nature of purposive samples used in this study, selected by virtue of their ability to provide rich information relevant to the study phenomenon, necessitates the use of a smaller sample size. After 5 samples, informational redundancy was successfully achieved, that is, no

new information was elicited by sampling more units (see Lincoln & Guba, 1985). The themes “Provider is expected to care about the users”, “Provider convinces users”, “Provider is receptive”, “Providing promised services is expected”, and “Providing up-to-date equipment is expected” became repetitious. Also, probing questions within the interview guide were changed to improve the flow of the interview as well as to obtain more specific or in-depth information related to responses from the primary questions. Upon initial development of the interview protocol, predetermined probing questions were developed based on the expectation that the participant would create a response precisely aligned with the primary question that was asked. The nature of the open-ended interview questions used in this study allowed for more response options as the participant was empowered to express themselves freely. For example, a primary question used in the study was, “How would you describe the factors that are necessary for you to be satisfied with your home oxygen service?” One of the predetermined probing questions was, “How does the physical facility and appearance of your home oxygen services affect your satisfaction?” Based on the primary question response, “There should be periodic home inspection of equipment to assure all is in good condition and oxygen flow is correct”, the probing question was changed to, “Please further discuss your expectations about the condition of your equipment including the equipment’s appearance and your concerns about the correct oxygen flow.” This lead to the response,

> I expect the equipment that I need to be clean, up to date, comfortable, and fit in my life. It has to be made to withstand the wear and tear of my life which is going

> to stores and some family and church events. I don't want to have to worry about old equipment breaking down when I am out. I also don't want to worry about my equipment not performing as it should. I need it to live.

Changing the probing question was effective as it led to greater elaboration on the response to the primary question as well as thick and rich data concerning factors necessary for them to be satisfied with their home oxygen service. Lastly, home oxygen group members with stated negative encounters with respiratory therapists during any portion of this study were excluded from participation as bias may be introduced.

The method used to validate the study findings while performing Colaizzi's approach to data analysis was also altered from member checking or asking the participants to review the transcript of their interview to validate that the transcript thoroughly represents their perceptions. Findings in this study were validated through the process of prolonged engagement within the various Facebook groups. Prolonged engagement involved the investment of a sufficient amount of time with home oxygen patients in Facebook groups to understand the culture, build trust and rapport with participants, to overcome distortions due to the presence of the researcher, and identify characteristics and elements within the groups that are most relevant to the problem or issue being investigated (Lincoln & Guba, 1985). In this case, a sufficient amount of time invested making meaningful contributions within the group was approximately 30 minutes a day for at least 4 days a week for 4 weeks. Meaningful contributions included answering questions concerning home oxygen devices, respiratory therapy-related treatment modalities, and techniques to improve pulmonary disease symptoms.

Concerning the culture of home oxygen patients in Facebook groups, several home oxygen support groups had similar rules, expectations, and standards. Overall, Facebook home oxygen group administrators seem to be highly protective of the group members. Members of the home oxygen support groups were expected to be kind and courteous to one another and to treat all members with respect. The administrators wanted to promote a safe environment for all members to share their thoughts, fears, concerns, and questions and as such, hate speech, bullying, and degrading comments are not allowed. Members are expected to contribute more than they take from the groups, so members are expected to consistently contribute meaningful content before promotion is allowed. It was therefore a requirement for me to be an active member of various Facebook home oxygen support groups to overcome distortions due to being present in these groups. Being active within the groups for 4 weeks before promoting this study and remaining active while performing the study helped my presence to appear less obtrusive, encouraging the participant to be more open to participating in the study. This was illustrated during my various attempts to solicit participants for the pilot study. I made 4 unsuccessful attempts to recruit participants for the pilot study by gaining membership of home oxygen support groups and posting information for the pilot study without being an active group member. It was only after becoming an active group member to various home oxygen support groups for 4 weeks that soliciting for pilot study participants was effective. It was necessary to become immersed in the study site long enough to build trust with the potential participants and group administrators and for me to overcome distortions that

occur because people behave differently when they know they are being observed or are potential research subjects (Demetriou, Hu, Smith, & Hing, 2019).

Descriptions of both Colaizzi's approach to data analysis and Directed Qualitative Content Analysis were also detailed within this study. Providing thorough descriptions of all facets of the research can aid other researchers in their understanding of the multiple perspectives that define the phenomenon under study so they may develop new conceptualizations of the phenomenon (Moon et al., 2016).

Dependability

Data dependability, or how consistent or stable the data is over time, means that there is a reasonable argument for how the study's data is collected, and that the data are consistent with the argument (Ravitch & Carl, 2016). Data derived in this study can be considered dependable since a logical rationale was made as to why specific research methodologies used in this study were appropriate for answering the core concepts and constructs of the study (Ravitch & Carl, 2016).

This study and the corresponding research questions was addressed employing a phenomenological approach as the phenomenological approach focuses on exploring how human beings make sense of experiences by methodologically and thoroughly capturing and describing how people perceive, judge, remember, or make sense of some phenomenon (Patton, 2015). The phenomenological approach allowed for a deeper understanding of patients' lived experience with home oxygen services by allowing them to describe firsthand their perceptions of the services provided and what is needed for their satisfaction of home oxygen services. Gathering data describing how people

experience this study-related phenomenon required the use of in-depth interviews with home oxygen users who have firsthand experience with the phenomenon of interest (home oxygen users' experiences with their home oxygen services and factors needed for their satisfaction this this service) (Patton, 2015). This study was also descriptive in that it provided a direct description of this phenomenon and the real-life context in which it occurred (Elmoselhy, 2018).

Confirmability

Confirmability is the ability of the researchers to achieve relative neutrality and freedom from unacknowledged biases or being conscientious about the unavoidable biases that exist (Ravitch & Carl, 2016). In describing the data, examples were provided of detailed descriptions of the phenomenon by incorporating statements directly from participants. Confirmability was ensured during the data collection process of this study through the use of an audit trail detailing the process of data collection, data analysis, and interpretation of the data. I provided in the audit trail, clear details and thoughts about coding, a rationale for why codes were merged together, and an explanation of what the themes meant. Confirmability was also established in this study with the use of researcher reflexivity. To "bracket out" my personal experiences and viewpoints and explore the experiences of the study participants with an open mind, I created an identity memo reflexive journal (see Ravitch & Carl, 2016). This identity memo or reflexive journal was used to highlight potential biases brought into the study and includes the researcher's reflections on past experiences, prejudices, and orientations that may influence data interpretation and study approach (Ravitch & Carl, 2016). This journal also includes

copies of IRB communication and also details the initial struggles with gaining participants.

Results

The three research questions of this study focus on how patients with recurring LTOT prescriptions describe their experiences with home oxygen services; factors identified by patients with recurring LTOT as important to their satisfaction with home oxygen services; and how the five components of the SERVQUAL model are used in patients' with LTOT prescriptions, descriptions of factors necessary for their satisfaction of home oxygen services.

The conceptual basis for this study, SERVQUAL model, is an instrument used to measure and understand service quality in relation to certain expectations and perceptions that are needed for overall satisfaction (James et al., 2017). This model proposes that service quality and thus patient satisfaction, is influenced by five dimensions: tangibles, reliability, responsiveness, assurance, and empathy (Lee & Kim, 2017). The results of this study are organized by the approach used to analyze the data and by research questions. These research questions pertain to patients' experiences with home oxygen services and expectations or factors needed for satisfaction with home oxygen services using Colaizzi's method of phenomenological analysis. Lastly, the results of data derived from Colaizzi's approach will be analyzed using the deductive or directed approach to content analysis will be presented.

Results using Colaizzi's Approach

How do Patients with LTOT Prescriptions Describe their Experiences with Home Oxygen Services?

Following the SERVQUAL model's conceptual framework, the results discussed are based on the questions pertaining to home oxygen users' perceptions or their experiences with their home oxygen service. The experiences of home oxygen users with their home oxygen service varied from positive (worthwhile or enjoyable) to negative (disappointing) experiences with most being negative. The participants positively discussed the promptness with which equipment was maintained, their confidence in the company's willingness to provide promised services, service continuity, and employee knowledge. Also discussed positively was the company's ability to provide equipment wherever needed as well as the company's focus on the customer. Negative experiences discussed by participants were confidence in their home oxygen company in issues of billing and communication with customers, questions of whether the company is concerned with equipment caused limits in daily activities, and feelings of not being heard by home oxygen staff. One participant discussed having a negative experience concerning their home oxygen service willingness to help users.

How do Patients with Recurring LTOT Describe Factors Needed for Their Satisfaction With Home Oxygen Services?

Also following the SERVQUAL model's conceptual framework, the following results discussed are based on questions pertaining to factors needed for users' satisfaction with home oxygen services. Participants discussed the need to be educated in

equipment usage and function and the need for users to have confidence in equipment function and company services.

Themes

Themes Related to Research Question 1: How Do Patients with Recurring LTOT Prescriptions Describe Their Experiences With Home Oxygen Services?

Theme 1: Provider Cares About Users. The theme most often derived from the home oxygen users' descriptions of their lived experiences with their home oxygen services, was the provider caring about the users. The provision of caring was deemed important to the home oxygen users in issues concerning their feeling insignificant to the company, proper equipment usage/function, affective issues (social/emotional well-being), and concerns that the provided equipment limits the user's daily activities. User BB's feelings of being insignificant to the company and concerns of proper equipment usage/function were illustrated by their statements, "It seemed to me that the patient didn't matter to them" and "It would have been nice to have had some education in how to use the equipment." With respect to caring about the users' affective issues, DJ stated, "The equipment has met my physical needs even if it didn't meet social/emotional well-being needs." DJ also stated, "I feel alone since I have anxiety about going out in public with portable concentrator. I feel like I am the center of attention. Even though it is quiet, I worry about the noise it makes bothering people. Most of the time I just decide not to go anywhere." User SP stated, regarding equipment limiting the user's daily activities, "I am on 24/7 oxygen and feel rather homebound." The home oxygen supplier along with the representative were expected to be attentive to the users' feelings of anxiety concerning

whether the equipment is properly functioning, their feelings of insignificance, and to the user's ability to properly manipulate the equipment. The company is also expected to show compassion when the users expressed concerns about their diminishing daily activities associated with the need for supplemental oxygen, their desire to continue having a fulfilled life by providing equipment that allows for an active lifestyle.

Theme 2: Provider Convinces Users. The theme second most often derived from the participants' descriptions of their experiences with their home oxygen service was their desire for the provider and staff to convince users of their knowledge and professionalism. The home oxygen company's employees were expected to establish and bolster the customers' confidence in the company's courtesy, communication, and services through their knowledge and professionalism. SP stated, "I expect my home oxygen service to keep the patients as their priority and the staff members to be knowledgeable, to listen to customers, and be pleasant." Likewise, AK stated, "Any of the staff that have had to come to my home are professional and so pleasant. I can call and speak with the technicians since they are very knowledgeable and take time to answer my questions clearly." The need to convince home oxygen users of staff members' professionalism was deemed important in issues concerning users' trust in the company's charges and billing, as illustrated when DJ stated, "What I find confusing is the need for exorbitant charges that are whittled by the insurance company and not being clear if there is an option for ownership after paying rent for a long period." This issue was also seen as important in issues that concern oxygen users being heard, and effective communication between company representatives and users. This was illustrated when

DJ stated, “Sometimes I don’t feel as though we’re speaking the same language and don’t feel heard since they try to meet a need in which their perception of what I needed was different from what I actually wanted.”

Theme 3: Provider is Receptive. The theme third most frequently derived from the participants’ descriptions of their experiences with their home oxygen service was the desire for their home oxygen service to be receptive to the user’s needs and wishes. Concerning issues of receptiveness, both timely service and a willingness to help were expected when concerning equipment availability, being heard, equipment ownership, and promptness in help or problem solving. SP stated, in reference to timely service or promptness in problem solving, “They were not very accommodating when I requested to switch from tanks to a portable unit. Took 6 months to make this happen.” An instance when SP demonstrated their perceived importance of the home oxygen company being receptive to the user’s needs and willing to help was shown by the statement, “They told me that the company can provide portable concentrators but usually only in rare, specific cases. I needed a portable concentrator and they finally understood that.” The home oxygen provider was also expected to be receptive when users desired equipment and supplies that they felt would improve their lives. This was illustrated by TS when they stated,

> Another thing I don’t like is should you have a problem with any of the oxygen machines, they need to send them in, and they give you oxygen cylinders till they get fixed, and again the other supplier gave me a “rental” machine till mine gets fixed.

Subtheme: Desired Service is Provided. In the experience portion of the interview, the participant SP was asked to describe the conversation they had with their original home oxygen provider about switching from oxygen tanks to a portable unit. In discussing their purchase of their own home oxygen concentrator, SP expressed their desire to be provided and own a portable oxygen concentrator due to both convenience when travelling as carrying multiple tanks is difficult, and cost. SP stated,

- They told me that the company can provide portable concentrators but usually only in rare, specific cases.
- I don't go out much, but I am on oxygen 24/7 so when I do travel, it is impossible to carry the number of tanks I will need.
- I needed a portable concentrator and they finally understood that.

The eventual purchase by SP of their own home oxygen equipment lead to the discontinuation of their affiliation with their home oxygen service.

Theme 4: Providing Promised Services is Expected. The forth most common theme derived from home oxygen users' descriptions of their lived experiences with their home oxygen services, was provides promised services. Of particular importance with providing promised services are the concerns of availability of equipment and confidence in the company. The supplier was expected to instill confidence in the user of the supplier's ability to accurately and conveniently deliver the specific services needed by the customer. The importance of providing promised services accurately and conveniently was demonstrated when BB stated,

> I called the company to have them bring me several full tanks. I was told that they would have somebody in my area in about a week. Nobody showed. Or rather they went to my post office store and left the tanks there. So, I was without portable oxygen for a week and a half.

The importance of delivering the specific services needed by the customer or user was demonstrated when BB stated, "The equipment functions well. There just aren't enough tanks." BB further elaborated,

> I left my room. I didn't think I had a choice, so I drove my car by myself without oxygen. I used "pursed lip breathing" which somehow helps increase oxygen levels. I would have been totally isolated from my medical support people as well as my social support network had I stayed in my room.

The supplier was also expected to provide dependable equipment options that complement the customer's ability to manipulate the equipment. This was shown when SP stated,

> Companies should also provide more options when it comes to home oxygen equipment. Not everyone can manipulate the tanks that most of them provide so they lose customers who can purchase portable units or worse, the patient may not use the oxygen as much as they should.

Subtheme: Provides Equipment Where Needed. Another question addressed in the experiences portion of the interview asked the participants DJ and AK to elaborate on their experience with their home oxygen company providing equipment on vacation. Both participants were pleased when their respective home oxygen company had a

branch or affiliate of the company deliver oxygen to a specific location in the state they were visiting. DJ stated,

> I was well more than pleasantly surprised with the seamless transfer of service from one state to another. They temporarily transferred my oxygen service to one of the branches in that state and my oxygen was supplied when I needed it. A concentrator was sent before I arrived, and tanks were sent to my daughter's address always on time.

AK stated similarly that, "The home oxygen company had one of their company branches in that state deliver a concentrator to my room (while away on vacation) the same day I arrived."

Themes Related to Research Question 2: How do patients with recurring LTOT, describe the factors that are deemed important or necessary to their satisfaction with home oxygen services?

Theme 1: Provider Expected to Care About Users. The theme most often derived from home oxygen service users' descriptions of factors that are deemed important to their satisfaction with their home oxygen services is that the provider is expected to care about the home oxygen users. The provision of caring was deemed important to home oxygen users in issues concerning equipment delivery, providing enough equipment and supplies, and equipment education. Regarding this theme and related issues, BB stated, "For me to be satisfied, they would have to act like they care about my needs. Act like I matter to them in every way, equipment delivery times,

number of tanks, teaching materials, and overall attitude." Also, regarding the issue of providing enough equipment and supplies, DJ stated,

> I expect my home oxygen service to provide supplies and equipment to allow for a rich life beyond being tethered to a machine at home if that's what the user is capable of enjoying...limited supplies mean a limited life for many…myself included.

In regard to equipment education, AK stated,

> When equipment is dropped off, time should be spent with the customer explaining how to use equipment, maintain equipment and what different alarms mean. There should be periodic home inspection of equipment to assure all is in good condition and oxygen flow is correct.

Subtheme 1: Educating Users on Equipment is Important. In the portion of the interview concerning factors necessary for users' satisfaction with home oxygen services, the user was asked to describe a time when they felt that the supplier spent enough time with you and when they should have spent more time explaining the equipment. AK conveyed, both positively and negatively, how important they felt it was to educate users about equipment. AK stated that,

> The person who initially delivered my home oxygen concentrator and supplies seemed rushed when they were explaining to me how to use it. They just quickly went over things, told me to call the company if I had any more questions, and left.

AK also described a positive experience concerning equipment education. AK stated,

> After a couple of months, I had more questions so after calling the customer service number for help, the home oxygen company sent someone out the next day who took the time to explain the oxygen concentrator settings and alarms.

Subtheme 2: Supplier Should Mitigate Users' Apprehension. Also, in the portion of the interview concerning factors necessary for users' satisfaction with home oxygen services, the user was asked to explain why they think it is necessary to have periodic home inspections of equipment. AK conveyed their desire to have their anxiety reduced concerning the proper functioning of their equipment. AK stated, "I don't want to have to worry about old equipment breaking down when I am out. I also don't want to worry about my equipment not performing as it should. I need it to live."

Theme 2: Provides Up-to-Date Equipment. The second theme most often derived from home oxygen service users' descriptions of factors that are deemed important to their satisfaction with their home oxygen services was providing clean, up-to-date or modern equipment and supplies. This theme was deemed important to home oxygen users because of the belief that up-to-date or modern equipment was more functionally dependable. This was corroborated by DJ when they stated, "I expect equipment that is in good working order which means clean and serviced just prior to being reassigned to a new user." TS also corroborated the belief that up-to-date or modern equipment was more functionally dependable when they stated,

> The portable oxygen machine they gave me looks old, it's heavy, and the batteries don't seem to last as long as they should. Some of the supplies come in packaging that looks old. I just think they are trying to get rid of all their old stuff.

Theme 3: Provider is Receptive. The theme third most frequently derived from home oxygen service users' descriptions of factors that are deemed important to their satisfaction with their home oxygen services was the expectation that the provider is receptive to the user's needs and wishes. Concerning issues of receptiveness, a willingness to help was expected concerning equipment availability, equipment ownership, and the users being heard. SP expressed the expectation of a willingness to help with equipment availability and ownership when they stated, "Home oxygen services should make it easier for customers to obtain and/or purchase modern equipment. There is not a one size fit all when it comes to home oxygen customers and the equipment they need." BB expressed the expectation of a willingness to help with home oxygen users being heard when they stated, "It seems as if the administrators have lost touch with the patients/consumers. A simple, yet effective tool is a periodic satisfaction survey. This would give the administrators a reflection of the effectiveness of their service."

Theme 4: Provider Convinces Users of Staff Members' Knowledge and Professionalism. The forth theme most often derived from the participants' descriptions of factors that are deemed important to their satisfaction with their home oxygen services was the expectation that the provider convinces the users of their knowledge and professionalism. Using their knowledge and professionalism, the home oxygen company's employees were further expected to establish and bolster the customers' confidence in the company's courtesy, communication, and provided services and equipment. SP conveyed the importance of the user being convinced that the supplier and

staff possess proper knowledge, professionalism, and communication skills when they stated, “I expect my home oxygen service to keep the patients as their priority and the staff members to be knowledgeable, to listen to customers, and be pleasant.” The importance of the user being convinced that the supplier hears the home oxygen users when communicating various home oxygen-related issues can been ascertained from TS stating,

> They don’t seem to listen to me when I tell them the equipment I need. I told them that I need different length hoses to keep from getting tangled when I sleep or to keep me from falling but no one listens to me.

Users must also often be convinced that the equipment provided will function safely and as intended.

Subtheme: Possessing/Owning Properly Functioning Equipment is Important. In the portion of the interview concerned with factors necessary for users’ satisfaction with home oxygen services, the user was asked to discuss their willingness to purchase different supplies rather than continuing to use the free supplies you are currently given. DJ expressed the desire to own equipment better equipment that works with their lifestyle. DJ stated,

> The tubing and cannulas that I am given now are stiff and not flexible, they will sometimes kink which cuts off my oxygen flow. I may be willing to buy better equipment since it is necessary that I have it anyways.

Theme 5: Providing Promised Services is Expected. The theme least often derived from the participants’ descriptions of factors that are deemed important to their

satisfaction with their home oxygen services was providing promised services. Of particular importance with providing promised services are the concerns of availability of equipment and confidence in the company. The supplier was expected to provide services wherever and whenever needed while impressing upon the user their ability to accurately deliver the specific services needed by the customer. AK illustrated this expectation when they stated, "I expect good, reliable 24/7 service. If I have a problem with my oxygen equipment, I want to know that I can get help asap. My oxygen is what's keeping me alive."

Directed Qualitative Content Analysis

Data derived from the interviews concerning the first two research questions in this study was analyzed using Colazzi's approach and the resulting data was deductively analyzed employing directed qualitative content analysis. The strategy used in directed qualitative content analysis for this study started with the five dimensions of the SERVQUAL model (reliability, responsiveness, assurance, empathy, and tangibles) as initial coding categories. The operational definitions for the model's five dimensions were developed by Parasuraman in 1985. Data derived from Colaizzi's approach was analyzed highlighting all text that appear to illustrate the operational definitions of the service quality (SERVQUAL) dimensions used by patients to describe their experience with their home oxygen service as well as factors needed for the users to be satisfied with their home oxygen service. All highlighted text was coded using the predetermined categories wherever possible (See Table 5).

Table 5

Themes from Colaizzi's Approach to SERVQUAL Dimensions

Themes from Colaizzi's approach	SERVQUAL operational definitions	SERVQUAL dimensions
Provider is receptive/expected to be receptive to users' needs.	Willingness to help and respond to customer needs in a timely manner.	Responsive
Provides/expected to provide promised service.	Ability to perform guaranteed services dependably and accurately.	Reliable
Provider cares/expected to care about users.	Attention, caring, and individual service is given to the customer.	Empathy
Provider convinces users of staff members' knowledge and professionalism.	Staff ability to inspire, confidence, trust, and courtesy to home oxygen users.	Assurance
Provides up-to-date equipment.	Physical appearance of facilities, staff, equipment, building, appearance etc.	Tangibles

The findings from a directed or deductive approach to content analysis will offer supporting and non-supporting evidence for the SERVQUAL model (Ebrahimi Belil et al., 2018). Being an existing theory or model, the SERVQUAL model provides descriptions about the components making up the model which helps to determine the initial coding scheme when performing data analysis (Ebrahimi Belil et al., 2018). The strategy used in directed qualitative content analysis developed by Hsieh and Shannon (2005), starts with a theory or relevant research findings as guidance for initial codes. Using existing theory or prior research, such as that pertaining to the SERVQUAL model, key concepts, specifically the SERVQUAL model's five dimensions, served as initial coding categories. The previously accepted operational definitions of the five

dimensions of the SERVQUAL model (tangibility, reliability, responsiveness, assurance, and empathy) offered by Parasuraman (1985), were used in this study. Next, all data derived using Colaizzi's approach to data analysis was read carefully, highlighting all text that appear to illustrate the service quality (SERVQUAL) dimensions used by patients to describe their experiences with their home oxygen service and factors needed for their satisfaction with their home oxygen service. All highlighted text was coded using the SERVQUAL dimensions wherever possible. Text that could not be coded into one of these dimensions were to be coded with another label that captures the essence of the emotion. After coding, the data for each category was examined to determine whether subcategories were needed for a category. Data that could not be coded into one of the five SERVQUAL dimensions were to be reexamined to describe different service quality factors that influence patients' satisfaction. Finally, the extent to which the data is supportive of the SERVQUAL model was compared versus how much represented different service quality factors.

After analyzing the data using both methods, there was no data derived from Colaizzi's approach that could not be coded into one of the SERVQUAL dimensions after using directed qualitative content analysis. After coding, the researcher examined the data for each category and determined that subcategories were not needed. Finally, the researcher compared the extent to which the data was supportive of the SERVQUAL model versus how much represented different service quality factors. All of the data derived from this study was supportive of the SERVQUAL model.

As stated, the dimensions of the SERVQUAL model (tangibles, reliability, responsiveness, assurance, and empathy) provided the basis for categories by which the data was coded. Since confidence existed that initial coding did not bias the identification of text related to patient satisfaction, coding began immediately with predetermined codes based on the five SERVQUAL dimensions. Because the study design and analysis did not result in coded data that could be compared meaningfully using statistical tests of difference, methods of interpreting the findings included the use of rank order comparisons of frequency of codes to measure relevance. The category corresponding to the SERVQUAL dimension used most frequently by home oxygen users in their descriptions of their experiences with home oxygen services and of factors needed for their satisfaction of their home oxygen service was ranked first. The provision of empathy was used in 32 instances by home oxygen users in issues concerning their feelings of being insignificant to the company, proper equipment usage/function, affective issues (social/emotional well-being), and concerns that the provided equipment limits the user's daily activities. The SERVQUAL dimension used second most often was assurance. The assurance dimension was employed in 18 instances by home oxygen users when the company's employees were expected to establish and bolster the customers' confidence in the company's courtesy, honesty, communication, and service utilities through their knowledge and professionalism. The SERVQUAL dimension, responsiveness, ranked third in its use by home oxygen users. This dimension was used in 17 instances where timely service and the willingness to help were expected in matters concerning equipment availability, being heard, equipment ownership, and promptness in

help or problem solving relating to thing they felt would improve users' lives. The SERVQUAL dimension, reliable, was ranked forth and was used in 12 instances by home oxygen users when guaranteed services were provided or expected. This dimension was used in issues concerning the availability of equipment and confidence in the company. The supplier was expected to instill confidence in the user of the supplier's ability to provide services wherever and whenever needed while impressing upon the user their ability to accurately and conveniently deliver the specific services needed by the customer. The fifth ranked dimension was tangibles. This SERVQUAL dimension was used five times in home oxygen users' descriptions of instances when the equipment provided was up to date or modern. Providing new and/or up to date equipment helped to instill user confidence in the equipment's function and serviceability. All codes derived from the directed or deductive approach to data analysis can be used to corroborate the SERVQUAL model's five-dimensional structure.

Summary

This study was performed to answer three research questions. The first research question was, how do patients with recurring LTOT prescriptions describe their experiences with home oxygen services? While individual experiences varied, some derived themes were common within each of the participants' description. Most study participants overwhelmingly valued the concept of caring by their home oxygen company and their staff. Caring by the home oxygen company was experienced in a few instances and but overall, the concept of caring was desired in most users' descriptions of their experiences. The themes of being receptive to users' home oxygen-related needs and

convincing the users of staff knowledge, professionalism, and of equipment function were also frequently derived from study participants' descriptions of their experiences with their home oxygen service. Concerning these two themes, while both being desired, the users infrequently experienced either their company being receptive to their needs or being convinced of the staff's knowledge, professionalism, and equipment function but both. Overall, the theme of providing promised services was the least derived theme from home oxygen users' descriptions of their experiences with home oxygen services. While this theme was the least derived theme overall, more home oxygen users experienced their home oxygen company providing promised services than those descriptions expressing a desire for their company to provide promised services.

The second research question was, how do patients with recurring LTOT describe the factors that are deemed important or necessary to their satisfaction with home oxygen services? As with the first research question, the theme most frequently derived from participants' descriptions of factors necessary for them to be satisfied with their home oxygen services was caring. Similarly, to first research question, the themes of being receptive to users' home oxygen-related needs, convincing the users of staff knowledge, professionalism, and of equipment function, and providing promised services were seen by the users as necessary for them to be satisfied with their home oxygen service. Unlike the themes derived from the first research question, the theme, provides up – to – date equipment and materials, was derived from home oxygen users' descriptions of factors necessary for them to be satisfied with their home oxygen services.

The third research question was, how do patients with long-term oxygen prescriptions use the five components of the SERVQUAL model in their descriptions of the factors necessary for their satisfaction with their home oxygen service? As stated, these five components or dimensions of the SERVQUAL model are responsiveness, assurance, empathy, tangibles, and reliability. The identified codes extracted from data elicited from the first two research questions are representative of each of the five main categories derived from the SERVQUAL model dimensions with empathy being the most described dimension, followed by assurance, then responsiveness, next is reliability, and lastly tangibles. This may serve as corroboratory evidence that the SERVQUAL model can potentially be useful in understanding patient satisfaction and healthcare quality in this setting.

Chapter 5: Discussion, Conclusion, and Recommendations

The purpose of this study was to explore patients' experiences and factors that are deemed necessary to their satisfaction with home oxygen services. This study and the corresponding research questions were addressed employing a phenomenological approach as many patients' perspectives concerning their experiences and factors necessary for their satisfaction with home oxygen services was sought. Utilizing the phenomenological approach and in-depth interviews allowed for a deeper understanding of patients' lived experience with home oxygen services by allowing them to describe firsthand their perceptions of the service provided. This study was descriptive in that it described a phenomenon (patients' experiences with home oxygen services and factors needed for their satisfaction of home oxygen services) and the real-life context in which it occurred (Elmoselhy, 2018). This study, the conceptual basis of which was the SERVQUAL model and its five-dimensional structure, was performed to add to the literature concerning patient or customer satisfaction and service quality, while helping to improve service quality within home oxygen services in this particular setting.

After analyzing the data, all data derived from Colaizzi's approach could be coded into one of the SERVQUAL dimensions after using directed qualitative content analysis. In other words, all data derived from Colaizzi's approach in this study was supportive of the SERVQUAL model. Using rank order comparison, the category corresponding to the SERVQUAL dimension used most frequently by home oxygen users in their descriptions of their experiences with home oxygen services and of factors needed for their satisfaction of their home oxygen service was ranked first. The provision

of empathy was used in more instances by home oxygen users. The SERVQUAL dimensions used most frequently after empathy in rank order comparison were assurance, responsiveness, reliability, and tangibles. This may serve as evidence that the SERVQUAL model can be useful in understanding patient satisfaction and healthcare quality in this setting.

Interpretation of Findings

The findings from this study confirm the knowledge or information found previously in various peer-reviewed literature on the topics of service quality and/or patient satisfaction. Bueno et al. (2022) sought to understand the experiences of elderly people with COPD using LTOT with respect to their feelings attributed to therapy. In this study, it was found that LTOT in elderly people with COPD was associated with a poor self-image, feelings of sadness and impacted on others apart from the patient (Bueno et al., 2022).

This study's findings that LTOT negatively impacted on self-image are consistent with patient experiences described in my study. In this study, it was found that the psychological condition associated with the condition causing the need for LTOT is responsible for this lack of control, causing the patient to feel ashamed to attract even more attention (Bueno et al., 2022). Self-care may be compromised, leading to embarrassment, worsening self-image, decreasing pleasure and worsening isolation for these patients (Bueno et al., 2022).

When LTOT is prescribed, healthcare practitioners should proactively address these concerns to minimize the negative biopsychosocial experiences caused by LTOT

(Bueno et al., 2022). These concerns can be discovered by exploring patients experiences with home oxygen services using the SERVQUAL model as an often-derived theme, the provision of caring, was deemed important to the home oxygen users in affective issues (social/emotional well-being) as well as concerns that the provided equipment limits the user's daily activities. As previously stated, Clèries et al. (2016) assessed the opinions, perceptions, and attitudes of patients and their caregivers regarding home oxygen. High appreciation for healthcare providers along with the need for better coordination between various levels of care and companies supplying oxygen were demonstrated (Clèries et al., 2016). A comprehensive study to identify basic home oxygen therapy service quality issues would be useful (Clèries et al., 2016). These issues could be discovered by performing studies that seek to understand patients' experiences with home oxygen services as the exploration of patient experience is a major component of healthcare quality.

This study confirmed how important communication-related issues such as coordination of care between home oxygen users and home oxygen suppliers is to the home oxygen user. This was demonstrated in this study from the often-derived theme concerning the importance of the provider convincing the users of their knowledge and professionalism as well as their ability to effectively communicate. The home oxygen company's employees were expected to establish and bolster the customers' confidence in the company's courtesy and services through their knowledge and professionalism while clearly exchanging ideas. Gualandi et al. (2019) performed a qualitative study of orthopedic patients with the aim of understanding how different methodologies of

qualitative research can capture patient experience of the hospital journey. Four main themes emerging from the data were the information gap, the covering patient–professionals relationship, the effectiveness of family closeness, and the micro integration of hospital services (Gualandi et al., 2019). The three different standpoints (patient shadowing, health professionals' interviews and patients' interviews) allowed different issues to be captured in the various phases of the patients' journey (Gualandi et al., 2019). Hospitals can make significant improvements to the quality of service provided by exploring and understanding the individual patient's journey in relation to the different standpoints (Gualandi et al., 2019). Further studies in the academic field can explore practical, methodological, and ethical challenges more deeply in capturing the whole patient journey experience by using multiple methods and integrated tools (Gualandi et al., 2019).

Phenomenological exploration of the patient's journey experience occurs in studies such as this exploration of patients' experiences and factors necessary for their satisfaction of home oxygen services using the SERVQUAL model. This study confirmed the usefulness of the findings in this study concerning the SERVQUAL model as the three of the four main themes emerging from the data were similar to dimensions of the model. The themes derived from the study by Gualandi et al. (2019) were the information gap, the covering patient-professionals relationship, the effectiveness of family closeness, and the micro integration of hospital services. The information gap between stakeholders is similar to the assurance dimension of the SERVQUAL model as it involves behavior by the staff that instills confidence in the knowledge and courtesy of

employees. Covering patient–professional relationships is similar to the responsive dimension of the SERVQUAL model as it involves the willingness to help patients while providing prompt services. The micro integration of hospital services or the coordination of care for individual patients is similar to the empathy dimension of the SERVQUAL model as it involves the provision of caring, individualized attention to patients. The theme not similar to a SERVQUAL model dimension was that of the effectiveness of family closeness. Although the effectiveness of family closeness is an important concept, the SERVQUAL model was designed to capture patients' or customers' perceptions and expectations of a service in relation to the five dimensions not how the presence or absence of family members impact the patients' perceptions and expectations of a service. Concerning the effectiveness of family closeness, felt to be important at times, for both patients and professionals (Gualandi et al., 2019). From the patient perspective it emerges that patients like family members to stay with them when waiting for surgery. Once the surgery has been performed, fears are diminished, and pain is controlled, patients do not consider the presence of family members necessary (Gualandi et al., 2019). From the professionals' perspective, family presence is important especially shortly before and after surgery, to reassure family members that the patient is doing well (Gualandi et al., 2019). Although professionals do not see the closeness of family members as a need of the patient days after surgery as patients prefer to rest rather than having people in their room, the presence and closeness of family can have a great effect on the patient experience (Gualandi et al., 2019). Almutairi et al. (2018), explored the perceived limitations that COPD patients experience when using LTOT devices. Findings

from this study suggests that the type of LTOT device plays a significant role in patients' overall quality of life, specifically relating to their level of mobility and freedom of choice regarding daily activities, choice of work, and social interactions (Almutairi et al., 2018). There is a need for more studies that are designed to discover, from COPD patients' perspectives and experiences, which outcomes matter most (Almutairi et al., 2018). This can be initiated by exploring patients' experiences with home oxygen services as LTOT is often recommended for COPD patients by current treatment guidelines (Pavlov et al., 2018). This study confirmed the usefulness of the findings in this study concerning patients' experiences with home oxygen services and SERVQUAL model. Concerning the type of LTOT device playing a significant role in patients' overall quality of life, the provision of caring or empathy was deemed important to home oxygen users specifically because of concerns that the provided equipment limits one the user's daily activities.

The SERVQUAL model and its corresponding dimensions (tangibles, reliability, responsiveness, assurance, and empathy) provided the basis for categories by which the data was coded. As previously stated, rank order comparison was used for the SERVQUAL dimension used most frequently by home oxygen users in their descriptions of their experiences with home oxygen services and of factors needed for their satisfaction of their home oxygen service. In this study, this top-ranked dimension was empathy. The home oxygen user felt it was important that the company and/or staff members show that they care and show individualized attention in issues concerning users' feelings of being insignificant to the company, proper equipment usage/function,

affective issues (social/emotional well-being), and concerns that the provided equipment limits the user's daily activities. The SERVQUAL dimension used second most often was assurance. The assurance dimension, which concerns the ability of employees to use their knowledge and courtesy to convey trust and confidence, was used by home oxygen users when the company's employees were expected to establish and bolster the customers' confidence in the company's courtesy, honesty, communication, and service utilities through their knowledge and professionalism. The SERVQUAL dimension responsiveness, which involves the willingness to help customers and to provide prompt service, was ranked third in its use by home oxygen users. This dimension was used in instances where timely service and an enthusiasm to help was shown or expected in matters concerning equipment availability, being heard, equipment ownership, and promptness in help or problem solving relating to things they felt would improve users' lives. The SERVQUAL dimension, reliable, was ranked forth and was used by home oxygen users when guaranteed services were provided or expected. This dimension was used in issues concerning the availability of equipment and confidence in the company. The supplier was expected to instill confidence in the user of the supplier's ability to provide services wherever and whenever needed while impressing upon the user their ability to accurately and conveniently deliver the specific services needed by the customer. The fifth ranked dimension was tangibles. This SERVQUAL dimension was used in home oxygen users' descriptions of instances when the equipment provided was up-to-date or modern. According to home oxygen users, providing new and/or up-to-date equipment helped to instill their confidence in the equipment's function and

serviceability. All codes derived from the directed or deductive approach to data analysis were used to corroborate the SERVQUAL model's five-dimensional structure.

Limitations of Study

The aim of this study was to explore patients' experiences and factors that were deemed necessary to their satisfaction with home oxygen services. However, the limitations of trustworthiness that arose from the execution of this study must be acknowledged. Trustworthiness in qualitative studies refers to whether the findings can be trusted to faithfully describe the research participants' experiences (Korstjens & Moser, 2018). Trustworthiness necessitates the use of systematic and methodological processes in the endeavor to achieve the goal (Ravitch & Carl, 2016). Concepts that were applied in this study to increase trustworthiness were transferability and dependability. A limitation in this study arose specifically with the concept of dependability.

Dependability refers to the consistency or stability of data over time (Ravitch & Carl, 2016). Dependability means that there is a reasonable argument for how the study's data are collected, and that the data are consistent with the argument (Ravitch & Carl, 2016). For studies to be considered dependable, the appropriate research methods must be used, and an argument must be made as to why specific research methodologies used are appropriate for answering the core concepts and constructs of the study (Ravitch & Carl, 2016). Dependability was achieved in this study by providing detailed documentation of the research design and implementation and by developing a thoroughly articulated justification for these research methodology choices (Moon et al., 2016; Ravitch & Carl, 2016). Developing a thoroughly articulated justification for research methodology

choices helps to confirm the appropriateness of the data collection plan considering the research questions (Ravitch & Carl, 2016).

Dependability in this study, though, may be questioned because of the data collection method employed. The ideal and initially desired setting for this study was face-to-face interviews in a healthcare facility where a home oxygen clinic was located. The occurrence of the COVID 19 pandemic prevented me from employing this method as the requirement of social distancing within healthcare facilities along with policies put in place to reduce all face-to-face interactions with patients to those that are medically necessary caused the need to move all research to a virtual environment. The setting most conducive to participants at this time and allowing for the most demographically diverse group of participants who are involved in the phenomenon being studied, was through a virtual setting. In this case, email interviews were used when there may have been an argument for using more appropriate methods such as telephone or video interviews. It may be argued that utilizing written responses of email interviews precludes the ability to hear or see social cues when soliciting the participants' thoughts and feelings concerning the phenomenon under study. There is also a lack of certainty that the study participant received the email as intended. Emails can potentially be sent to junk/spam files or even get blocked due to a firewall.

Concerning the use of emails in general when performing in-depth interviews, qualitative researchers have found that, when using email for data collection, the scheduling advantages increases access to working and active participants from a wider geographic range without additional expenses related to travel costs and travel time

(Hawkins, 2018). Although telephone and video interviews offer the same advantage as email interviews, a definitive feature only available when employing the email interview is the ability to conduct asynchronous interviews (Hawkins, 2018). Since email interviews are not limited by time constraints of scheduled face-to-face, telephone, or video interviews, they enable the establishment of a relationship with the participants while giving the participants time to reflect on answers before offering responses. As far as being able to hear or see social cues of the participants, interjections and exclamatory words, bold print, capitalization, and punctuation are often used to communicate various emotions, tones, inflections, and mood. Participants of this study used capitalization, punctuation, and exclamatory words to connote emotion. To ensure the integrity of the interview, a message was sent via Facebook Messenger, to each participant, to verify the date on which they initially responded to the email interview questions and the date on which the last response took place.

I also must acknowledge the possibility of social desirability bias as a limitation within this study. Social desirability bias refers to the tendency to present oneself in a manner that is perceived to be socially acceptable but not actually reflective of one's reality (Bergen & Labonté, 2019). Social desirability bias is more common in research on issues that participants find sensitive or controversial and may lead to overestimation of the positive and diminished heterogeneity in responses (Bergen & Labonté, 2019).

Strategies to minimize social desirability bias include the use of a private location when interviewing participants, establishing rapport with participants while conducting the in-depth interviews to help put the participants at ease, and asking interview questions

in specific ways to promote more candid and detailed responses (Bergen & Labonté, 2019). Techniques for asking interview questions in a manner that limits social desirability responses involve the use of indirect questioning, providing assurances to hesitant participants that their opinions are not wrong, and they can speak freely, probing for more information, requesting stories or examples, and prefacing the question (Bergen & Labonté, 2019).

Since the in-depth interviews of this study were performed using email, there was no way of knowing whether the participants were in a private setting. Concerning the establishment of rapport with participants, it was necessary to build rapport with participants within the various Facebook groups for a month before asking them to participate in the study, so I assumed that each participant felt comfortable while being interviewed. Regarding asking questions in a manner that limits social desirability, indirect questions were used in the interviews, for example, participants were asked to please describe their experiences with their home oxygen service. Due to the use of email interviews within this study, providing assurances to hesitant participants was not possible as the awareness of respondent hesitancy requires face-to-face interactions. Probing questions along with requesting stories and prefacing the questions were also used in this study. Although several strategies to minimize social desirability were used within this study, some were not used therefore introducing the possibility of social desirability bias within this study.

Another limitation that must be acknowledged was interviewing five participants within this study. A sample size between 10 and 15 participants was expected to be

sufficient to ensure that saturation was reached. According to Bartholomew et al. (2021), a focused sample size in phenomenological studies such as this should be between five and 25 but saturation, or the repetition of derived themes, was achieved after interviewing 5 participants. Although the sample size in qualitative studies tend to be small in order to support the depth of case-oriented analysis, in the phenomenology approach, the effect on a sample size is meditated through the richness of the data obtained from individual informant (Sebele-Mpofu, 2020). Having too small of a sample size though, limits the study's reproducibility and applicability to broader populations (Neuzil et al., 2023).

Recommendations

The recommendations for further studies are grounded in the strengths and limitations of this research as well as the findings established in the literature review. The strengths of this research include both the theoretical and conceptual frameworks upon which the literature review was based as well as the plan for the research method. Since a limitation of the research included the use of email interviews as the data collection method, recommendations for further research include a qualitative study employing face-to-face in-depth interviews of home oxygen patients. This would provide the opportunity to gain better insight into the phenomenon being studied (patients' experiences with home oxygen services and factors identified as important to their satisfaction with home oxygen services). The ability to visualize and hear social cues, changes in tones, and hesitations as participants provide responses to interview questions allows for the real-time response or capture of conversation emotions (Hawkins, 2018). Future studies should also implement strategies to minimize social desirability bias

including the use of a private location when interviewing participants, establishing rapport with participants while conducting the in-depth interviews to help put the participants at ease, and asking interview questions in specific ways to promote more candid and detailed responses (Bergen & Labonté, 2019). Also based on this study's limitations, future studies should use a larger sample size to increase study reproducibility and applicability to broader populations. Another recommendation for further research would be to perform this study in both civilian and VHA facilities with home oxygen services. This recommendation is based on the literature review and evidence that there is a gap in the literature indicating a need for targeted quality improvement to ensure that both veterans and civilians receive uniformly high-quality care at all healthcare facilities (Anhang Price et al., 2018).

Implications

Positive Social Change

The results of this study can potentially lead to positive social change. The process of exploring patients' experiences with their home oxygen service and factors necessary for their satisfaction with their home oxygen service, provided corroboratory evidence in the ability of SERVQUAL model to be used in this setting to capture participants' expectations and perceptions along five dimensions of service quality. This provides knowledge of specific areas in need of attention within a home oxygen service to improve overall service quality. Improving the quality and delivery of home oxygen services at the organizational level may lead to improvements in the health and well-being as well as the social conditions of home oxygen patients resulting in positive social

change for that population (Howlett et al., 2021). Individual level social change involves increased awareness and understanding of service quality along with attitudinal changes of all stakeholders resulting in changes at both the institutional and community levels (Walden University, 2014). Making improvements in the institutional level of home oxygen services will require individual(s) responsible for providing home oxygen service to make a social change at the individual level by making the necessary attitudinal and behavioral changes that improve service quality.

The results of this study can serve as an indicator of an opportunity to review practices in home oxygen services as they relate to various quality service gaps described in the SERVQUAL model and the need to adjust or improve upon those specific quality-related measures. It is recommended that home oxygen services employ studies such as this to highlight specific areas in need of attention to improve overall service quality.

Conclusion

In conclusion, this study has identified how patients with recurring LTOT prescriptions describe their experiences with home oxygen services, how patients with recurring LTOT describe the factors that are deemed important or necessary to their satisfaction with home oxygen services, and how patients with long-term oxygen prescriptions use the five components of the SERVQUAL model in their descriptions of the factors necessary for their satisfaction with their home oxygen service. This study focused on filling the gap that exists on this topic, specifically bringing attention to patients' experiences, patient reported factors needed for their satisfaction of their home oxygen services, and the SERVQUAL model as a means of improving patient

satisfaction and overall quality of care in healthcare services. The application of the theoretical framework (phenomenology) and the conceptual framework (SERVQUAL model) along with an in-depth literature review aided in the identification of the knowledge gap and the need for further research in this area. The overall goal of this research, which was developed to help fill this knowledge gap, was to create positive social change by providing corroboratory evidence that the SERVQUAL model could potentially be useful in improving healthcare quality and patient satisfaction in home oxygen services by identifying quality service gaps in dimensions in need of attention. The exploration of the real experiences of the patients along with their perceptions of the quality of care has become an important strategy for healthcare organizations. Studies such as this may add to the body of knowledge concerning the SERVQUAL model and its ability to be used for the quality improvement of healthcare organizations' medical services, regardless of the type of applied examination, leading to better patient outcomes (Jonkisz et al., 2021).

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Appendix A: Inclusion/Exclusion Criteria for Study Participants

Inclusion criteria

• English speaking supplemental oxygen therapy users.

• At least 18 years of age.

• Receiving supplemental oxygen from companies based in the United States.

• Recurring and active prescription for long-term supplemental oxygen for greater than 1 year.

Exclusion criteria

• Inability to take part in interviews due to cognitive or language difficulties.

Appendix B: Interview Protocol

Opening: Thank you for participating in my doctoral study about your experiences with home oxygen services and factors you identify as important for your satisfaction with your home oxygen service. In this interview you will be asked a series of brief questions to gather information on the topic. If at any time you feel uncomfortable, we can stop the interview. All the information provided through email correspondence will be noted and analyzed after the interview. I will also write down my thoughts about the information and will provide to you what I noted and a summary of the interview through email correspondence within two weeks of the completion of the email interview. You will then have the option of confirming whether your responses are accurate or changing your response. Do you have any questions before we begin?

Patients' experiences with home oxygen services

1. How would you describe your experiences with your home oxygen service?
2. How would you describe your experiences with the equipment provided to you by your home oxygen service?
3. How would you describe your experiences with the staff or people who work in your home oxygen service?
4. Do you have any suggestions for improving your experiences quality with your home oxygen service?
5. Is there anything we missed or that you feel would be important to talk about concerning your experience with your home oxygen service?

Patient-reported factors needed for their satisfaction with home oxygen services.

1. How would you describe the factors that are necessary for you to be satisfied with your home oxygen service?
2. Please describe to me what you expect from your home oxygen services staff.
3. What advice would you give to administrators of your home oxygen service to improve your satisfaction in your home oxygen service?

(Davis et al., 2018; Khor, Goh, McDonald & Holland, 2017; Wattanapisit & Saengow, 2018).

(Getahun & Nkosi, 2017; Waters, Edmondston, Yates & Gucciardi, 2016; Wattanapisit & Saengow, 2018).

Appendix C: Colaizzi's Method of Phenomenological Data Analysis (1978)

Step 1

The transcripts are read in-depth to obtain a feel for the data, its inherent meaning.

Step 2

Significant statements or phrases are extracted.

Step 3

The meanings of each statement are then formulated.

Step 4

The formulated meanings are organized into clusters of themes revealing patterns in the data. During this time the original transcripts are reviewed and compared to ensure validation.

Step 5

The results are then integrated into an exhaustive description of the phenomena in question.

Step 6

The exhaustive description is formulated into a statement of identification of its fundamental structure i.e., the essential structure of the phenomenon.

Step 7

Participants are revisited and asked about their views of the findings so far.

(Paré, 2015).